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# eNews

International Federation of Clinical Chemistry  
and Laboratory Medicine



Communications and Publications Division (CPD) of the IFCC

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# The voice of IFCC

## IFCC and Congress President's Welcome Message

July 2024

By Tomris Ozben

### Dear Colleagues and Friends,

I hope this message finds you well. I'm pleased to share some key updates from the IFCC, as our activities continue to thrive even during the summer months.

Firstly, I want to emphasize our ongoing commitment to supporting young scientists through specific programmes and initiatives. Through the IFCC Task Force we are offering workshops, mentorship programs, and collaborative research opportunities (PEP) for young scientists to learn, grow, and contribute to the scientific community.

National society meetings continue to be a cornerstone for laboratory professionals, providing essential platforms for knowledge exchange and professional growth. I encourage you to actively engage in these meetings.

Our webinars continue to be a great success. Recently, we had an insightful, and very well-attended session on Different Approaches to Bioethics, addressing the issues related to the use of data through AI, and I'm pleased to announce that our next webinar will focus on Minimum quality specifications based on the state of the art, is scheduled for September. The contribution of respected and authoritative speakers helps keep the IFCC community at the forefront of clinical chemistry and laboratory medicine.

Additionally, I want to draw your attention to the call for studies by the Task Force on Outcome Studies in Laboratory Medicine (TF-OSLM). This is a great opportunity to contribute to impactful research and advancements in our field. Don't miss the opportunity to submit your proposal – see all details in the following pages.

I'm also delighted to see an increasing number of corporate members participating in the IFCC activities and showing interest in EuroMedLab Brussels. Their participation underscores the growing collaboration between the IFCC and industry, which is crucial for our collective progress.

Lastly, I'm excited to announce that we will be organizing a General Conference—the usual IFCC family meeting. This will be a wonderful occasion for us to come together, share our experiences, and envision the future course of our federation.

As we move through the summer, I invite all members and partners to stay engaged and participate in these exciting initiatives. Thank you for your continued dedication and contributions to the IFCC community.

With my best regards  
Prof. Dr Tomris Ozben  
IFCC President



Prof. Tomris Ozben  
EuSpLM, Ph.D.

# IFCC Professional Scientific Exchange Programme

## My experience at the Institute of Metabolic Science - Metabolic Research Laboratories, University of Cambridge, United Kingdom

By **Dr Ifeyinwa Nnakenyi** MBBS, MSc, FMCPATH, FWACP, Senior Lecturer and Honorary Consultant Chemical Pathologist, University of Nigeria Nsukka & University of Nigeria Teaching Hospital, Enugu state, Nigeria

I spent an exciting two months at the Institute of Metabolic Science - Metabolic Research Laboratories, of the prestigious University of Cambridge, United Kingdom for the IFCC Professional Scientific Exchange Programme.

It was an ideal center equipped with state-of-the-art facilities to enable me experience advanced research techniques and skills involved in the length and breadth of metabolic research. There were top-notch facilities for cell culture, pathology, genetic studies, mouse models, human studies, and much more. I was exposed to high-level laboratory techniques such as advanced immunoassays like the Mesoscale Discovery Multiplex, and the 'omics' (lipidomics, metabolomics, proteomics, peptidomics, genomics, transcriptomics), and developed skills in preparing and validating blank ELISA plates using commercial antibodies. This skill amongst others enabled the successful conduction of my research work where I analyzed certain obesity biomarkers in blood samples of Nigerian breast cancer females at the Core Biochemical Assay Laboratory.

I observed data and sample collection for several research activities like Fibroscan for fatty liver, DEXA Scan for body fat and lean mass percentages, adipose tissue biopsies for RNA analysis, euglycemic insulin clamp test, and oral glucose tolerance test. As well as observed current patient management of obesity and metabolic diseases at Addenbrooke's hospital of the Cambridge University Hospital Trust.

I participated in several seminars which boosted my research ideas, and attended multi-disciplinary research meetings to hone communication skills with collaborators. I met and interacted with several renowned Principal Investigators from within and outside the institute, including reputable names in the field of obesity genetics and severe insulin resistance like Professor Giles Yeo and Professor Sadaf Farooqi.

I thoroughly appreciate my gracious host - Professor Sir Stephen O'Rahilly, Head of the Department of Clinical Biochemistry and Director of the Medical Research Council -Metabolic Research Diseases Unit, who is renowned for his research into the molecular pathogenesis of human obesity and insulin resistance. He granted me access to all required facilities and personnel making my visit very fulfilling. He was instrumental in making me an Associate Scholar of Pembroke college where I resided, which was proximal to the sights and sounds of Cambridge city. During my stay, I enjoyed fine dining at the formal dinners, going to the opera and punting for the first time. I made some good friends with whom I shared happy memories.

It was indeed a wonderful time and I am eternally grateful to the IFCC Professional Scientific Exchange Program for this opportunity that broadened my horizon on so many levels.

