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International Federation of Clinical Chemistry and Laboratory Medicine





## In this issue

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### □ EDITORIAL

- ▶ Message from the eNews Editor 4

### □ THE VOICE OF IFCC

- ▶ IFCC President's message – May 2023 5
- ▶ A new JCTLM database and jctlm.org website bring together traceability-related information 6
- ▶ IFCC National Societies' Code of Ethics: actual situation 10
- ▶ Visiting Lecturer Programme (VLP) report: 23rd JMBC-SMCC Marrakech (MO) 2023 – an exciting interlude between Green Lab Medicine and the enchanting Majorelle Garden 12
- ▶ IFCC ABBOTT VLP at the 23th Moroccan Days of Clinical Biology – Artificial Intelligence and health: between performance and ethics 15
- ▶ IFCC ABBOTT VLP at the 23th Moroccan Days of Clinical Biology – National Reference Centers (CNR) for the fight against communicable diseases and Reference Medical Biology Laboratories (LBMR): exportable know-how? 19

▶ Adaptive learning in the training of future laboratory medicine professionals: testimonials from around the world	24
▶ CMBC course invitation: 6-day beginners' course in molecular diagnostics	29
▶ Let's celebrate the Global MedLab Week 2023!	30
<b>□ IFCC: THE YOUNG SCIENTISTS</b>	
▶ IFCC PSEP program report – Ferdy Royland Marpaung	33
<b>□ CONTRIBUTE TO IFCC eNews</b>	
▶ Global recognition awaits – start preparing today!	36
<b>□ NEWS FROM REGIONAL FEDERATIONS AND MEMBER SOCIETIES</b>	
▶ SEQC <sup>ML</sup> : the clinical laboratory, key in the diagnosis of hereditary cancer and the search for biomarkers in neurodegenerative diseases	38
▶ News from the Japan Society of Clinical Chemistry (JSCC): the 2022 JSCC Article Award	41
▶ Global Medical Laboratory Professionals Week celebration at an academic medical centre in Pakistan	42
<b>□ IFCC'S CALENDAR OF CONGRESSES, CONFERENCES &amp; EVENTS</b>	
▶ IFCC and Regional Federation events	43
▶ Corporate Member events with IFCC auspices	44
▶ Other events with IFCC auspices	45

## EDITORIAL

### Message from the eNews Editor

*by Katherina Psarra*  
eNews Editor

Dear colleagues,

We are already in the middle of May. Lots of congresses are taking place all over the world. At long last, people meet with old and new colleagues and friends, and participate with a new intensity, with a new joy.

We will all meet in Rome very soon.

Go through President's Prof. Khosrow Adeli's message and you will learn everything about the EuroMedLab. Lots of people (more than ever) from all over the world will attend the meeting and will stroll in the Eternal City's streets. As mentioned in my previous editorial, the exhibition will be immense and the Scientific Program should meet everyone's expectations. Our President's enthusiasm, like my own, is well justified and comes out clearly on the following page.

Music from all over the world can be heard in this issue too with "testimonials" from all over the world about the use of new learning software. It seems very successful! Why don't you listen to all these people and use it too? I think I will try it.

A note from the Ethics Committee makes us understand the importance of ethics in our community, in the labs. Which brings me to AI.

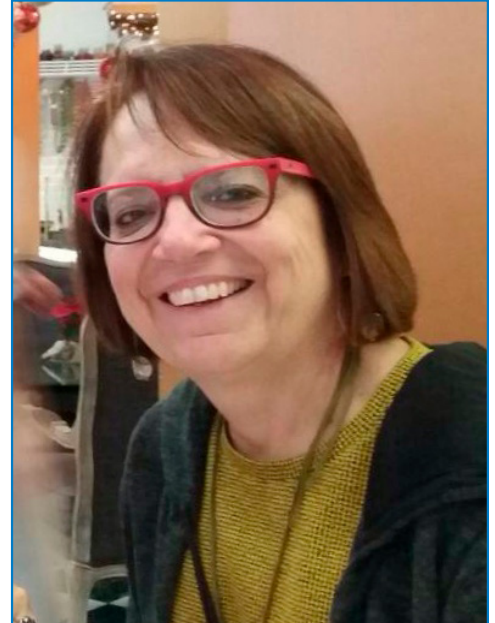
AI is the hot topic nowadays. We have just finished the Hellenic Cytometry Congress and AI has been at the center of our discussions. The same seems to have happened at the Moroccan Congress of Clinical Chemistry. Dr. Bernard Gouget and Dr. Alexander Haliassos discuss and explain AI in the Moroccan Health Service.

Go through this issue, dear friends, and be ready to discuss with our colleagues from all over the world, in Rome, be ready to enjoy one another's company, be ready to be taught and to teach!

Have a great time in Rome!

Let's enjoy the multicultural IFCC family!

*Katherina*



Katherina Psarra, MSc, PhD

## THE VOICE OF IFCC

### IFCC President's message – May 2023

*by Khosrow Adeli*

*IFCC President*



Prof. Khosrow Adeli  
PhD, FCACB, DABCC, FAACC

Greetings to everyone in the IFCC family! We are now only days away from the IFCC-EFLM WorldLab/EuroMedLab Congress in the fabulous city of Rome and the IFCC Executive Board is very much looking forward to meeting thousands of delegates, corporate representatives, exhibitors and visitors expected to attend this very important and popular event. As mentioned in my previous message in April, the XXV IFCC-EFLM WORLDLAB-EUROMEDLAB CONGRESS will set the all-time record in attendance, with over 9000 people expected to be in Rome during the 5-day event.

The IFCC Organization, in collaboration with the EFLM, SIBioC, and MZ Events, is also delighted to present an exciting new prospect for laboratory professionals and scientists. **Those unable to travel to Rome can still participate in the Roma 2023 WorldLab/EuroMedLab Congress virtually**, granting them access to the remarkable scientific program that has been meticulously crafted. Registered participants will have the opportunity to attend all symposia virtually from May 21st to May 25th.

In order to provide equal access to laboratory professionals and young scientists/trainees from around the world, **we are pleased to announce that virtual registration for this significant event will be available FREE of charge for attendees from low- and middle-income countries (as defined by the World Bank)**. For individuals from high-income countries, a nominal fee will be applicable for registration. This initiative will ensure inclusivity and widespread participation in the event. It will also lead to much greater and broader dissemination of educational opportunities offered by IFCC and its regional federations; ultimately benefiting countless more laboratory professionals and trainees globally.

The IFCC Executive Board is thus pleased to warmly invite those who are unable to attend the event in person to register for virtual access. By doing so, you can fully benefit from the robust scientific program meticulously organized for the Roma 2023 Congress.

I am also pleased to remind you that following this year's congress in Rome, IFCC has planned a major international congress each year, one year in Europe (the EuroMedLab) and the following year in another region around the World (the WorldLab). IFCC and its regional federation and national society partners are already hard at work to organize the **2024 WorldLab Congress in Dubai** and the **2025 EuroMedLab Congress in Brussels**. Delegates attending the Rome Congress will have access to further information and preliminary programs for these upcoming congresses.

Eagerly looking forward to the opportunity to meet many of you in Rome at the end of May. I am certain you will relish and be impressed by the exceptional scientific program and the stunning beauty of Rome during the upcoming congress.

See you soon, Khosrow 😊

## A new JCTLM database and jctlm.org website bring together traceability-related information

by **Elvar Theodorsson**

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**W. Greg Miller**

*Chair, JCTLM, Professor of Pathology, Virginia Commonwealth University Health System, Richmond, VA, USA*

The number of in-vitro diagnostic results reported annually is ten times greater than the number of inhabitants on the planet. In principle, we all should be able to trust that the results are equivalent irrespective of where the samples are taken, analyzed, and reported over time. However, this requires standardization of measuring systems and universal implementation and maintenance of metrological traceability of in-vitro diagnostic medical devices. This is an ongoing process, requiring the initiation of new standardization programs, and maintenance and verification of the performance of existing ones.

The *Joint Committee for Traceability in Laboratory Medicine* (JCTLM) is an international consortium that promotes the global standardization of clinical laboratory test results and provides information on reference materials, reference measurement procedures, and reference measurement services available worldwide [1]. The JCTLM improves the accuracy and equivalence of in-vitro diagnostic results in healthcare by evaluating and endorsing reference measurement procedures, reference materials, and reference measurement services for clinical laboratory tests. It provides a platform for collaboration among international organizations and serves as a reference point for healthcare professionals, *in-vitro* diagnostics manufacturers, regulators, and other stakeholders for traceability in laboratory medicine by maintaining a database of reviewed and approved reference measurement procedures, materials, and services. This resource helps to ensure that laboratory measurements are traceable to international standards and that results from different laboratories are equivalent and can be compared with confidence. (Figure 1)

The JCTLM has recently published a new version of its database (<https://www.jctlmdb.org>) which lists higher-order reference materials, measurement methods and services to be used in calibration hierarchies for value-assigning calibrators and trueness control materials for quantities measured by *in-vitro* diagnostic medical devices. The new version of the database improves information retrieval and facilitates the web-based search for information, including keyword search or an advanced search. A JCTLM database application programming interface (API) will be released shortly enabling seamless machine-readable access to the information in the JCTLM database for other software solutions. The listed reference materials, measurement methods, and services aim to facilitate the application of the traceability hierarchy models described in ISO 17511:2020, “In vitro diagnostic medical devices — Requirements for establishing metrological traceability of values assigned to calibrators, trueness control materials, and human samples”. The JCTLM currently lists 256 higher-order reference materials, 215 measurement methods, and 224 reference measurement services.

The JCTLM evaluates reference measurement procedures and reference materials developed by different organizations worldwide and determines if they meet the requirements of the international standards “In vitro diagnostic medical devices – Measurement of quantities in samples of biological origin – Requirements for content and presentation of reference measurement procedures” (ISO 15193:2009) and “In vitro diagnostic medical devices – Measurement of quantities in samples of biological origin – Requirements for certified reference materials and the content of

supporting documentation (ISO 15194:2009). These ISO standards are applicable globally and are also part of a set of harmonized standards of the European in vitro diagnostics directive (IVDD) with revised versions currently being processed for their acceptance as harmonized standards within the European in vitro diagnostics regulation (IVDR). Reference materials and methods that are found compliant with the ISO standard requirements are published in the JCTLM database, and provide manufacturers, regulators,

and laboratories with tools to ensure the metrological traceability and equivalence of measurement results, which are crucial for the diagnosis and treatment of diseases [2], and for meeting regulatory requirements for *in-vitro* diagnostic medical devices.

JCTLM also reviews and lists calibration laboratories, which provide reference method services that conform to the “Laboratory medicine – Requirements for reference measurement laboratories” (ISO 15195: 2003).

The screenshot shows the JCTLM database search interface. At the top, there is a header with the text "Accurate results for patient care" and "Laboratory medicine and in vitro diagnostics". Below the header is a navigation bar with a home icon, "CONTACT US", "NEWS", and a search icon. The search results are displayed on a white background with a blue search bar containing the text "glucose". To the right of the search bar are "SEARCH" and "RESET" buttons. Below the search bar, there is a "Refine results" section with various filters: TYPE (Reference material: 11, Reference method: 7, Reference service: 14), ANALYTE CATEGORY, ANALYTE NAME, MATRIX CATEGORY, MATRIX, COUNTRY, and MEASUREMENT PRINCIPLE / TECHNIQUE. The main results section shows 32 results. The first result is "NCCL ID LC-MS/MS reference measurement procedure for glucose" with JCTLM DB Identifier C14RMP11. The second result is "HSA ID/LC/MS/MS reference measurement procedure for glucose in human serum" with JCTLM DB Identifier C13RMP4. The third result is "glucose in glucose crystalline material" from the National Institute of Metrology (NIM) - China, with NIM CRM GBW 10062, Purity of Glucose. The fourth result is "glucose in Blood serum, Blood plasma" from the Shanghai Center for Clinical Laboratory (SCCL) - China. The fifth result is "DGKL reference method for glucose" with JCTLM DB Identifier C3RMMP19. The sixth result is "glucose in Whole blood, Blood serum, Blood plasma, Other, Urine" from the Reference Institute for Bioanalytics, Calibration Laboratory II (RfB) - Germany. The seventh result is "glucose in Blood serum" from Shenzhen Mindray Bio-Medical Electronics Co., Ltd. Standardization Laboratory (Shenzhen Mindray Bio-Medical Electronics Co., Ltd) - China. At the top of the results section, there are buttons for "EXPORT PDF", "EXPORT XLS", "DETAILED VIEW", and a link to "Select all results".