*IFCC PSEP: My experience at the Institute of Metabolic Science, Cambridge, UK*



*With my host- Professor Sir Stephen O'Rahilly – Consultant Endocrinologist Head of Department of Clinical Biochemistry, University of Cambridge, UK*



*Conducting my research work in the laboratory*



*With members of staff of the Core Biochemistry Assay Laboratory*

## IFCC – PSEP

### My experience at Protein Immunology Lab (PIL), Department of Laboratory Medicine and Pathology (DLMP), Mayo Clinic, Rochester, USA.

By **Dr. Avinash R. Pagdhune** Assistant Professor, Biochemistry, Advanced Centre for Treatment, Research and Education in Cancer, (ACTREC), Tata Memorial Centre, Kharghar, Navi Mumbai, India.



I got the excellent opportunity to visit Protein Immunology Lab (PIL), At Mayo Clinic Rochester, MN, USA as Visiting laboratory professional, from 6th Feb to 11th April, 2024. I was hosted by Dr. David Murray, M.D, Ph.D. Consultant and Co- Director, PIL, Department of Laboratory Medicine and Pathology (DLMP), Mayo Clinic, Rochester.

Primary aim of visit was to learn and experience the Mass spectrometry based immunoglobulins light chain assay (MASS FIX), standardization, analysis, interpretation and troubleshooting.

Following Learning objective were completed

- Bench shadowing of MALDI TOF analysis for immunoglobulins. (MASS FIX)
- Identify finding and prevalence of monoclonal antibody therapies identified by different mass spec methods.
- Discussions on Therapeutic monoclonal drugs, Consultants sign outs.

During my visit at PIL, small project work done.

Title: Characterization of MASS FIX Clonal Peaks.

Aim was evaluating analytical CV (Precision) of m/z ratios for immunoglobulins and its isoforms.

Objectives:

- To assess and analyze the m/z ratios for Immunoglobulins and its isoforms in samples from patients with Plasma Cell Dyscrasias.
- To test Suitability of m/z ratio for Measurable residual disease (MRD). Study reveals,
  - Precision of m/z over the period on repeated testing, based on the CVs.
- Not primitive to say, MASS FIX is very less invasive (noninvasive) test for Sustainable Measurable Residual Disease (MRD) monitoring which can be considered for Plasma Cell Discrasia (PCD) patients.
- MASS FIX: It's a package test which not only gives information of Ig & its Isoforms, quantification of 'M' protein, integrated nephelometric measurements of Ig G, A, M for diagnosis of gammopathies but also provides very useful information on the current Status of disease as well as monitoring of disease, drugs (TmAbs), Immune response and glycosylation.
- It will help to understand the dynamics of monoclonal gamopathies.

Shared the finding with the laboratory technologist audience. Bench shadowing of other technologies in protein immunology lab like cryoprecipitate, LCMS validation process, Complements testing was also done.

Impact of the project:

Dissemination of knowledge, development of efficient human resources for MASS FIX

1. Will get trained personnel for high end technologies at the institute.
2. Can provide wider and accurate test menu for myeloma testing.
3. Overall robust and precise testing facilities at apex cancer care centre in India.

In the laboratory, I have received insight to detailing of the MASS FIX test and its development process since last decade. I also got privileged to attend the lab leadership meetings where I have learnt how laboratory works for its smoother functioning and best of its for patient care services. I loved the way of technician's work patterns and their dedication for the test, the real heroes in the labs which remains unsung many times but I have learnt many things from them at Mayo clinic laboratories and I appreciate their efforts to make me understand the technique.

Evidences like publications and scientific data shows, the MASS FIX technique is very specific and sensitive too for diagnosis of Monoclonal gammopathies. Protein Immunology lab is very systematic and meticulously works for the various tests in spite of very heavy work load.

I would like to express my sincere gratitude to Dr. David Murray, M.D, Ph.D. Consultant and Co-Director, PIL, Department of Laboratory Medicine and Pathology (DLMP), Mayo Clinic for giving me the golden opportunity to learn MASS FIX technique i.e. "Joy of MASS FIX" and the hospitality provided by him and his team. Dr. Murray is very passionate about his work and the listening to him was amazing experience for me.

I considered very fortunate to have the opportunity to visit such a great institute with the support from IFCC PSEP. I am heartfelt thankful & grateful to IFCC for making my visit in memorable experience & fruitful. This visit will for sure make difference in my future path.

Exchange programme definitely benefit both the institutes for Academics, Skill development, escalate Laboratory Services, Networking & collaborative studies in the future.

For me the experience it's just "Awesome".

I want to Acknowledge, for recommending me for the visit.

AMBI-ASSOCIATION OF MEDICAL BIOCHEMIST OF INDIA.

Dr. Navin Khattry, Deputy Director, Clinical Research Centre, ACTREC, TMC, Navi Mumbai.

Dr. Preeti Chavan, OIC, Composite Lab, ACTREC, TMC, Navi Mumbai.

This journey wouldn't have been possible and successful without their support.



*IFCC –PSEP My experience at Protein Immunology Lab (PIL), Department of Laboratory Medicine and Pathology (DLMP), Mayo Clinic, Rochester, USA.*



*Group photo with Avinash R. Pagdhune (left), IFCC PSEP participant and Dr. David Murray (center) and colleagues*



*Avinash R. Pagdhune (left), and Dr. David Murray*

## IFCC – PSEP

### My experience at San Giovanni di Dio Hospital, in Florence, Italy

By **Dr Emilda Belortaja** Healthcare Center of Vore, Vore/Tirana, Albania

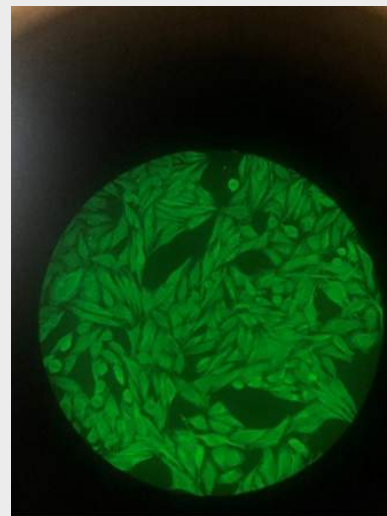
Immunofluorescence microscopy is more than just a scientific technique—it is a lifelong romance, a passion that has fuelled my curiosity, has driven my ambition, and has inspired my pursuit of knowledge since the first time I was introduced with it. It was a dream come true, the opportunity given to me by IFCC to practice it in San Giovanni di Dio Hospital, in Florence. I will always be grateful to IFCC for this great opportunity. The heart of my internship lay in the laboratory, where I immersed myself in the art and science of immunofluorescence assays. Immunofluorescence, with its ability to visualize proteins within the cellular landscape, offered a captivating glimpse into the dynamic interactions that govern cellular function. As the fluorescence microscope came to life, I witnessed the magic unfold before my eyes. With each click of the shutter, a symphony of colours emerged, painting a vivid portrait of protein distribution and cellular organization. From the nucleus to the cytoplasm, from the cell membrane to the intricate network of organelles, immunofluorescence microscopy revealed the hidden architecture of the cell in exquisite detail. As I journey forward, I embrace the thrill of discovery, the joy of exploration, and the enduring romance of scientific inquiry, fuelled by my unwavering love for immunofluorescence.

Top of Form

As I reflect on my time in the laboratory of immunology at San Giovanni di Dio Hospital, the warmth and kindness of the staff, especially the head of laboratory doctor Mariangela Manfredi and doctor Maria Infantino and biologist Valentina Grossi left a lasting impression on my heart and mind. Their unwavering support, genuine camaraderie, and acts of kindness have not only enriched my internship experience but have also shaped my outlook on teamwork, collaboration, and human connection. As I reflect on my internship experience in Florence, I am filled with gratitude for the lessons learned, the relationships forged, and the memories cherished. From navigating unfamiliar streets to embracing new culinary delights, each moment became a testament to the transformative power of stepping outside one's comfort zone. As I return home, I carry with me a renewed sense of purpose, a deeper appreciation for diversity, and a commitment to being a global citizen and advocate for positive change.



*Dr Emilda Belortaja at the microscope in the Laboratory of San Giovanni di Dio Hospital in Florence*



*Immunofluorescence microscopy*

# My experience in computational medicine in Bern: using artificial intelligence in laboratory medicine.

By **Marta Bello Rego** Laboratory Medicine, University Hospital of Vigo (Spain)

My name is Marta Bello Rego and I am a pharmacist and final year resident in Laboratory Medicine at the University Hospital of Vigo (Spain). I have always had a strong interest in computer science and programming, especially its applications in the clinical laboratory.

During my residency, I had the opportunity to choose a laboratory for a two-month external rotation. I chose the group of Prof. Dr. Alexander Leichtle, Inselspital, Department of Clinical Chemistry, Bern University Hospital, Bern, Switzerland). I am very grateful to have spent this time under his mentorship at SITEM (Swiss Institute for Translational and Entrepreneurial Medicine) and the Inselspital, where I focused on learning the application of artificial intelligence and computational tools in laboratory medicine.

Dr. Leichtle is a renowned expert in laboratory medicine and heads a research group specializing in computational medicine, predictive modeling and machine learning. His group's work spans statistical modeling, analysis of large data sets (e.g., metabolomics), clinical data warehousing, and predictive modeling. They aim to bridge data-generating medical disciplines and data science to provide predictive and diagnostic insights.