Figure 1: The result of a simple search for “glucose” in the new JCTLM database

The JCTLM has recently published a new edition of its website <https://jctlm.org/> which provides a single entry point for traceability-related information and resources and brings together materials from its parent organizations, the International Bureau of Weights and Measures (BIPM), the International Federation of Clinical Chemistry and Laboratory Medicine (IFCC), the International Laboratory Accreditation Cooperation (ILAC) and the International Council for Standardization in Hematology (ICSH). The new version of the website is designed to cater to phones and tablets as well as desktop browsers. The website is a resource for information on the international standardization of laboratory medicine and provides information on the principles of metrological traceability and the importance of standardization in laboratory medicine. It also lists the JCTLM member organizations and provides information on the JCTLM database of higher-order reference materials, measurement procedures, and measurement services.

The new website home page also makes it easy to locate information for developers of reference methods, materials, or services who desire to nominate new reference resources for review and listing in the JCTLM database. The submission process forms and the review team's policies and procedures for review are easily identified. One feature of the new database that needs development is a fully electronic system for making nominations and managing the review of submissions. JCTLM is currently reaching out to corporate members of the IFCC and to JCTLM members requesting voluntary contributions to fund this development.

The updated JCTLM website is a user-friendly resource for laboratory professionals, researchers, in-vitro diagnostics manufacturers, regulators, and policymakers who are engaged in providing medical laboratory testing, and healthcare services, and promoting international standardization and metrological traceability to optimize laboratory medicine on a global scale. (Figure 2)

The *International Bureau of Weights and Measures* (BIPM) [3] has been a driving force in establishing and maintaining traceability to international standards since its inception in 1875. The BIPM is responsible for maintaining and disseminating the International System of Units (SI), which provides the basis for

scientific, industry, and trade measurements. Establishing and maintaining international references for quantities have been the cornerstone of traceability, and the principles established in this work have served as the model for traceability and standardization in laboratory medicine.

Standardization of measurement procedures is a primary focus of the *International Federation of Clinical Chemistry* (IFCC) since its establishment in 1952 [4]. The IFCC is dedicated to developing and implementing standardization processes that ensure the accuracy and reliability of laboratory testing results, which are essential for effective patient care. This is exemplified by the fact that the Scientific Division of the IFCC has currently twenty working groups working on standardization projects. In addition to its work on standardization, the IFCC also supports education and training programs and provides e-learning modules, webinars, and workshops, to help promote knowledge and skills amongst laboratory professionals.

The *International Laboratory Accreditation Cooperation*, ILAC (<https://ilac.org/>), operates in accordance with ISO/IEC 17011. It organizes conformity assessment for calibration laboratories (using ISO/IEC 17025), testing laboratories (using ISO/IEC 17025), medical testing laboratories (using ISO 15189), inspection bodies (using ISO/IEC 17020), proficiency testing providers (using ISO/IEC 17043) and reference material producers (using ISO 17034). ILAC represents a network of mutual recognition agreements among accreditation and the acceptance of accredited test and calibration results.

The *International Council for Standardization in Hematology*, ICSH, (<https://www.icsch.org/>) is a standardization organization for diagnostic hematology. It coordinates Working Groups of experts to examine laboratory methods and instruments for hematological analyses, to deliberate on issues of standardization, and to stimulate and coordinate scientific work as necessary for the development of international standardization materials and guidelines.

Professionals in healthcare need adequate *in-vitro* diagnostic support for diagnosing diseases, estimating disease risks, and monitoring treatments' effects. The professions initially created such diagnostic tools,



particularly in the last century [5], but they are currently primarily developed by manufacturers. Due to the importance of in vitro diagnostic (IVD) for results, national and regional regulators are obliged to make sure that systems and services serve the needs of their populations. Therefore, manufacturers of in vitro diagnostic measurement systems must have access

to optimal standards and higher-order reference materials, measurement procedures, and services mutually recognized around the globe [2]. Substantial divergences in regulatory demands around the globe increase costs and increase uncertainty in applying decision limits and reference intervals established in clinical studies.

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A global resource for traceability in laboratory medicine and in vitro diagnostics.

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Entrance to the JCTLM database for searching higher-order reference materials, measurement methods and services  
→ JCTLM Database
- Database procedures**  
Information about the processes and procedures of the JCTLM Database Working Group  
→ Database procedures
- Metrological traceability**  
General information about metrological traceability  
→ Metrological traceability
- Submissions**  
Information on how to submit new reference materials, measurement methods and measurement services for evaluation.  
→ Submissions
- Review teams**  
Membership and procedures for the review teams that evaluate new reference materials, measurement methods, and measurement services.  
→ Review teams
- Funding and Sponsorship**  
Sources of direct funding and sponsorship for the JCTLM  
→ Funding and sponsorship

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Figure 2: The entry page of the new JCTLM.ORG website.

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## IFCC National Societies' Code of Ethics: actual situation

*by Dr. Nilda E. Fink*

*Chair, IFCC Task Force on Ethics*

*Dr. Sudip K. Datta*

*Member, IFCC Task Force on Ethics*

IFCC is a global association integrated by multidisciplinary professionals with shared interests in clinical chemistry and laboratory medicine. National societies, not individuals, from all over the world, engaged in clinical chemistry and laboratory medicine are eligible to join the IFCC as Full members. Although each member Society has its own bylaws and norms at the national level, all must meet certain requirements in order to be a Full member of the IFCC. From the earliest days of laboratory medicine, the analytical foundations of clinical care were developed. Later on, a variety of ethical issues mainly in the field of laboratory management, practice, and application in medicine were raised. According to the rules of many international organizations, each National Laboratory Society must have its own Code of Ethics to carry out its regular activities at the national level.

In August 2021, the IFCC Code of Ethics, which was produced by the Task Force in Ethics (TF-E) was published after Executive Board (EB) edition and approval. The duties outlined in the IFCC Code of Ethics are fundamentally based on those set forth in the Belmont Report, which was produced in 1978 by the then - U.S.A. National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research. It has a preamble and four targets (Patients, Colleagues, Profession, and Society). The standards of ethical behavior in laboratory medicine, encompassing laboratory practices, research and development, education, management, and other professional services, are set to be supported by all willing participants.

The TF-E Code of Ethics guidelines is to be used by IFCC members, and can be modified as appropriate for different countries. IFCC would expect all member societies to have a Code that is comparable with the IFCC guidelines. In case any National Society has not yet developed its own code, they could consider adhering to IFCC code. It was contemplated that in future, may be in a couple years all Full and Affiliate members of IFCC must fulfill this requirement. Also, it was considered to be a requirement for new memberships.

A summary table for the current status is being completed. Countries were arranged as per their region and different characteristics of COE were considered. Relations of number of National Societies that have its own COE to total number of countries per region were included. From the figures, we concluded that NAFCC (2/2) and LATAM (8/15) are in best conditions. However, much work must be done to get more National Societies to have their own codes.



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**ARRANGE A MEETING**

## Visiting Lecturer Programme (VLP) report: 23rd JMBC-SMCC Marrakech (MO) 2023 – an exciting interlude between Green Lab Medicine and the enchanting Majorelle Garden

*by Bernard Gouget, Chair IFCC-CMHBLM  
Alexander Haliassos, IFCC Treasurer*

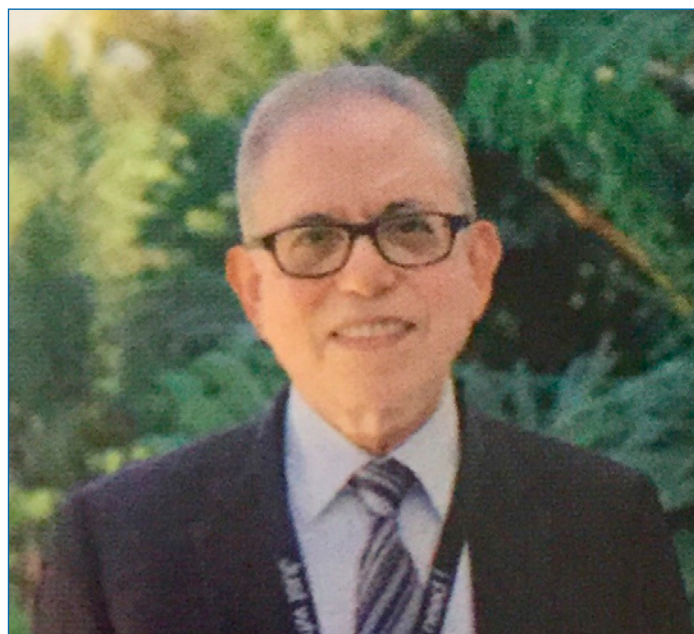
Marrakech, one of the four imperial cities, surrounded by solid ramparts, is nestled like an enchanting pink jewel at the foot of the spectacular Atlas Mountains. When you think of this city, you imagine the ochre colors and fragrant flavors! If the first impressions paint the city in a pink haze, one quickly feels enchanted at the sight of the Koutoubia and its minaret. The color of the city comes from the simplest of architectural materials “the red earth”. Snow, sand and greenery embody the past, present and environment of this mystical city.

Marrakech, the epicenter of culture for ages, was the ideal destination for the 23rd congress of the Moroccan Society of Clinical Chemistry (23rd JMBC- SMCC, March 16-18, 2023) organized under the chairmanship of Professor Layachi Chabraoui who was forced to stay in Rabat at the last minute. The hotel was directly connected to the Palais des Congrès located on Avenue Mohamed VI, no excuse not to attend the sessions, and discuss during tea breaks in the middle of the IVD exhibition. The 23rd JSMBC was an opportunity for laboratory medicine specialists to share and discuss findings, exchange ideas and insights, networking for collaboration and career development with Generation Z or “Gen Z”, that has never been in a world without smartphones and social media. They were born with digital and grew up with it. Global warming, growing inequality, terrorism and now a pandemic are part of Generation Z, true digital natives. Environmental protection and sustainable development are now a major cause for which young people want to get involved and exchange ideas.

One day prior to the conference, a SMCC-IFCC Young Scientist Workshop, coordinated by Dr. Hichem Asami and Dr. Otmane Touzani, was held with support of an Abbott VLP program. The objective was to highlight key issues in addressing climate change by

decarbonizing laboratory medicine and healthcare. This type of workshop with the younger generation of laboratory medicine specialists plays an important role in networking by providing opportunities to collaborate with laboratory medicine projects identifying mentors. Alexander Haliassos began his presentation reminding IFCC’s initiatives for the younger generation, such as educational webinars, exchange programs, mentoring programs, and scholarships.

Health care institutions have a major responsibility in the society, not only to provide quality of care, but also develop a sustainable and socially responsible health care system that must respond to the three pillars constituting the following approach: economic, social and environmental sustainability. Innovation remains at the heart of the sustainable evolution of practices, the first results are visible today. Bernard Gouget pointed out that climate change is expected to profoundly disrupt our health care system.



Professor Layachi Chabraoui

*Article continued on next page*

Understanding the awareness of the implications of climate change on public health requires the reduction of greenhouse gas emissions, searching for substitutes for fossil resources as well as the need to manage the consequences of ecosystem degradation and climate crises. Due to extreme weather events such as flooding and coastal storms. Strong climate change strategies and interventions are needed to protect the health of populations as health facilities are often caught between resource conservation, economic imperatives and maintaining quality of care. At the same time, it is important to ensure that health status is as good or better than it is today through a new balance between the preventive and curative systems.

Through compliance with standards, the search for health safety in all its components and risk management, sustainable development in health enables existing quality approaches to be reconciled by asking new questions and refining reasoning on: the values, missions, activities of a health structure or medical laboratory and their responsibilities in the process of continuous quality improvement in a perspective of sustainability and management of environmental, social and economic risks, while being attentive to a health system that is respectful of people and their environment. Many normative instruments are available to support certification. Two preferred ISO standards: ISO 26000-2010 for social responsibility guidelines and ISO 14001-2015 were widely discussed. ISO 14001 provides a systematic approach to planning, implementing and managing the environmental management system. Its implementation allows the medical laboratory to control its environmental impact and ensure that it meets legal requirements, both national and international. Before starting the certification process, it is important to set clear objectives for the implementation and evaluation of the environmental management system. ISO 14001:2015 is still not widely used in the medical laboratory and hospital sector, which admittedly has a range of other compliance standards to meet. Nevertheless, with environmental considerations and legislation at the forefront of national and local government thinking, it is certainly only a matter of time before this standard is recognized as a benchmark for hospitals and medical laboratories in general. The EFLM guide for green and sustainable medical

laboratories was also presented. A French translation is underway with the help of the LABAC association.

Medical Labs are increasingly looking to support and incorporate sustainability and safety into building design or renovation. With advanced technologies and trends changing so rapidly, it is important to ensure that the creation of a laboratory is relevant for the needs of today and tomorrow. Emissions from building materials account for 28% of global emissions from buildings and the construction sector. Replacing them with renewable materials is better for the environment and will ensure the sustainability of the laboratory for years to come. The good news is that it is becoming easier to find materials using fewer chemicals and therefore leaving a much smaller footprint. Creating a more sustainable laboratory medicine platform not only benefits the environment, it also creates a more attractive workplace for employees. HQE (Haute Qualité Environnementale) is a standard green building in France. To meet the logic of NF HQE, all actions taken must be in the direction of reducing the environmental impact of buildings, reducing energy consumption and continuously improving the comfort and health of occupants.

Laïla CHABAA, former professor at the Mohammed VI University Hospital of Marrakech, recalled that the Mohammed VI University Hospital (UHC) of Marrakech has been committed since 2012 to a sustainable development approach that has become the cornerstone of its hospital project. Since then, the UHC has strengthened its sustainable management policy



Professor Laïla Chabaa

to meet the challenges of environmental protection, social progress and economic efficiency. The UHC has also integrated sustainable development in all its institutional projects and has expanded the scope of its actions by multiplying field initiatives. She recalled that in 2016, Marrakech hosted the Climate and Health Conference/COP22. Mohammed VI University Hospital was the first Moroccan member of the international Global Green and Healthy Hospitals network in 2017. Among the UHC's flagship projects are several audits, an awareness and communication policy, monitoring and auditing of energy, electricity and water consumption. The use of solar energy is being increased.

In May 2022, King Mohammed VI launched the construction of the new Ibn Sina University Hospital in Rabat, a revolutionary 1000-bed project designed by the architect Abdelwahad Mountassir. The futuristic hospital complex will meet all international standards and environmental regulations.

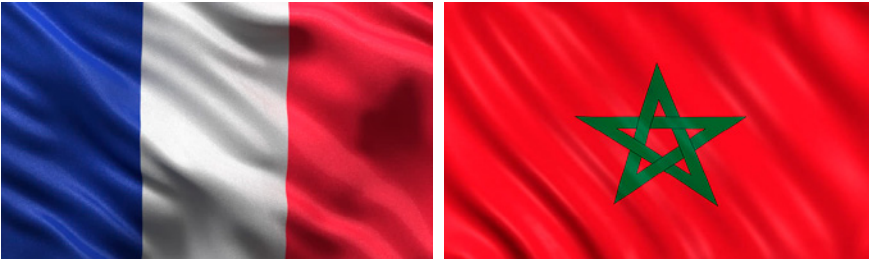
Sustainability is quickly becoming a defining issue of the times. Its impact is increasingly being felt in health-care and laboratory medicine. In an ideal world, every

laboratory medicine specialist would work in a green, zero-waste, and fully sustainable laboratory. But we all know this is a huge long-term challenge. It is clear from the discussion with the young scientists in "Gen Z" that they are aware of the key role they must play in health care. The diversity of experience and career choices in laboratory medicine is great. While YS-Gen Z are convinced that the medical biologist has a bright future, they are also realistic about the difficulty of the job market and the real impact of human activity on the environment. In its latest report, the International Labor Organization estimates that those under 25 will be the main victims of the economic consequences of the coronavirus. For digital natives, it is no longer enough to be the one who knows, or who has the authority, but the one who does the change. Members of Generation Z prefer actions to big ideas and pragmatism to idealism. Their guiding principle is less hierarchy and more collaboration. They operate in terms of projects rather than careers. There is every reason to believe that the society led by Generation Z will be more inclusive, collaborative, proactive, motivated, and not afraid to engage, innovate and succeed.



Spotlight on Moroccan Gen Z

## IFCC ABBOTT VLP at the 23th Moroccan Days of Clinical Biology, SMCC Marrakech – Artificial Intelligence and health: between performance and ethics



*by Bernard Gouget  
Chair IFCC-CMHBLM  
Alexander Haliassos  
IFCC Treasurer*



**Session AI:** (L to R) Dr. Pierre-jean Lamy, Philippe Chatron, Bernard Gouget, Alexander Haliassos, Laila Benchekroun, Abdelhalim Chachou

If the Medina is the historic center of the city of Marrakech, avenue Mohammed VI, formerly called avenue de France, in the Guéliz district, is the most modern and popular street in Marrakech. This avenue serves high-development neighborhoods such as the “wintering area” as well as the “M avenue”, a new city center between the convention center and the Menara gardens where Juventus star Cristiano Ronaldo has just opened a sumptuous hotel attracting many curious delegates, football fans! Recently renovated

and managed by Mövenpick Mansour Eddahbi Marrakech, over the years, the Palais des Congrès has built a solid reputation all around the world. It was really the place to be for the 23th Moroccan Days of Clinical Biology (Journées Marocaines de Biologie Clinique). Prof. Layachi Chabraoui, SMCC President, organized the program around 6 symposia: quality assurance, antibiotic resistance, disease prevention in at-risk groups, news on haemostasis, neonatal screening and, ethics of AI in lab medicine. This last session was

coordinated by Dr. Mohammed Benazzouz, Pr Laila Benchekroun and Dr. Abdelhalim Chachou.

If artificial intelligence (AI) is often considered a luxury accessible only to western countries, it is increasingly part of the development strategies of many emerging countries. As a vector for the development and improvement of health systems, AI is positioned as the complementary tool necessary to contribute to improving performance in the health sector. It can then become the necessary alternative to meet the changing needs and expectations of Moroccan patients. AI is an opportunity for the development of the health and education sector in Morocco, recently underlined Prof. Ch. Nejjari, president of the Mohammed VI University of Health Sciences during a meeting with X-Maroc and University Paris 13 Panthéon cité. Morocco has put in place a powerful action plan to develop its health sector through AI. Among the major recommendations, we can mention: Invest heavily in AI training, harmonize and federate patient data information systems, ensure the dematerialization of health sector data to feed AI solutions developed or to be developed in Morocco, encouraging the development of clinical studies involving AI and, ensure the creation of an ecosystem including actors from the academic, health and industrial sectors to induce a socio-economic impact.

Philippe Chatron, medical biologist, member of the National Academy of Pharmacy in Paris (FR), is interested in the use of medical biology data. He recalled that the main tool used routinely for data processing in medical biology laboratories is Excel. However, there are much more effective decision support tools. Softwares automatically allow the extraction, integration and dissemination of qualified data from multiple software (Excel, database, Structured Query Language, human resources, orders, and stock; medical data from other laboratories) subject to having made them interoperable and having developed the appropriate connections. Depending on the complexity, an internal or external data warehouse will be implemented in an environment that complies with the "General Data Protection Regulation" or GDPR which governs the processing of personal data on the territory of the European Union. As soon as there is language and texts, we can use AI which is a vital

tool to assist in interpretation and that impacts all phases of biological diagnosis. These AI systems will be able to correlate genes, diagnosis, symptom and environment more quickly, by mixing an astronomical amount of disordered scientific data, and make medical biology tend towards a paradigm shift. While traditional biological research methodology starts with a hypothesis to be explored, now it may just analyze the data and see what comes out of it. The power of the machines is there, but the data is more and more complex, and sometimes not usable. Accumulating data makes sense, but it still needs to be reliable to develop efficient intelligent systems, especially when it comes to independent data. In any case, it is necessary to make sure possible drifts and algorithms are used in-fine. If in some cases, the performance of the machine exceeds that of the practitioner, the human being still has this strength of very broad contextual knowledge that the machine does not yet have.

Alexander Haliassos presented the contribution of AI in external quality assessment-proficiency testing schemes. AI can be used in EQA-PT schemes mainly for the: intelligent calculation of the consensus mean, optimized exclusion of outliers, intelligent graphs scaling and groups (methods-analyzers) classification, expert results stratification and rating of the performance of participants, detection and elimination of most non-analytical errors. AI allows automated and enhanced detection of errors in EQA-PT testing. The EQA-PT materials can sometimes exhibit a matrix effect in the examination system used by a participating laboratory or any other sources of analytical problems from reagents, instruments, test methods, calibrations and calculations. The use of AI with IoT in the field of external quality assessment - proficiency testing programs in lab medicine facilitates the use with better reliability of EQA and PT schemes. AI allows better tracing and eliminates analytical and non-analytical errors, improving the information provided to users leading to the improvement of the overall quality of participating laboratories by empowering their staff and giving them a measurable way to test their individual skills.

The so-called "omics" sciences, such as genomics or proteomics, predict an increasingly personalized medicine, supported by AI. Dr. Pierre-Jean LAMY, Molecular Onco-geneticist, Scientific Director Inovie Group,



shared his experience on cancer diagnosis using liquid biopsy. Liquid biopsy has recently been driven by the rising incidence of cancer and the rising preference for fast, minimally invasive diagnosis. Modern cancer medicine is hampered by two big challenges: detecting cancers when initiating and offering to cancer patients personalized, dynamic care. Several medical and academic labs and biotech firms are turning to artificial intelligence, working to develop machine-learning algorithms that could help decipher weak signals in the blood that can identify cancers at an early stage and indicate whether a cancer is responding to treatment in real time. The term liquid biopsy covers the analysis of all the molecules, particles and cells from the tumor and found in the circulating blood or fluids such as urine or CSF. Today, clinical use of liquid biopsy is most often limited to the analysis of circulating tumor DNA (ctDNA). This term refers to small fragments of DNA that are released into the bloodstream by cancer cells. These fragments can be detected by analyzing a blood sample and can be used as a cancer biomarker. The analysis of the sequence of these fragments provides specificity and complementary information to the analysis of biopsies in a non-invasive way. However, ctDNA analysis can be complex and time-consuming, and the results can be difficult to interpret. During NGS sequencing, the background noise can be confused with the circulating DNA signal which often remains very weak. AI is currently used in bioinformatics to improve secondary, tertiary and quaternary analyzes of sequencing. The curation of variants now benefits from many tools allowing to model the protein effect of mutations. Advances in big data analysis, computing, and AI allow the combination of patient history, clinical data, and liquid biopsy profiles, including complex genomic analyzes and the determination of the pathogenicity of the variants, in order to obtain a more precise and earlier diagnosis.

Ethics is a permanent questioning which aims to determine how to act the best in order to reach a decision, with respect to people. It requires collective reflection in order to arrive at adjusted and reasonable choices, framed by law and resulting from the study of various possibilities, recalled Bernard Gouget. Ethical challenges are the next frontier in the implementation of AI to promote human development and

well-being. AI is incredibly stimulating innovation in the field of health. As one of the main sources of data in medicine, the laboratory is a natural place for AI technologies to reach their full potential. It can serve the interest of patients and communities if there is a collective effort to design and implement ethically defensible laws and policies for ethical technologies.

Some pressing ethical concerns about the use of AI-based systems include: generating net benefits, doing no harm, compliance with laws and regulations, confidentiality of patient data and privacy and preventing data breach, free and informed consent, fairness i.e. no unfair discrimination, limitations in the analysis of massive population health data, and the risk to individual health from biases in the data collected (e.g. inaccurate or inadequate data). When an algorithm impacts on an individual, transparency, explicability and contestability outcomes are key elements. The accountability of algorithm developers must also be identifiable.