During my stay, I had two main goals: to deepen my understanding of computational medicine and its applications in laboratory medicine, I developed an R package to verify the agreement between laboratory methods and presented a draft publication highlighting the importance of implementing such tools for method comparison. This project greatly enhanced my programming skills and their application in the clinical laboratory. To expand my expertise in artificial intelligence, I attended courses on AI at SITEM and gained exposure to cutting-edge applications in translational and entrepreneurial medicine.

Dr. Leichtle and his team welcomed me warmly and treated me as another member of the group. I look forward to continuing our collaboration and applying my knowledge of computational medicine and artificial intelligence in the clinical laboratory.

The importance of artificial intelligence and computational medicine in laboratory diagnostics cannot be overstated. Predictive modeling, machine learning, and data analysis tools enable us to uncover patterns and insights that can improve diagnostic accuracy and patient care. By developing and implementing computational tools, we can streamline laboratory workflows, improve data interpretation, and facilitate personalized medicine approaches.

I would like to thank Prof. Dr. Alexander Leichtle for his unwavering support and guidance during my rotation, which fostered my interest in computational medicine and helped me maximize my learning opportunities. I would also like to thank Drs. Elías Álvarez and Covadonga Fernández for having faith in me, fostering my passion for artificial intelligence, helping me set and focus on the goals of this rotation to get the most out of it, and Dr. Arturo Fernández Nogueira for allowing and supporting me to complete this rotation.

I would also like to thank the International Federation of Clinical Chemistry (IFCC), the Spanish Society of Laboratory Medicine (SEQCML) and the Fundación José Luis Castaño-SEQC for their support through the Professional Exchange Program (PEP) scholarship. I recommend this experience to other residents and young laboratory professionals.

*IFCC –PSEP My experience in computational medicine in Bern: using artificial intelligence in laboratory medicine.*



*Marta Bello Rego, IFCC PSEP and Prof. Dr. Alexander Leichtle*



*Marta Bello Rego with Bern (Switzerland) in the background*

# IFCC – PSEP

## My Experience in Oslo, Norway

By **Mulato Melese Derebe** Bahir Dar University, Biotechnology Research Institute Bahir Dar, Ethiopia

The IFCC exchange program activities hosted at Norwegian institute of Public Health (NIPH) Norway, was started by refreshing samples transported from Ethiopia and conducting isolate identification by MALDI-TOF techniques to have pure isolates of *Neisseria gonorrhoea*. The pure isolates were subjected to a phenotypic antimicrobial susceptibility test (AST) and genomic analysis. The genomic DNA was extracted from pure bacterial culture and went through preparing DNA libraries for whole genome sequencing. The Whole Genome Sequencing (WGS) was done using Illumina NextSeq 550. The bioinformatics data analysis was characterized using the multi-locus sequence typing (MLST) scheme from PubMLST and NG-STAR (Antimicrobial Sequence Type). The write-up of these findings has started and continued for publication as my PhD study.

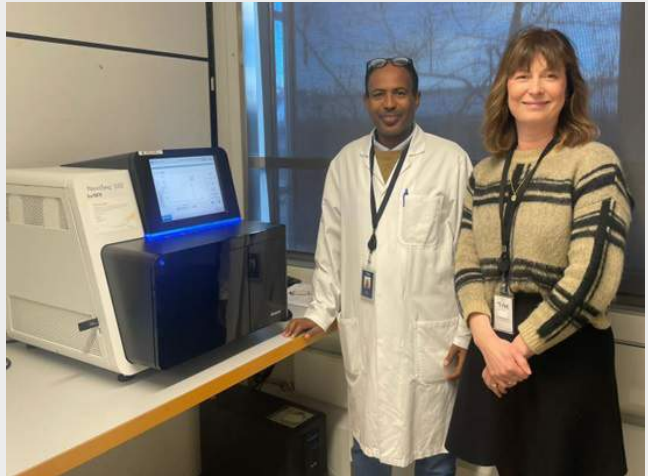
During this PSEP program, I was thrilled to be surrounded by senior molecular biology experts who are also highly qualified and competent researchers. With significant outcomes from the study findings, I have been able to apply the molecular techniques, drug resistance testing, and bioinformatics skills I acquired. Every one of my expectations was met, and in many instances exceeded my trip under the defined objectives of the planned activities. In addition, during my visit, attending academic conferences, seminars, and other activities often benefit learning and foster my interpersonal connections.

Beyond what I have mentioned, my PSEP appointment with IFCC support was very across-the-board and filled the gaps in my knowledge and skill set related to genomics, next-generation sequencing technologies, and interpretation and data analysis through different tools of bioinformatics. In this regard, IFCC has awarded the PSEP program and covered the transport, accommodation, and related expenses. The communication through these processes was responsive and flexible to meet the aims of the trip. In this process, the IFCC president, executive board members, and office representatives had gratefully cooperative with their swift response and best networking relationship in order to help the beneficiary and do a better job. I have special thanks and want to express my gratitude to Silvia (IFCC office) for her flexibility, willingness to help and the efforts and extra time you have contributed to the process of this PSEP. Again, I would like to transfer my great thanks to EMLA and IFCC for this significant support to achieve my academic career and research experience.