These AI devices raise new ethical issues combining digital and medical aspects and bring out legal, social and political issues for a variety of stakeholders such as patients, health professionals, public decision-makers and populations. They question the training of practitioners, the digital inter-mediation involved in the doctor-patient relationship, the appropriation and informed consent of patients when using these new tools. A fortuitous discovery is often a source of complex situations for the patient and the medical team, a particularly serious question for radiology or genomics.

Ethical reflection refers to a system of values for which four universal ethical principles are associated, especially in biomedicine: the autonomy of the patient, beneficence, non-maleficence and justice. Therefore, intelligent machines must be ethical from their conception to their use. The responsibility attached to the machine belongs to both the designers and the owners. Thus, it is essential to bring a "moral personality" to these AIs through an algorithmic ethical conscience. Ultimately, the notion of responsibility must be at the center of the doctor-AI-patient relationship. As an example, there is now a increase of wearable devices using AI systems for diagnosis, mobile applications, social networks or simple questionnaires. Such uses can be for diagnosis or monitoring of pathologies or

for recreational purpose outside medical supervision. The data measured can be collected by non-medical professionals and may create a gap between the supply of health care subject to state regulation and other unregulated practices. There is a risk of misuse of unprofessional advice, unsafe treatment and illegal practice, accentuating people's vulnerability.

Any AI system must be subject to human control and used primarily for the purpose of improving care before organizational, economic or managerial interests. The explainability of AI techs is one of the factors of social acceptability. The principle of "human guarantee" of AI has been recognized in France in the new bioethics law. The aim is to ensure that AI remains both medically effective and ethically responsible. In 2020, this concept of human guarantee was incorporated into the self-assessment grid for medical devices integrating AI, published by the Haute Autorité de Santé (FR).

AI has a lot of promise in the health sector and lab medicine. AI should be planned for and managed with commensurate care and resources. Powerful AI systems should be developed only once we are confident that their effects will be positive and their risks will be manageable. AI research and development should be refocused on making today's powerful, state-of-the-art systems more accurate, safe, interpretable, transparent, robust, aligned, trustworthy, and loyal.

When robotics play a social role with patients, the integration of the notion of ethics in AI is necessary. Medicine is not only a matter of diagnosis and technology. AI, far from dispossessing doctors and medical biologists of their attributions, on the contrary will provide them a daily decision support. The human relationship is irreplaceable, AI will not take away this dimension, but it will reduce in part the human failure.



**SMCC EB and 23rd JMBC-COC members with IFCC representatives**

L to R: Otmane TOUZANI, SMCC - EB member, Alexander Haliassos, IFCC Treasurer, Carole Poupon, President JFBM, Mohamed Touimi-Benjelloun, Secrétaire general SMCC, Bernard Gouget, Chair IFCC-C-MHBLM, Mohamed Choukri, SMCC EB member, Abdelrhafour Guedira, SMCC vice-President, Nahiba Kamal, SMCC Trésorier, Badre Eddine Lmimouni, SMCC Secrétaire general adjoint

## IFCC ABBOTT VLP at the 23th Moroccan Days of Clinical Biology, SMCC Marrakech (MO) – National Reference Centers (CNR) for the fight against communicable diseases and Reference Medical Biology Laboratories (LBMR): exportable know-how?



*by Bernard Gouget*

*Chair, IFCC-CMHBLM*

*Member, Scientific Committee 23rd JMBC*

*Idriss Lahlou Amine*

*Mohammed V University, Faculty of Medicine and Pharmacy of Rabat*

*Head of Virology Laboratory,*

*Center for Virology, Infectious and Tropical Diseases,*

*Mohammed V Military Teaching Hospital, Rabat, Morocco*

The health sector in Morocco is at a decisive turning point where many formative projects are being set up, whose successful implementation will be able to guarantee equitable access to quality care to all its citizens (38.353 million inhabitants). Ensuring preparedness and response to health threats, alerts and crises, improving and optimizing epidemiological surveillance of infectious diseases as well as monitoring and anticipating health risks are key issues for Morocco.

Morocco benefits from several organizations dedicated to health surveillance, epidemiological monitoring and health security. These include:

- **The National Institute of Hygiene (INH) of Morocco**, under the supervision of the Ministry of Health, represents the government authority of reference that guarantees effective management of hygiene and epidemiological surveillance issues in Morocco. The INH fulfils many missions including: technical and scientific support for various public health programs; services and expertise in the field of medical biology and environmental health; running the national network of public health laboratories; contributing to training in their areas of expertise and conducting studies and research in health in partnership with national and international organizations. At the beginning of 2023, according to the Moroccan Field Epidemiology National Association (ANET), nearly 100 field epidemiologists are operating in the various regions of the Kingdom to prevent the spread of infectious diseases and thus contribute to the protection of population health and advances in health and safety.
- **The National Public Health Emergency Operations Center (CNOUSP)**, installed in 2019, with the establishment of regional centers to ensure the management of public health emergencies, particularly those related to infectious diseases.
- **The Center of Virology, Infectious and Tropical Diseases (CVMIT)** at Mohammed V Military Teaching Hospital in Rabat, inaugurated by his Majesty King Mohammed VI on March 8, 2016. The CVMIT is intended to support the national and international network for surveillance of emerging and re-emerging diseases as well as infectious diseases research. In addition to the development of innovative techniques for the diagnosis of emerging viruses, it provides health care and monitoring activities. The CVMIT played a major role during the COVID-19 pandemic, alongside INH laboratories, regional laboratories dedicated to this activity, the Institut Pasteur in Casablanca and the Research and Medical Analysis Laboratory of the Gendarmerie Royale.

*Article continued on next page*

The first plenary conference of the 23rd Journées Marocaines de Biologie Clinique [23rd JMBC-Moroccan Clinical Biology Days] organized on March 16-18, 2023 by Prof. Layachi Chabraoui, SMCC President, was an opportunity to present the French network of National Reference Centers (CNR) for the fight against communicable diseases and Reference Medical Biology Laboratories (LBMR) with a focus on microbiology and to examine the transferability of French know-how.

The CNR appellation was first introduced in France in 1972. CNRs are located in a public or private health entity, or a teaching or research institution. They are appointed for a 5-year term and their renewal is subject to evaluation by a CNR Committee under the responsibility of the Director General of the National Public Health Agency France.



Idriss Lahlou Amine

Prof. Christophe Burucoa, Chairman of the CNR Committee, recalled that to carry out its infectious disease surveillance missions, Public Health France (Santé Publique France) relies on a network of 43 National Reference Centers. The CNRs have four missions: expertise, advice, contribution to epidemiological surveillance, and alert.

The expertise missions concern the identification and characterization of strains sent by medical biology laboratories (LBMs) for which identification techniques are not available. Common strain identifications and serological diagnoses that are routine diagnostic activities for LBMs are entrusted to the CNRs only exceptionally.

The expertise of CNRs can be urgently requested by the health authorities. They manage the biological samples collected and the databases relating to them. These samples remain government property. If the facility hosting a CNR changes, particularly during a new mandate, these collections of standard strains, antigens or reference immune sera, epidemiological, serological and molecular markers and databases are transferred to the newly named CNR laboratory.

CNRs also participate in the development, optimization, validation, dissemination and recommendations for medical biology examinations (diagnostic, identification and/or typing techniques) related to the pathogens for which they are responsible. For emerging pathogens requiring urgent measures to control epidemics, the CNRs concerned ensure the development and/or validation of diagnostic techniques and contribute to their dissemination. The CNR may be required to dispense reference reagents if these are not available. The CNR must provide a ramp-up plan in the event of an exceptional health situation, in particular to deal with an influx of samples. They also contribute to the assessment of susceptibility to anti-infectives and to the definition of pathogen resistance thresholds to anti-infectives. CNRs must supply data to international databases. They participate in the evaluation of pathogen inactivation procedures.

CNRs are called upon to advise healthcare professionals and health institutions and agencies. They participate in the development of infectious disease prevention and control measures and respond to requests for expertise or investigations. Finally, they contribute to the epidemiological surveillance of infections by performing the analyses necessary for the surveillance of the pathogens for which they are responsible, in particular the characterization of strains. They also run a network of corresponding laboratories that carry out some of these analyses and centralize the results. CNRs participating in infection surveillance must, at a minimum, contribute to

the provision of relevant sociodemographic, epidemiological and management data. For uncommon infections, they centralize all the strains isolated in France. They participate in the surveillance of pathogen resistance to anti-infectives and contribute to the detection of healthcare-associated infections and the analysis/investigation of epidemic phenomena. Their missions include the study of the immune coverage of a population that may or may not be protected by one or more vaccines and the evolution of this coverage; the typing of strains and the participation in international surveillance networks.

The alert missions of the CNR concern reporting, without delay, to the French Directorate General of Health or to the Regional Health Agencies of any phenomenon that may cause a risk to public health, such as the increase in the frequency of isolation of a pathogenic microbe; the identification of a new, rare or emerging pathogen (coronavirus, Ebola virus, etc.) or a variation or mutation of a known pathogen. A CNR is required to report the appearance of new clinical forms or pathologies in new populations as well as similar events in a foreign country.

Reference Medical Biology Laboratories (LBMR) were established by decree in 2016. Chaired by Bernard Gouget, the LBMR selection committee brings together 80 medical biologists, appointed for 5 years. They concern all areas of medical biology. Nine specialized commissions have been set up: biochemistry-molecular biology, constitutional genetics, somatic genetics and cancer, hematology, hemostasis, biological immunology, immuno-hematology, pharmacotoxicology and one on microbiology. Any medical biology laboratory (LBM) that is duly



On the screen: Christophe Burucoa, President Committee CNR  
On the stage: Bernard Gouget, President Committee LBMR



The Frenchies ready to test the excellence of Moroccan cuisine, pure pleasure, and quality!

up-to-date in its legal situation can apply, without restriction of field of examination or pathology. It must meet the conditions laid down by the legislative and regulatory provisions defining the practice of medical biology, including accreditation.

From a legal point of view, an LBMR is defined as a sub-entity of an LBM. An LBMR is a nationally recognized referral laboratory for one or more medical biology examinations or for one or more specific pathologies. Its expertise contributes to the development and evaluation of new analytical methods for the diagnosis of the identified pathology or pathologies. Its operational know-how makes it possible to support specialized care, to advise, carry out and interpret specific examinations necessary for the management of the reference pathology. An LBMR is both a center and a network facilitator for the management of singular and complex clinical-biological cases. It has a certain attractiveness at the regional, national or even international level.

LBMRs address public health needs. This concerns assistance in screening, prevention, diagnosis and evaluation of the occurrence of pathological conditions and therapeutic management. Their integrative dimension brings



together multidisciplinary skills around a team of medical biologists with proven expertise in innovative and sophisticated techniques with solid and well-defined interactions with clinicians. They contribute strongly to the dissemination and optimum use of medical and scientific information.

LBMRs also have a mission of **sending the data** received to the appropriate public databases, for the purpose of epidemiological surveillance, research and knowledge development for the individual or collective management of patients. This presupposes having sufficient epidemiological data. Health authorities carry out their alert missions in compliance with the rules of reactive vigilance and health monitoring. In the absence of a specific rule, the alert is made to regional health agencies. There could have been some concern about overlaps in the expertise of microbiology LBMRs with CNRs, but this is unfounded. However the relationship between them should be clearly defined. CNRs are chosen to be nationally representative for surveillance while an LBMR can be either national or regional depending on the reference pathology. The CNR makes as few primary diagnoses as possible, in contrast to an LBMR. There is currently no targeted funding for LBMRs while CNRs are funded. Nevertheless, certification is very attractive. 580 LBMRs were certified in 2021, and no fewer than 560 applications are being evaluated following the additional call for applications launched in February 2022.

Operating since 1972, CNRs are leading sectors in the context of epidemiological surveillance, sentinels giving the alert in the event of an epidemic as well as promoters of innovative techniques. Their inclusion in research units is undeniably one of their most important assets, allowing them to remain at the forefront of progress at all times and develop ever more efficient tools. For LBMRs, the first certification took place in July 2021. The second wave of certification should make it possible to limit diagnostic wandering while facilitating access to difficult biological diagnoses throughout the area. The innovative techniques implemented by LBMRs are at the interface of clinical and translational research and practice in medical and clinical biology based on research, evidence-based medicine and publications. Scientific monitoring of technological, diagnostic, epidemiological and therapeutic developments are at the heart of their dynamics.