*I'm beyond grateful for the support of IFCC and the team you gave me for this success."*



*Mulato Melese Derebe in the Bacteriology Laboratory*



*Mulato with Dr. Bente Borud, supervisor and lead researcher, NIPH*



*Exit meeting with professors and researchers at NIPH including memorial award from my Supervisor Dr. Bente Borud*

# IFCC-Abbott Visiting Lecturer Program (VLP) 2024 CSCC / SQBC Joint Conference, Mont Sainte-Anne, Quebec, Canada

By **Dr. Wilson Shcolnik, Md, PhD** Brazilian Society of Clinical Laboratory-Laboratory Medicine (SBPC/ML)

I am grateful for the opportunity to have participated in the event held by the Canadian Society of Clinical Chemists, through the IFCC-ABBOTT Visiting lecturer Program (VLP). I have no doubts about the great value brought by this Program, both for the lecturers and the event participants.

My participation enabled an intense exchange of experiences with professionals who work in Canadian laboratories and teachers who participated in the event.

Among the topics discussed with Canadian professionals I can mention: knowledge of the scenario regarding laboratory services offered in Canada, including infrastructure, characteristics, professionals' performance, challenges and opportunities for improvement.

The main activities carried out were:

Symposium on IFCC Expert Insights on Quality Improvement in Laboratory Medicine and Patient Safety;  
Consensus Group meeting and industry presentations;  
Scientific Workshops: QIs in POCT;  
Consensus group meeting conclusion and next steps.

The objectives of my participation were to provide participants with learning about:

1. The Brazilian clinical laboratories and the health system.
2. Existing regulatory requirements (which include structuring a quality system).
3. The clinical laboratories adherence to accreditation and laboratory indicators programs, as well as the results obtained.
4. The history, initiatives and difficulties faced by the Brazilian Program of Laboratory Quality Indicators
5. The details about the data platform and participation statistics of Brazilian and foreign laboratories
6. The experiences and insights presented, so that they can be used in programs in other countries

The subjects discussed in the Consensus Group Meeting were:

1. Selection of smaller set of mandatory Quality Indicators to maximize participation and improve patients' safety at the international.
2. Increasing the number of laboratories in the calculation of Quality Specifications by developing a new strategy of global Quality Specifications (Addition of national QS weighted based on the number of labs included).
3. Increasing collaboration with industry to increase the number of software/middleware that facilitate access to the IFCC QIs.
4. Discussing the limitation of the number of laboratories participating in the MQI platform. Discussing the value of potential decentralization by collaborating more closely with national societies and national programs.
5. Integration of QIs in POCT into the MQI guidelines.
6. Discussing the value and potential strategies to collaborate more closely with accreditation bodies for a more formal integration of IFCC QIs into national recommendations.
7. Integration of QIs from other laboratory specialties.

Soon the event coordinator, Prof. Vincent de Guire will submit to participants a publication proposal that must also be evaluated and approved by Chair Prof Mario Plebani. The next step will be to make the conclusions and recommendations of the WG LEPS public, through publication by the IFCC. The WG will hold bimonthly meetings via videoconference.

The organization and logistics deserve praise. Everything worked perfectly and I had full assistance from the organization, both the Canadian Society and the IFCC.



*Dr Wilson Shcolnik, IFCC Abbott VLP (4th from the left) with the Scientific Organizers of the 2024 CSCC / SQBC Joint Conference in Mont Sainte-Anne, Quebec (Canada)*



*Dr Wilson Shcolnik during his presentation*



# IFCC-Abbott Visiting Lecturer Programme – V Jornadas Científicas Julias – V Jornadas Internacionales 2024, La Paz, Bolivia

By **Beatriz Varela** Asociación Bioquímica Uruguaya (ABU)

## Introduction:

The congress was hosted by the Sociedad Boliviana de Bioquímica Clínica, filial La Paz, and was held at the Real Plaza Hotel and Convention Center in La Paz.

A total of approximately 100 registrants attended the congress. One hall was used throughout the congress, which was comfortable and very well equipped with modern audiovisual facilities.

## Scientific Programme:

The academic program of the congress includes lectures by experts. A wide range of laboratory and clinical topics were included from all branches of laboratory medicine.

A total of 4 posters were presented and defended in person by the authors.

My contribution to the event was giving three 45-minute conferences. The conferences were titled:

- 1) Navigating the transition: strategies for managing quality control lot changes
- 2) Delta check: an analytical approach
- 3) Risk Management in the Clinical Laboratory.

Also, I participated as part of the poster evaluation committee along with Dra Montserrat Blanes and Dr Carlos Peruzzetto.

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There was one social event, the welcome cocktail, during the congress, on the Thursday:

All the information provided prior to and during the congress was extremely clear and in a timely manner.

My stay was exceptional, and the support provided to me was outstanding. In particular, I wish to acknowledge the friendship and assistance of Dra Fabiola Linares.



Poster evaluation panel members (L-R): dr Montserrat Blanes, Dr Carlos Peruzzetto, Dr Beatriz Varela.



Poster certificate ceremony: the winners with the evaluation panel members.

# IFCC: the people

## Interview with Prof. Dr. Tomris Ozben, IFCC President



Prof. Dr. Tomris Ozben  
IFCC President



Dr. BQF. María Pasquel-Moxley  
C-PR/CPD-IFCC Chair  
Member WG-IANT/RIA/  
CPD-IFCC Interviewer

Dear Prof. Dr. Tomris Ozben, we kindly request a short interview for our readers.

**1.- You have been active in IFCC for many years, you have participated in different and important positions, now that you are the IFCC President, what is your main objective for the most important World Federation of Laboratory Medicine such as the IFCC?**

I am deeply honored and extend my heartfelt gratitude to the IFCC member societies across the 6 IFCC Regional Federations for their kind support and trust in electing me as the IFCC President for the term 2024-2026. I genuinely appreciate their confidence and wish to reassure them that I am wholeheartedly committed to deserving their trust. Assuming the role of President of the IFCC is not only an immense privilege, but also a significant responsibility for me. I am enthusiastic about the opportunities and challenges that lie ahead as I commence my journey of serving the IFCC community, beginning my term on January 1st, 2024.

I am dedicated to investing my time, expertise, knowledge, and effort into sustaining, improving, and enhancing the functions, activities, and financial stability of the IFCC on a daily basis, for the benefit of the IFCC, its Regional Federations, and member societies. It is my goal to address their educational, scientific, and financial needs and to advocate on their behalf within the IFCC Executive Board.

Assuming a leadership role alongside other committed members of the IFCC Executive Board, IFCC officers, and the IFCC community, our shared mission is to fortify the robust foundation upon which the Federation stands. Our objective is not merely to maintain, but to elevate IFCC functions and initiatives, making significant contributions to the advancement of Laboratory Medicine and the development of its professionals. We are dedicated to identifying new opportunities and devising innovative strategies that empower Laboratory Medicine to play an indispensable role in patient care. Our aim is to ensure that the IFCC remains the foremost global organization representing Laboratory Medicine worldwide.

We are set to raise the IFCC banner even higher, maintaining past initiatives while introducing novel new projects. The combined expertise, knowledge, and fresh ideas from IFCC officers, coupled with their enthusiastic contributions across various functional units, will drive us forward. We underscore the importance of close collaboration with IFCC Regional Federations, IFCC Member Societies, and Corporate Members, encouraging their active engagement in all IFCC activities.

I firmly believe that advancing healthcare through Laboratory Medicine relies on the active participation and committed involvement of IFCC Members and officers. Our collective efforts play a pivotal role in steering our profession toward the objectives and direction outlined in the new IFCC Strategic Action Plans, set for implementation in the coming years. These plans have been meticulously developed in collaboration with the IFCC Executive Board, IFCC Functional Units, IFCC National Societies, and Corporate Members, incorporating their invaluable insights, ideas, and feedback in formulating the IFCC Strategic Action Plans. This inclusive approach ensures that the IFCC Strategic Action Plans authentically reflect the diverse perspectives and expertise within our community.

**2.- There are many young scientists around the world who are part of the 6 Federations that make up the IFCC, what message do you send to them to be part of the IFCC organization?**

I strongly encourage young scientists to actively engage and assume fundamental roles in IFCC activities. Young Scientists (YSs) represent the future of Laboratory Medicine and constitute the primary workforce of laboratory professionals. Our profession, Laboratory Medicine, is characterized by constant evolution and dynamism. Young Scientists are the future leaders, but they require training and encouragement to succeed in their roles, ideally with the support of experienced leaders. To facilitate this, YSs must have access to activities that promote their participation, provide training opportunities, and enhance communication and networking. In pursuit of these objectives, I proposed the establishment of the IFCC Young Scientist FORUM to the IFCC Executive Board (EB) in 2019, which was graciously approved.

One of the primary goals of the IFCC YS FORUM is to facilitate the establishment of professional and scientific connections among YSs worldwide. The Scientific Program of the YS FORUMS is developed and curated by young scientists through their IFCC Task Force-Young Scientists (TF-YS), creating an ideal environment for YSs to exchange experiences, learn from peers, and stay informed about TF-YS activities, opportunities, and challenges, thereby enhancing networking. It offers young scientists an exceptional platform for open discussions, sharing scientific and research experiences, exchanging ideas, initiating joint projects, arranging laboratory visits, and forming new professional and scientific connections. All participating Young Scientists benefit from skill development for their careers while engaging with ongoing TF-YS activities and networking opportunities.