Today, we must address the many evolving global health challenges. CNRs and microbiology LBMRs have already demonstrated their operational capabilities for innovation to deal with critical situations. Their mutual expertise contributes to the development of public health policies, to develop diagnostic tools and surveillance systems in the field of prevention and control of communicable diseases or to detect the occurrence of such diseases. During unusual or serious events, any country should be able to guarantee continuity of care through the fairest mobilization of resources, in a manner appropriate to the needs of the population and the scale of the situation, in order to guarantee fair and balanced access to care for all.



# Adaptive learning in the training of future laboratory medicine professionals: testimonials from around the world

by **Nader Rifai**  
Chair, IFCC EMD

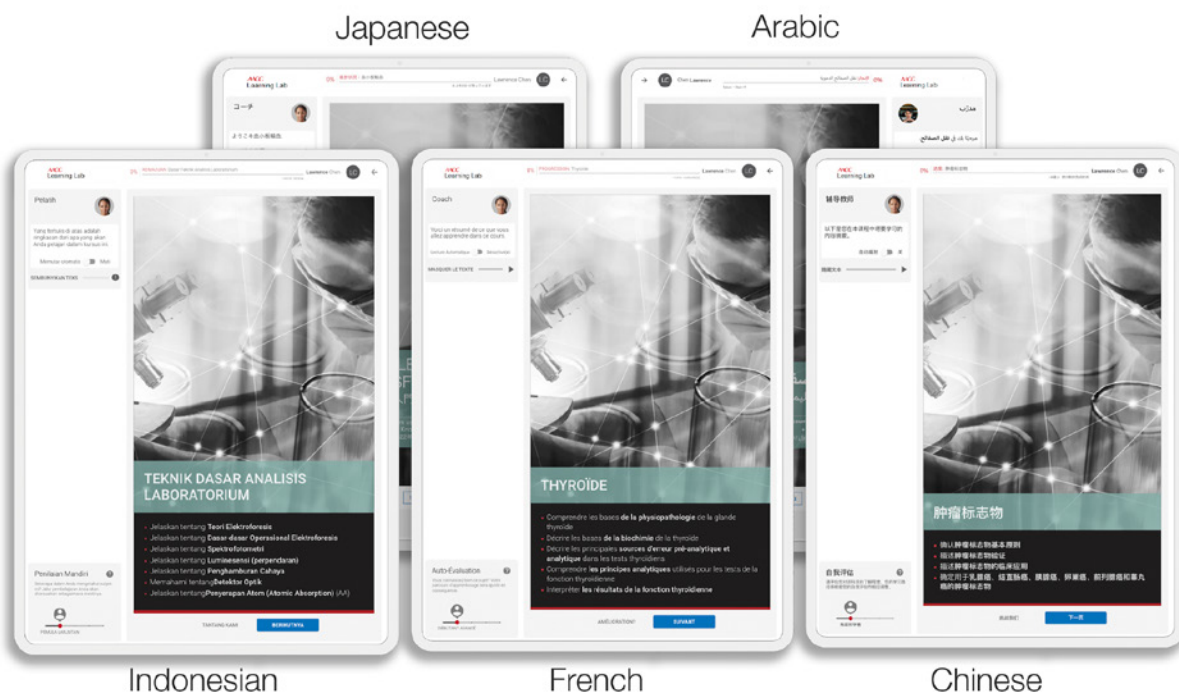
Department of Laboratory Medicine, Boston Children's Hospital, Boston, MA, USA

Adaptive learning, the closest to personalized education, is becoming widely used in high-school and college education as well as in the preparation for professional certification exams and in corporate training programs in certain countries.

Studies have shown that adaptive learning enables faster learning, a higher retention rate of learned materials, a higher passing rate, and higher exam scores compared to traditional eLearning methods. Adaptive learning, powered by artificial intelligence, is efficient because it adapts the information to the learner's needs and considers what the learner already knows.

Learning Lab for Laboratory Medicine (<https://area9lyceum.com/laboratorymedicine/>) was born 8 years ago and was endorsed by the IFCC in 2022. The program can be characterized as follow:

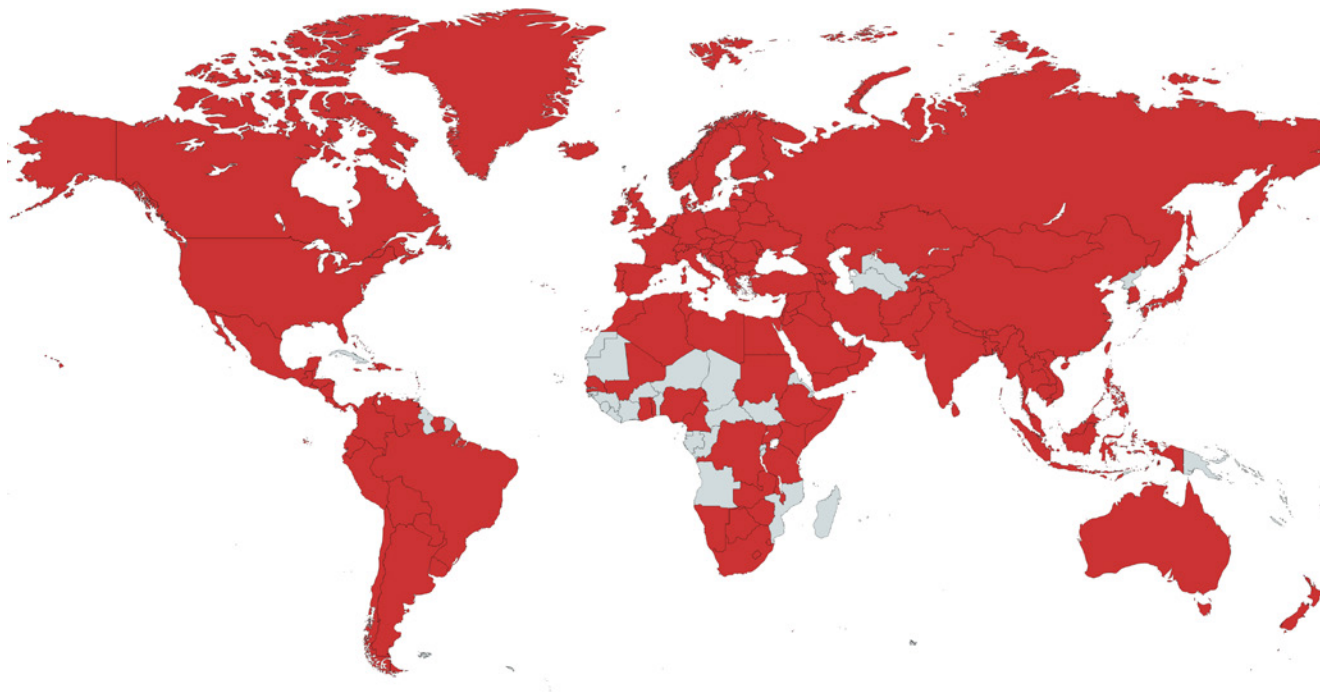
- Consists of >120 advanced and >80 Medical Laboratory Specialists courses that cover all aspects of laboratory medicine
- Courses have been prepared, reviewed, and translated by >430 experts from around the world and are routinely updated.
- The program is free of charge to individual users, to eliminate financial barriers.
- In addition to the English version, the program is available, in part, in Chinese (simplified & traditional), Bahasa Indonesia, and French. In addition, the program is being translated to Arabic, Japanese, Korean, and Portuguese; these websites will be available in 2023.



Article continued on next page



- All editors, authors, reviewers and translators are volunteers; none received any financial compensation for their efforts.
- Currently, >11,000 individuals from 150 countries are using this program.



Countries of Learning Lab Users

Learning Lab is designed for laboratory medicine professionals working in hospital and commercial clinical laboratories as well those practicing in the in-vitro diagnostics industry. Furthermore, the program is very useful to those undergoing training in one of the disciplines of laboratory medicine. Educators in our field from around the world are starting to incorporate the Learning Lab into the curriculum of their training programs. Some of these educators and their trainees shared their experiences and opinions about the Learning Lab in their own voice.

Dr. Neil Anderson, an Associate Professor of Pathology and Immunology at Washington University School of Medicine and the Director of Molecular Infectious Disease Laboratory and Assistant Medical Director of Microbiology at Barnes Jewish Hospital in St Louis MO, USA as well as the Pathology Residency Director stated *“We have used the Learning Lab in our training program and have found it to be a terrific tool for teaching laboratory medicine. The educational content is well curated by subject matter experts and aligns with the concepts we teach our trainees. The modular nature allows us to provide study resources to trainees with specific knowledge deficits and selectively adopt material into the existing curriculum. While there are many “question set” resources available, the adaptive learning aspect of the Learning Lab is a unique way to promote learner engagement.”*



Drs. Anderson and Hernandez

His chief resident in clinical pathology, Dr. Patricia Hernandez indicated *“I started using the Learning Lab during my first year of residency and it has been an important tool for learning. It is a very dynamic resource: it includes*

questions with comprehensive explanations making the information easy to assimilate. What I like the most is that the Learning Lab includes diverse fields of Laboratory Medicine, which has been pretty helpful on different rotations. Also, it's not necessary to complete a topic in order to start another one. There is no established sequence, which makes Learning Lab very flexible, allowing it to fit my needs".

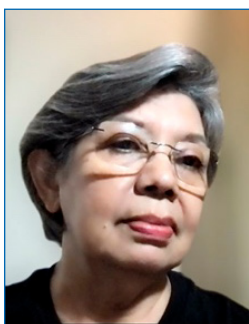


Dr. Croal demonstrating the Learning Lab to two trainees, Katie Onions and Danielle Bell

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Dr. Bernard L. Croal, the President of the Association for Clinical Biochemistry and Laboratory Medicine (UK) and the Chair of the Royal College of Pathologists (RCPATH)-Scotland and an RCPATH Trustee stated in a recent correspondence *"I would also like to fully endorse this free program of online resource. A huge amount of work has gone into it and it is strongly relevant to those working towards FRCPath as well as a great Continuing Professional Development (CPD) resource for all stages of the profession."*

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Endang Hoyaranda

Endang Hoyaranda from Prodia Labs Indonesia and the Indonesian Association for Clinical Chemistry in Jakarta stated, *"The Learning Lab as a practical educational program is a great way to fill in the gaps of what students, lab technologists, and lab scientists do not get at their academic trainings, to be directly implemented in their daily work."* Dr. Miswar Fattah, MSI is the Head of Research and Specialty Development also at Prodia Clinical Laboratory Indonesia; his labs include Mass Spectrometry and Separation Science, Molecular Laboratory, Cytogenetic Laboratory, Pathological Anatomy Laboratory, Advanced Microbiology Laboratory, and Advanced Immunology Laboratory.



Dr. Miswar Fattah demonstrates the Learning lab to Miftakh Nur Rahman, chief of the Mass Spectrometry Laboratory, and Hani Nurmala

Dr. Fattah stated *"The Learning Lab is very beneficial for us because we have so many specialty laboratories. With these comprehensive courses, we have an advantage in training our new staff members and expanding their expertise. The fact that the Learning Lab contains everything necessary to enhance learning, makes it a very welcomed and beneficial development for us. Because of the provided questions, the Learning Lab makes it simple to determine how far the team's knowledge has progressed, and it also enables us to determine where the trainees' knowledge is lacking"*.