Subsequent to the FORUM, all YSs attend the EuroMedLab/WorldLab Congresses, benefiting from an outstanding scientific program comprising plenary lectures, symposia, and educational workshops presented by eminent speakers showcasing the latest scientific advancements across Laboratory Medicine disciplines. This presents an excellent opportunity for FORUM participants to interact with senior officers and expert scientists in Laboratory Medicine. Additionally, attending the exhibition allows FORUM participants to explore recent technological innovations and practical solutions tailored to the needs of clinical laboratories.

The 3rd Edition of the IFCC FORUM For Young Scientists was held on May 26th, 2024, in Dubai, United Arab Emirates. This event was a valuable platform for young scientists to further their professional development and expand their networks.

### **3.- In your personal and professional life, what does the IFCC represent to you?**

IFCC holds a significant place in my life, serving as the focal point, especially since assuming the role of its President. I dedicate a considerable amount of time to IFCC, often prioritizing it over my personal commitments to my family and friends. Day and night, I devote myself to IFCC, brainstorming new projects aimed at benefiting IFCC and its members.

The following services have been instrumental in my acclimatization to the inner work of IFCC, allowing me to familiarize myself with the activities of various IFCC functional units and the relationships between IFCC and its Regional Federations and member societies. They have provided me with the opportunity to personally connect with numerous colleagues all around the world. For me, this is the greatest joy and advantage - knowing and collaborating with so many esteemed colleagues and friends worldwide.

Throughout my journey with IFCC, I have had the privilege of serving in various capacities:

- I initiated my service to IFCC as the Corresponding Member (2002-2004), Full Member (2005-2007) and two terms as the Chair (2008-2014) of the Congresses and Conferences Committee (C-CC).
- I was elected by the IFCC Council and served two terms as the IFCC Treasurer (2015-2017 and 2018-2020).
- I am one of the five members of the Board of Directors of the IFCC Foundation for Emerging Nations (FEN), a non-profit Charitable Trust dedicated to enhancing the quality and accessibility of laboratory medicine services, particularly in emerging nations (2016-present).
- I initiated to establish and serve as the IFCC YS FORUM Consultant (2020-present).
- I have served as the Organising / Scientific Committee Member for numerous IFCC EuroMedLab and WorldLab Congresses and IFCC General Conferences.
- I was elected by the IFCC Council to serve as the IFCC President-Elect (2023), IFCC President (2024-2025-2026) and IFCC Past-President (2027-2028).

These experiences have provided me with invaluable insights and connections within the global Laboratory Medicine community, allowing me to contribute meaningfully to the advancement of our field.

### **4.- A final message that you would like to add for all our readers?**

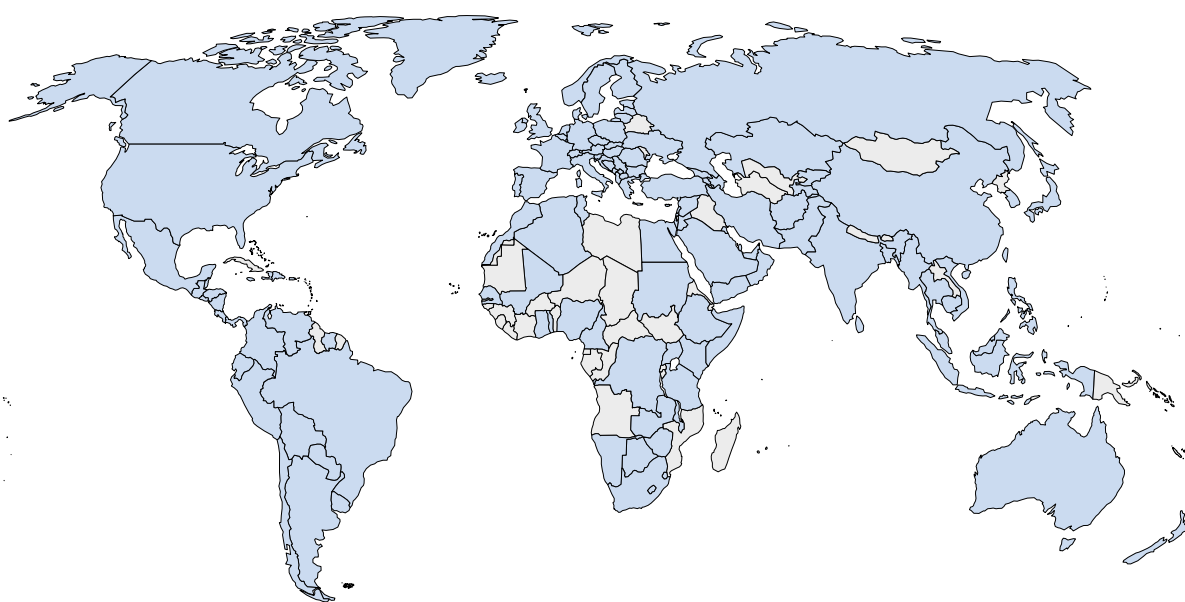
Success in this evolving landscape requires collaborations among industry, public, private, and academic entities driving innovation. Achieving our shared objectives demands concerted action and cooperation.