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Dr. Kumar Dabla showing the Learning Lab to his students Drs. Viswas and Shrivastav

Prof. Pradeep Kumar Dabla, a Professor of Biochemistry at the G.B.Pant Institute of Postgraduate Medical Education & Research (GIPMER), Associated Maulana Azad Medical College in Delhi, India stated that *“In today’s COVID era, the restrictions made us learn several lessons. The digital innovation and competencies tools are highly needed for students and faculty members in educational institutions. The Learning Lab has given us that opportunity to learn together with free access for up to 80 courses for medical lab specialists across the field of lab medicine. These courses, prepared by international experts, provide an opportunity to an excellent adaptive learning experience and enable students and trainees to learn through a thoughtful and interactive process. Our students were helped tremendously to have a first-hand experience in learning and understanding of the various concepts of lab medicine through the Learning Lab and this tool was highly appreciated compared to other teaching methods available”.*

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Dr. Bobbi S. Pritt

Prof. Bobbi S. Pritt, a Professor of Laboratory Medicine and Pathology and Interim Chair of the Department of Laboratory Medicine and Pathology at Mayo Clinic in Rochester, MN, USA has indicated that *“The Learning Lab is an innovative and invaluable resource for teaching laboratory medicine. It was put together by subject matter experts around the world, and thoughtfully designed to test key laboratory concepts across the full range of subjects.”*

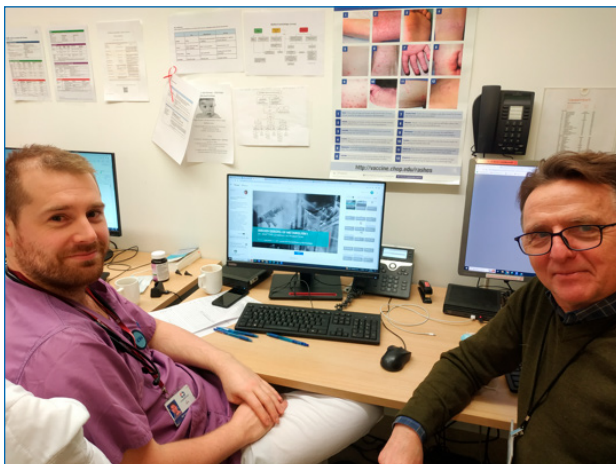
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Drs. Sepiashvili and Logan

Dr. Lusia Sepiashvili, Assistant Professor at the University of Toronto and a Clinical Biochemist at The Hospital for Sick Children, Toronto, ON, Canada shared her experience by saying *“The Learning Lab adaptive learning program provides a unique format for learning since it is an interactive teaching platform learners can use at their own pace to either expand their knowledge or refresh their understanding of specific topics in laboratory medicine. Therefore, I think it is highly complementary to other types of learning like listening to presentations/webinars, reading textbooks or journal articles, and practice-based learning.”* Dr. Sepiashvili’s Clinical Chemistry Post-Doctoral Fellow at the University of Toronto, Dr. Samantha Logan, indicated that *“The Learning lab has been helping me throughout*

*my fellowship to build frameworks for learning new topics. The course on central and peripheral nervous system autoimmunity was particularly helpful because autoimmune testing is an important aspect of our practice as clinical biochemists, but resources to learn the clinical and analytical aspects of this subject are not yet consolidated into textbooks directed at fellows. I also use the Learning Lab to test myself on concepts I have already covered, identify any gaps in my knowledge, and periodically refresh my understanding of core topics."*



Mentor and trainee, Franzson and Stensrud, exploring together the Learning Lab

Leifur Franzson, MScPharm, Specialist in Clinical Biochemistry, Clinical Associate Professor and Lab Director for Newborn Screening in the Department of Genetics and Molecular Medicine at the University of Iceland in Reykjavik indicated *"The Learning Lab is an ingenious, clever and a fun way to learn. I have used it routinely with my trainees in genetic metabolic diseases and clinical chemistry. For example, the statistical courses – and other general courses, are also ideal for students prior to doing their BS, Master or PhD degrees. These courses will be used at the University of Iceland as a teaching aid for medical laboratory scientists and for students in the medical sciences. The courses are prepared by international experts and the program enables learning on the go and at the learner's own pace. I highly recommend this valuable resource."* His trainee at the Children's Hospital of Reykjavik, Dr. Jens Georg Waagsbo Stensrud, added *"I used the Learning Lab in my training in genetic metabolism and found it to be invaluable. It is a great way to learn and reinforce what you already know. Trainees should take advantage of this free program; it is really great."*

These testimonials from different parts of the world attest to the value of the Learning Lab and its role in educating the future generation of laboratory medicine professionals. Both educators and trainees who have not yet taken advantage of this free resource are encouraged to register and examine the program at their leisure. The registration is very simple and takes 1 min to complete (<https://area9lyceum.com/laboratorymedicine/>). Give it a try, it may be just what you need!

## CMBC course invitation: 6-day beginners' course in molecular diagnostics

*by Dr. Verena Haselmann*

*Chair, EMD Committee on Clinical Molecular Biology Curriculum (C-CMBC)*

The IFCC announces the availability of a 6-day Molecular Diagnostics workshop to be presented in your own country by members of the Committee for Clinical Molecular Biology Curriculum (C-CMBC). This course has been successfully conducted several times within the last years, has been adopted to current needs and addresses theoretical, practical and in-silico skills for participants eager to get experience in this highly important and fast-growing diagnostic field.

The dissemination of molecular techniques in laboratory medicine has been a goal of the IFCC for some years. The main course objectives are:

1. to implement basic principles of molecular techniques or improve existing skills in a sustainable way rather than to exercise with prefabricated reagents and consumables,
2. to introduce laboratories to the principles of internal as well as external quality assessments (EQA),
3. to initiate networking amongst the participants of the C-CMBC courses assuming that they will benefit from each other's experiences using molecular genetic testing.
4. to improve the cooperation between the national societies and the IFCC in molecular diagnostic issues.

The workshop programme offers comprehensive training that aims to enable clinical laboratories to design, set up, perform and validate genotyping assays for their own Molecular Diagnostics portfolio. Participants are also introduced to external quality assessment concepts as well as "Ethical, Legal and Social Issues" (ELSI) of molecular genetic testing.

Are you interested in hosting the IFCC C-CMBC course in your country? Visit the [link](#) to know all the details and apply!



## Let's celebrate the Global MedLab Week 2023!



The International Federation of Clinical Chemistry and Laboratory Medicine (IFCC) celebrated the Laboratory Professionals Week on 23-29 April 2023, highlighting the work of the medical laboratory and the significance of the role of medical laboratory professionals in worldwide patient healthcare.

Commitment and contributions of the Professionals Lab Community lead to a lot of interesting and meaningful initiatives that took place around the world.

Social Media to join and support the Global MedLab Week campaign with our main hashtag #globalmedlabweek along with the official network profiles: @gmedlabweek (twitter); @globalmedlabweek (Facebook and Instagram) and <https://globalmedlabweek.org/> increased awareness and helped to shared contents and to achieve greater reach.

Material was posted in English, Spanish and many other languages; events and webinars, podcast and other initiatives enriched the GMLW2023.

A new initiative was launched to create awareness of the fundamental role our profession plays in patient care and public health: the LiveMyLab Project - Global MedLab Week 2023.

For this initiative, videos were received from the United States of America, Spain, Iran, the Philippines, Indonesia, Vietnam, Türkiye, Belgium, Congo, Bolivia, Brasil, France, India, Indonesia, Japan, South Korea, Lavtia, Mexico, Montenegro, Morocco, Pakistan, Paraguay, Philippines, Sri Lanka, Taiwan, Vietnam, Chile, Ecuador, and Palestine.

Many thanks to those who contributed!

[Click here to see all the Videos and contributions](#)



[Click here to see all videos on the IFCC YouTube channel](#)

## IFCC PODCASTS



A new initiative that took full speed on occasion of the Global MedLab Week 2023 are the IFCC Podcasts with the contributions of many IFCC officers, the IFCC President, Prof. Adeli, the IFCC President elect, Prof. Ozben, C-PR members: Prof. Erasmus, Dr. Pasquel Carrera, Mrs. Ravalico, Dr. Schroeder Castagno, and many others.



Scan the code to listen to the IFCC Podcasts

Spotify

[Click here to access the IFCC channel](#)

Many other initiatives took place around the world, take some time, and enjoy the creativity and professionalism of them! Visit: <https://ifcc.org/ifcc-communications-publications-division-cpd/cpd-committees/public-relations-c-pr/happy-laboratory-professionals-week-2023/>.

# MAGLUMI® X Series

Fully-auto Chemiluminescence Immunoassay System



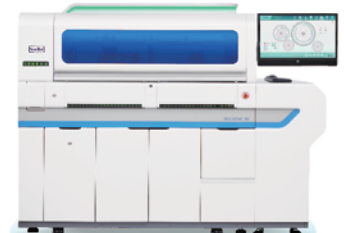
## MAGLUMI® X3

- Throughput: up to 200 T/H
- Sample Positions: 72
- Reagent position: 20



## MAGLUMI® X6

- Throughput: up to 450 T/H
- Sample Positions: 112/412
- Reagent positions: 30



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- Throughput: up to 600 T/H
- Sample Positions: up to 300
- Reagent positions: 42

## Broad CLIA Test Menu with 211 Parameters

### Thyroid

TSH (3rd Generation)  
T4  
T3  
FT4  
FT3  
Tg (Thyroglobulin)  
TGA (Anti-Tg)  
Anti-TPO  
TRAb  
TMA  
Rev T3  
T-Uptake

### Hepatic Fibrosis

HA  
PIIIP N-P  
C IV  
Laminin  
Cholyglycine  
\*GP73

### TORCH

Toxo IgG  
Toxo IgM  
Rubella IgG  
Rubella IgM  
CMV IgG  
CMV IgM  
HSV-1/2 IgG  
HSV-1/2 IgM  
HSV-1 IgG  
HSV-2 IgG  
\*HSV-2 IgM  
\*HSV-1 IgM  
\*Toxo IgG Avidity  
\*CMV IgG Avidity

### Kidney Function

β<sub>2</sub>-MG  
Albumin  
\*NGAL

### STAT-X™

\*hs-cTnl  
\*NT-proBNP  
\*Myoglobin  
\*D-dimer  
\*PCT  
\*CRP

\* Available soon

### Fertility

FSH  
LH  
HCG/β-HCG  
PRL (Prolactin)  
Estradiol  
Testosterone  
free Testosterone  
DHEA-S  
Progesterone  
free Estrilol  
17-OH Progesterone  
AMH  
SHBG  
Androstenedione  
PIGF  
sFlt-1

### Autoimmune

Anti-CCP  
Anti-dsDNA IgG  
ANA Screen  
ENA Screen  
Anti-Sm IgG  
Anti-Rib-P IgG  
Anti-Scl-70 IgG  
Anti-Centromeres IgG  
Anti-Jo-1 IgG  
Anti-M2-3E IgG  
Anti-Histones IgG  
Anti-nRNP/Sm IgG  
Anti-SS-B IgG  
Anti-SS-A IgG  
TGA (Anti-Tg)  
Anti-TPO  
TRAb  
TMA  
ICA  
IAA (Anti Insulin)  
GAD 65  
Anti-IA2  
\*ZnT8  
Anti-MPO IgG  
\*Anti-PR3 IgG  
\*Anti-GBM IgG  
\*Anti-Cardiolipin IgG  
\*Anti-Cardiolipin IgM  
\*Anti-Cardiolipin IgA  
\*Anti-Cardiolipin screen  
\*β2-Glycoprotein I IgG  
\*β2-Glycoprotein I IgM  
\*β2-Glycoprotein I IgA  
\*β2-Glycoprotein I screen  
\*Anti-ITG IgA  
\*Anti-ITG IgG  
\*DGP IgA  
\*DGP IgG

### Tumor Markers

AFP  
CEA  
Total PSA  
f-PSA  
CA 125  
CA 15-3  
CA 19-9  
PAP  
CA 50  
CYFRA 21-1  
CA 242  
CA 72-4  
NSE  
S-100  
SCCA  
TPA-snibe  
ProGRP  
HE4  
HER-2  
PIVKA-II

### Infectious Disease

HBsAg  
Anti-HBs  
HBeAg  
Anti-HBe  
Anti-HBc  
Anti-HBc IgM  
Anti-HCV  
Syphilis  
Anti-HAV  
HAV IgM  
\*HEV IgG  
\*HEV IgM  
HIV Ab/Ag Combi  
Chagas  
HTLV I+II  
H.pylori IgG  
H.pylori IgA  
H.pylori IgM  
2019-nCoV IgG  
2019-nCoV IgM  
SARS-CoV-2 S-RBD IgG  
SARS-CoV-2 Neutralizing Antibody  
SARS-CoV-2 Ag  
Monkeypox Virus Ag  
Dengue Virus IgG  
Dengue Virus NS1  
\*Dengue Virus IgM  
\*Chlamydia Pneumoniae IgG  
\*Chlamydia Pneumoniae IgM  
\*Mycoplasma Pneumoniae IgG  
\*Mycoplasma Pneumoniae IgM

### Cardiac

CK-MB  
Troponin I  
Myoglobin  
hs-cTnl  
hs-CRP  
H-FABP  
NT-proBNP  
BNP  
D-Dimer  
Lp-PLA2  
MPO  
\*HCY  
\*hs-cTnl (STAT)  
\*NT-proBNP (STAT)  
\*Myoglobin (STAT)  
\*D-dimer (STAT)

### Hypertension

Direct Renin  
Aldosterone  
Angiotensin I  
Angiotensin II  
Cortisol  
ACTH

### Coagulation Markers

D-Dimer  
\*TAT  
\*TM  
\*PIC  
\*tPAIC

### Metabolism

Pepsinogen I  
Pepsinogen II  
Gastrin-17  
GH (hGH)  
IGF-I  
IGFBP-3

### Prenatal Screening

AFP (Prenatal Screening)  
free β-HCG  
PAPP-A  
free Estriol

### Anemia

Vitamin B12  
Ferritin  
Folate (FA)  
EPO  
RBC Folate

### Inflammation Monitoring

CRP  
PCT (Procalcitonin)  
IL-6 (Interleukin 6)  
SAA (Serum Amyloid A)  
\*PCT (STAT)  
\*CRP (STAT)  
\*TNF-α

### Bone Metabolism

Calcitonin  
Osteocalcin  
25-OH Vitamin D  
Intact PTH  
β-CTx  
total P1NP

### EBV

EBV EA IgG  
EBV EA IgA  
EBV VCA IgG  
EBV VCA IgM  
EBV VCA IgA  
EBV NA IgG  
EBV NA IgA

### Immunoglobulins

IgM  
IgA  
IgE  
IgG

### Glyco Metabolism

C-Peptide  
Insulin  
GAD 65  
Anti-IA2  
ICA  
IAA (Anti Insulin)  
Proinsulin  
\*Glucagon  
\*ZnT8

### Veterinary Testing

\*cTSH  
\*cTT4  
\*vFT4

### Drug Monitoring

Digoxin  
CSA (Cyclosporine A)  
FK 506 (Tacrolimus)



## IFCC: THE YOUNG SCIENTISTS

### IFCC PSEP program report – Ferdy Royland Marpaung

*by Ferdy Royland Marpaung  
Surabaya, Indonesia*

***Ferdy Royland Marpaung, MD, Clinical Pathologist**  
Head of Clinical Chemistry Division, Department of Clinical Pathology,  
Dr Soetomo Hospital/Universitas Airlangga, Surabaya, Indonesia*

***Mentor: Prof Etienne Cavalier PhD, EuSpLM**  
**Hosting laboratory: Department of Clinical Chemistry, CHU de Liege, Belgium**  
**Duration: February - April 2023***

I am very grateful for the extraordinary opportunity and trust to become an IFCC Professional Scientific Exchange Program (IFCC PSEP) awardee. For two months (16 February – 16 April 2023), undergoing the IFCC PSEP Program at the Department of Clinical Chemistry at the CHU de Liege, Belgium, led by Prof. Etienne Cavalier, EuSpLM, is something I can never forget. Prof. Etienne Cavalier and the staff (Aurelie Ladang, Romy Gadisseur, Caroline Le Goff, Laurence Luterri, Francoise Luyckx, and others), who are very kind, compassionate, pleasant, and willing to help, taught me how to attain the goals I hope for.



Ferdy Royland Marpaung with Prof. Etienne Cavalier at Department of Clinical Chemistry, CHU de Liege, Belgium

*Article continued on next page*



Ferdy Royland Marpaung with Prof. Etienne Cavalier and Romy Gadisseur  
at Department of Clinical Chemistry, CHU de Liege, Belgium

During the 2 months I was there, I learned pre-analytics (validation of equipment and methods), analytical processes and validation of endocrine examination results, bone markers, and especially iohexol examinations. The examinations I studied used the cutting edge technology, such as LC-MS and GC-MS, which became the reference method for various examinations in the field of endocrinology. In fact, I directly carried out iohexol examinations and analysed the results in various cases with Prof. Etienne Cavalier. All of these were new for me, making me full of excitement and enthusiasm. Of course, I would not enjoy my work so much without the atmosphere in the laboratory, which was really fun and warm with the friends I had just met. So even though I am far from my family in Indonesia, I feel like I am at home.

Another important thing is that, as a bonus, I could even learn not only endocrinology tests but also tests from other fields that are very useful for me to share with my colleagues in Indonesia. These included the areas of autoimmune disease, lithiasis, allergy, newborn screening, oncology, microbiology, maternity labs, toxicology, and studying in satellite hospitals on laboratory management.

The full support from Prof. Etienne Cavalier will not end after the fellowship program in Liege, Belgium; we plan to continue the collaboration to carry out research on performing GFR examinations in the Indonesian population. This is very challenging for me, and I am sure it will help me to work on it as part of my PhD study in Indonesia. Apart from that, sharing his knowledge through scientific symposium activities in the future in Indonesia is something, I hope, that can be implemented soon.

Overall, I hope that this activity will continue to be a priority for IFCC, because personally, coming from a developing country, it has really helped me change my perspective on laboratory medicine in general and, in particular, broaden my insight, skills, and knowledge in the field of endocrinology.

Once again, I would like to thank the IFCC for this excellent program and, of course for the financial support, and Prof. Etienne Cavalier for helping me develop my professionalism and knowledge in the field of laboratory medicine. Lastly, my thanks go to the chairman of the IACC (Dr. Tjan Sian Hwa, SpPK), the Head of the Clinical Pathology department of Dr. Soetomo Hospital/Universitas Airlangga (Dr. Yetti Hernaningsih, dr., SpPK(K)), the director of Dr. Soetomo Hospital (Dr. Joni Wahyuhadi, SpBS(K), MARS), and my PhD promoter (Prof. Dr. Aryati, dr., SpPK(K)), who gave permission and full support so that I could follow the IFCC PSEP Program.



Ferdy Royland Marpaung and staff of stress oxidant lab, Department of Clinical Chemistry, CHU de Liege Belgium



Ferdy Royland Marpaung and staff of endocrine lab, Department of Clinical Chemistry, CHU de Liege Belgium

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### Global recognition awaits – start preparing today!

The clinical laboratory is an asset within healthcare as a strategic collaborator with stakeholders such as clinicians, patients, IT, nursing and more. Strategic partnerships and collaborations vary depending on the laboratory, the patient population, strategic goals of an organization, and clinical needs, with laboratory insights enabling measurable change across healthcare.

Amplifying and celebrating the crucial role of laboratory medicine is essential in order to enable replication of best practices and elevate the visibility of laboratory medicine.



Now in its 5th year, the UNIVANTS of Healthcare Excellence award program aims to do just that; celebrate and amplify best practices in healthcare that are powered by laboratory medicine. Applications are submitted online and scored by 7 prestigious partner organizations: IFCC, AACC, Modern Healthcare, National Association for Healthcare Quality (NAHQ), European Health Management Association (EHMA), Institute of Health Economics (IHE), Healthcare Information and Management Systems Society (HIMSS). To be eligible for recognition, submitted application must meet the below eligibility criteria:

1. The clinical care initiative must be implemented into clinical practice.
2. The metrics must fall under a singular clinical care effort.
3. The clinical care initiative must include at least three disciplines (including Laboratory Medicine/ Pathology).
4. There must be at least one measurable impact or Key Performance Indicator (KPI) associated with each of the four stakeholders: patients, clinicians, health systems/administration, and payors.
5. Impact can be assessed quantitatively (preferred) or qualitatively, but there must be at least two quantitative metrics and no more than four qualitative metrics.

If you and/or your integrated clinical care team want to learn more and/or apply for this prestigious global recognition, now is the time to start! Start thinking through your abstract and start summarizing and collecting metrics/KPIs. And visit the [UNIVANTS website](#) for best practice examples and [guidance documents and checklists](#) to maximize your application and chances of top recognition.

Applications will be accepted starting August 2023.

Additionally, stay tuned for the Global Announcement of the UNIVANTS of Healthcare Excellence award program 2022 winners in June 2023!

UNIFY for Something Greater!



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## NEWS FROM REGIONAL FEDERATIONS AND MEMBER SOCIETIES

### SEQC<sup>ML</sup>: the clinical laboratory, key in the diagnosis of hereditary cancer and the search for biomarkers in neurodegenerative diseases

*by Mercè Ibarz Escuer  
SEQC<sup>ML</sup> - IFCC National Representative  
Hospital Universitari Arnau de Vilanova, Lleida, Spain*

The XX Conference of the Scientific Committee of the Spanish Society of Laboratory Medicine (SEQC<sup>ML</sup>) was held in person from March 30 to 31, 2023.

The Clinical Laboratory, key in the diagnosis of hereditary cancer and the search for biomarkers in neurodegenerative diseases:

- Laboratory experts perform the necessary molecular analyses to detect and interpret the clinical significance of genetic variants that may imply a predisposition to develop cancer.
- The SEQCML highlighted the role of the specialty when it comes to developing diagnostic algorithms that combine already established tests with new ones that are being validated and gradually introducing biomarkers into neurological clinical practice.
- The importance of flow cytometry in the diagnosis and monitoring of immunological diseases was highlighted, as well as the relevance of biomarkers in the early diagnosis of neurodegenerative diseases.

The Clinical Laboratory specialist plays a crucial role both in the search for new biomarkers for neurodegenerative diseases and in the diagnosis of hereditary cancer. These experts are capable of developing diagnostic algorithms that combine already established tests with new ones that are being validated, so that it is possible to gradually introduce these biomarkers into neurological clinical practice. In turn, in the laboratory the necessary molecular analyses are being carried out to detect and interpret the clinical significance of genetic variants that may imply a predisposition to develop an oncological disease.

Within the framework of the **XX Conference of the Scientific Committee of the Spanish Society of Laboratory Medicine (SEQC<sup>ML</sup>)**, which were held in person from March 30 to 31, relative novelties in both fields were presented in the courses “New biomarkers for the diagnosis of neurodegenerative diseases” and “Update on the genetic diagnosis of hereditary cancer”.

A biomarker or biological marker is an analyte that can be objectively measured and evaluated as an indicator of a normal or pathological biological process. Biomarkers are sometimes used to assess the response to a certain treatment for a disease. The use of biomarkers is especially relevant for the early diagnosis of neurodegenerative diseases and thus the ability to treat the patient as quickly as possible.

According to Dr. Alejandro Gella Concustell, coordinator of the course “New biomarkers for the diagnosis of neurodegenerative diseases” and president of the Commission on Neurochemistry and Neurological Diseases of the SEQCML, through basic research a great variety of potential biomarkers for different neurodegenerative diseases are being proposed. In this context, according to Dr. Gella Concustell, the Clinical Laboratory specialist is the one

*Article continued on next page*

who should “validate these results in larger cohorts, define reference ranges and cut-off points, standardize the preanalytical steps, and finally reconcile the validated methods” .

In the words of Dr. Gella Concustell, biomarkers for the diagnosis of neurodegenerative diseases are a booming field of research. According to him, there are currently basic biomarkers of neurodegenerative pathology (amyloid, tau and  $\alpha$ -synuclein), disease intensity (light chains of neurofilaments), and synaptic function (neurogranin). “An example would be the biomarkers of Alzheimer’s disease (amyloid and tau). These present sufficient sensitivity and specificity not only for the diagnosis of this disease in any of its stages but also for differentiating other types of dementia. Their presence in clinical neurology practice is becoming more and more established and more laboratories carry out these measurements”, he explained.

In addition, the course also addressed the diagnostic utility of determining the levels of free mitochondrial DNA (mtDNA) in cerebrospinal fluid. “Recent studies present mtDNA as a potential biomarker in the detection of neurodegeneration at an early stage,” noted Dr. Gella Concustell. Likewise, the suitability of using flow cytometry as a diagnostic tool for monitoring diseases mediated by the immune response, such as multiple sclerosis, was discussed.

### **Genetic diagnosis of hereditary cancer**

The Clinical Laboratory also plays a fundamental role in the diagnosis of hereditary cancer. The necessary molecular analyses are carried out to detect and interpret the clinical significance of genetic variants that may imply a predisposition to develop cancer.

The study and genetic diagnosis of hereditary cancer is a complex process, where it is essential to know which genes are affected, how these genetic variants are inherited, what the clinical characteristics are that may indicate a certain predisposition to suffer from hereditary cancer, and how to carry out the proper tests in the laboratory to correctly identify and interpret these alterations.

In this way, and in the words of Dr. Orland Díez Gibert, one of the coordinators of the course “Update on the genetic diagnosis of hereditary cancer” and member of the SEQC<sup>ML</sup> Genetics Commission, “the amount of knowledge in this field has increased with extraordinary rapidity in recent years, both in the technical advances of molecular analysis and in clinical aspects, which is why it is interesting and necessary to continue reviewing the subject”.

In fact, the course of the XX Conference of the Scientific Committee of the SEQC<sup>ML</sup> was intended to review and update this knowledge, “describing the characteristics of different family cancer syndromes, in adults and in childhood, as well as the process of identification and classification of the causative genetic variants and subsequent genetic counselling. Finally, it is worth noting the importance of molecular results in the selection and application of various therapeutic options, developed within the framework of precision oncology,” he indicated.

Laboratory tests for hereditary cancer should be performed only in patients suspected of having an increased risk of cancer due to personal characteristics or family history. In addition, as Dr. Díez Gibert has pointed out, it is also essential “to take into account the ethical, psychological, legal, and social aspects involved in carrying out these tests and in the genetic counseling that is provided to patients and their families, who must provide informed consent in all cases”.

Finally, Dr. Díez Gibert remarked that the genetic diagnosis of hereditary cancer is an area in constant evolution, both in the laboratory and in the clinic, since the genes involved or the causative alterations are unknown in most of the patients and families analyzed. Thus, “it is an area of intense research, in which both Clinical Laboratory professionals and the different medical specialties involved participate,” he concluded.

# SEQC<sup>ML</sup>

Sociedad Española de Medicina de Laboratorio

For more information: [www.seqc.es](http://www.seqc.es).



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## News from the Japan Society of Clinical Chemistry (JSCC): the 2022 JSCC Article Award

*by Hideo Sakamoto, PhD  
International Exchange Committee of JSCC*

The Japan Society of Clinical Chemistry (JSCC) Article Award is given to a person who had made outstanding academic research in clinical chemistry. In 2022, Ryosuke Kikuchi, Ph.D. was the winner of the Article Award. At the 62nd Annual Meeting of JSCC in Toyama, Japan from September 30 to October 2, 2022 award winner Dr. Kikuchi, was congratulated by Dr. Takashi Miida, president of JSCC for his outstanding work in clinical chemistry.



Dr. Ryosuke Kikuchi

In this issue, we would like to introduce the winner of the Article Award to distribute her outstanding work.

Ryosuke Kikuchi, PhD (Chief of Biomedical Laboratory Scientist, Division of Clinical Laboratory, Gifu University Hospital) is the winner of the 2022 JSCC Article Award, entitled “Vascular endothelial growth factor (VEGF)-A and VEGF-A165b are associated with time to remission of granulomatosis with polyangiitis in a nationwide Japanese prospective cohort study”.

Dr. Kikuchi has been interested in the discrepancy between laboratory test values and pathological conditions and has been developing his research activities. In this process, he has focused on vascular endothelial growth factor-A (VEGF-A) and has been researching its application to clinical laboratory medicine.

This award-winning paper describes the relationship between VEGF-A and Anti-Neutrophil Cytoplasmic Antibody (ANCA)-associated vasculitis, which is recognized as a designated intractable disease. This study was conducted as a multicenter study of patients enrolled in the “Remission Induction Therapy in Japanese patients with ANCA-associated Vasculitis (UMIN000001648)”.

Dr. Kikuchi will continue to conduct research that can be applied to clinical practice from a biomedical laboratory scientist’s perspective in the spirit of the precision of clinical chemistry.





## Global Medical Laboratory Professionals Week celebration at an academic medical centre in Pakistan

*by Dr. Sibtain Ahmed*

*Assistant Professor, Clinical Chemistry, AKUH*

*Dr. Imran Siddiqui*

*Professor, Clinical Chemistry, AKUH*

The Department of Pathology & Laboratory Medicine at Aga Khan University Hospital Karachi, Pakistan celebrated “Global Medical Laboratory Professionals Week” in line with a yearlong commemoration of the University’s 40th anniversary. A select group of senior faculty members, technical & administrative staff members of the department, led by Prof. Imran Siddiqui, oversaw, and organized the event.

The department celebrated the occasion by dedicating five working days of the week to each section (Chemical Pathology, Haematology & Transfusion medicine, Histopathology, Microbiology, & Molecular pathology). To begin the proceedings, each day, a pictorial flyer (via email) was circulated institution wide, highlighting the accomplishments of the most senior technical staff member of the respective section; the content had their picture with a summary of their invaluable contributions over the years for the department & thanked them for their loyalty to the institution.

Following the email, at midday, an informal get together of all the professional staff was arranged, featuring a cake cutting ceremony by the highlighted staff member, with maximum participation of laboratory staff, faculty members and senior institutional leadership; notably Prof. Erum Khan (Chairperson, Department of Pathology and Laboratory Medicine), Prof. Fazal Hameed Khan (Associate Dean Faculty), Prof. Mohammad Tariq (Vice Dean), Ms. Shagufta Hasan (VP Finance & CFO) and Mr. Sohail Baloch (Director Clinical Laboratory).

These Lab professionals are the unsung heroes of any healthcare system and their role often goes unnoticed, as they work behind the scenes. Through events like these, we tried to recognize their hard work, loyalty and dedication while reiterating the importance of their vital role in patient care.

Event highlights were shared on the department webpage (<https://www.aku.edu/mcpk/pathology/Pages/home.aspx>) and Twitter handle (@AKU\_PathCom).

### Chemical Pathology



### Microbiology



### Histopathology

### Molecular Pathology





### Haematology and Transfusion Medicine

# IFCC'S CALENDAR OF CONGRESSES, CONFERENCES & EVENTS

## IFCC and Regional Federation events

2023-05-20 2023-05-21	IFCC	<i>Point-of-Care Testing: Home, Hospital and Beyond - Satellite Meeting</i>	Rome, IT
2023-05-20		<i>XVI ICPLM - International Congress of Pediatric Laboratory Medicine - Satellite Meeting</i>	Rome, IT
2023-05-20 2023-05-21	IFCC	<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>	Rome, IT
2023-05-21		<i>IFCC FORUM for Young Scientists</i>	Rome, IT
2023-05-21 2023-05-25		<i>XXV IFCC - EFLM WorldLab EuroMedLab - Rome 2023</i>	Rome, IT
2024-05-26 2024-05-30		<i>XXVI IFCC WORLDLAB - Dubai 2024</i>	Dubai, UAE

Calendar continued on next page

2024-08-28 2024-08-31		XXVI COLABIOCLI 2024	Cartagena, CO
2024-10-31 2024-11-03		APFCB 2024 Sydney	Sidney, AU
2025-05-18 2025-05-22	IFCC - EFLM	XXVI IFCC-EFLM EUROMEDLAB 2025	Brussels, BE

### Corporate Member events with IFCC auspices

2023-01-01 2023-07-31	Inter-QC Topics	Quality Academics, online, MX
2023-06-01	<i>The 4 secrets of analytical quality</i>	Quality Academics, online, MX
2023-06-08	<i>International Conference on Immunoassay</i>	Snibe, Rihad, SA
2023-06-16	<i>International Conference on Immunoassay</i>	Snibe, Paris, FR
2023-06-24	<i>International Conference on Immunoassay</i>	Snibe, Manila, PH
2023-07-01	<i>Verification of analytical methods</i>	Quality Academics, online, MX
2023-08-01	<i>Measurement uncertainty</i>	Quality Academics, online, MX

2023-08-07	<i>International Conference on Immunoassay</i>	Snibe, Dubai, UAE
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### Other events with IFCC auspices

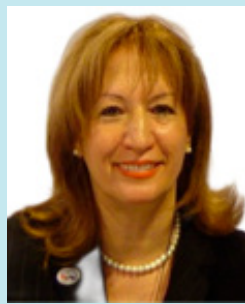
2023-06-12 2023-06-14	<i>UKLabMed23</i>	Leeds, GB
2023-06-14 2023-06-16	<i>The 14th National Conference of the Association of Laboratory Medicine from Romania with international participation</i>	Timișoara, RO
2023-08-24 2023-08-26	<i>The 12th International Palestinian Conference of Laboratory Medicine (IPCLM12)</i>	Ramallah, PS
2023-09-20 2023-09-23	<i>6th ACTC (Advances in Circulating Tumor Cells) meeting “Liquid Biopsy and Precision Oncology: where do we stand now”</i>	Skiathos, GR
2023-09-27 2023-09-30	<i>XXX Meeting of the Balkan Clinical Laboratory Federation and II Montenegrin Conference of Clinical Chemistry and Laboratory Medicine</i>	Herceg Novi, Boka Bay, ME
2023-10-12 2023-10-13	<i>5th Symposium – Cutting Edge of Laboratory Medicine in Europe – CELME 2023</i>	Prague, CZ
2023-10-12 2023-10-14	<i>21st Hellenic Congress of Clinical Chemistry</i>	GR
2023-10-25 2023-10-27	<i>7th ESPT Congress</i>	Copenhagen, DK
2023-11-01 2023-11-04	<i>LIII Mexican National Congress of Clinical Pathology</i>	Aguascalientes, MX
2024-05-21 2024-05-24	<i>The 10+1 Santorini Conference “Systems medicine and personalised health &amp; therapy”-“The odyssey from hope to practice: Patient first -Keeps Ithaca always in your mind”</i>	Santorini, GR
2024-06-13 2024-06-14	<i>9th International Symposium on Critical Care Testing and Blood Gases</i>	Saint-Malo, FR



# IFCC Executive Board 2023



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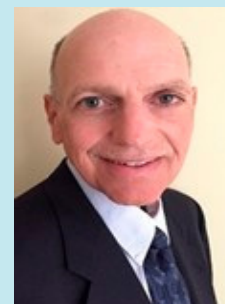
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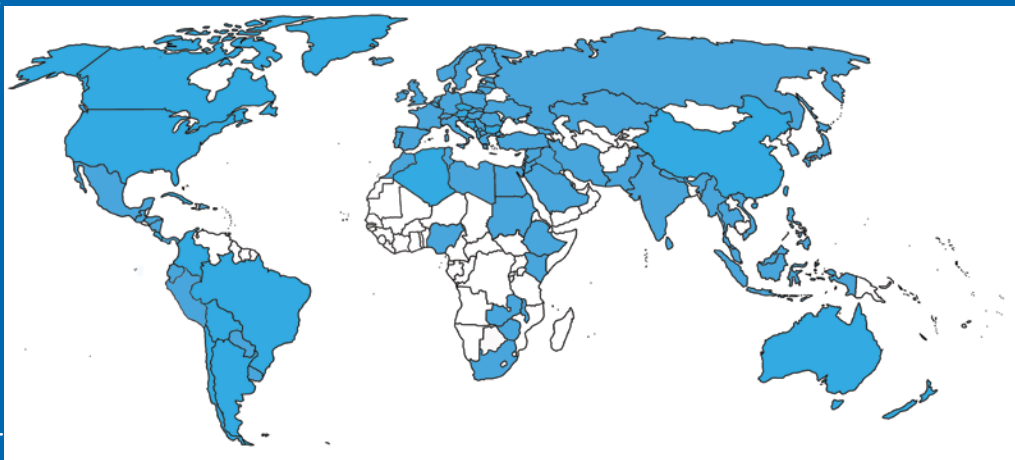
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