I extend a warm invitation to the entire IFCC community to actively engage in IFCC's initiatives, fostering collaboration to strengthen IFCC's leadership in advancing laboratory medicine, integrated diagnostics, and elevating healthcare and medical laboratories' quality globally. Your involvement and contributions are essential as we collectively work towards these common goals. Your feedback, participation, and engagement will play a crucial role in steering laboratory medicine forward and shaping the future of our profession.

In recent years, IFCC's activities have seen consistent growth, with its substantial contributions to enhancing Laboratory Medicine widely recognized. This remarkable success is owed to the voluntary service, dedication, and time generously given by over 700 laboratory scientists from Member Societies and Corporate Members, serving across various IFCC Functional Units. I extend my heartfelt gratitude to the IFCC officers representing Member Societies and Corporate Members for their continuous support over the years. Their enduring commitment and loyalty have played a pivotal role in the successful execution of numerous IFCC tasks and projects.

I am looking forward to fostering productive cooperation with IFCC Executive Board members and officers, establishing collaborations and effective bridges with IFCC Regional Federations, National Societies, and Corporate Members in the ongoing and future activities of IFCC.

Dear Prof. Tomris Ozben, we thank you very much for the valuable time you have dedicated to answering this interview.





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## IFCC Calls for Nominations

Participate into IFCC activities and give your contribution! Review the open positions and, if interested, contact your National or Corporate Representative. Currently following call for nomination are open:

### New IFCC Committees:

- on Molecular Diagnostics in Infectious Diseases (C-MDID): with focus on tuberculosis diagnosis and antimicrobial resistance testing.
- on Molecular Diagnostics in Oncology (C-MDO): with focus on improving accuracy of molecular diagnostic methods for circulating tumour cells and circulating tumour DNA for the diagnosis and management of malignant diseases.

The Call for Nomination is for 5 Members (1 Chair and 4 Members) for both Committees.

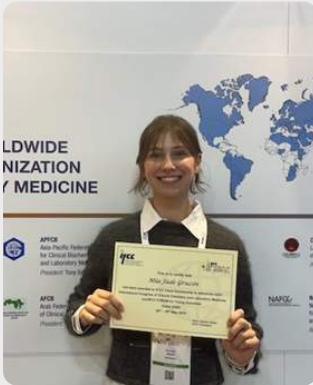
Nominations for all positions have to be sent to IFCC Office ([elisa.fossati@ifcc.org](mailto:elisa.fossati@ifcc.org)) before September 10th, 2024.



# IFCC: the Young Scientists

## IFCC WorldLab 2024 – Dubai through Young Scientists' Eyes

Part 2



**Mia Jade Gruzin**

*University of New South Wales, Sydney – Australia*

As my first international conference, it was incredibly rewarding to connect with scientists, researchers and clinicians at various stages of their careers from across the world. Despite the diverse contexts in which we work and study, I was surprised to see how similar our issues and barriers are. Engaging in discussions about these common challenges was incredibly enlightening, and it was a pleasure to build new connections and explore potential research collaborations that I hope to maintain for years to come.

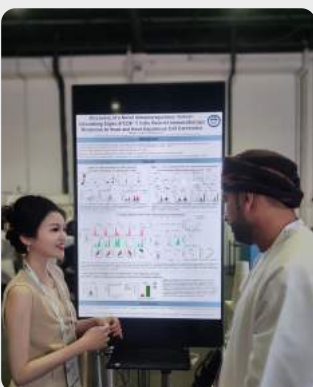


**Naila Hasanova**

*Azerbaijan Scientific Research Institute of Traumatology and Orthopedics*

I wanted to attend the congress. It finally happened with the support of IFCC. It was an incredibly beautiful and magnificent congress. It was very efficient. It allowed me to learn something new from the presentations. The Young Scientists Forum was a success. Successful presentations were made in the workshops. I was also happy to present my own poster in the exhibition hall and to see it published in the Clinica Chimica Acta journal.

I met people from different countries and many researchers at the congress. This was very special for me. It was encouraging to meet famous scientists at the congress. I will always remember it fondly as the first congress I attended abroad. I wish to attend IFCC congresses every year.

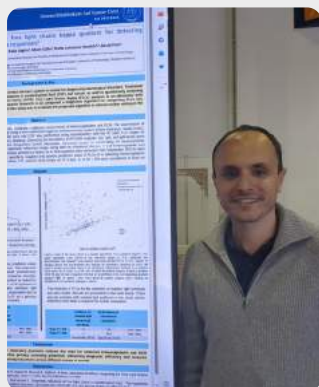


**Li Wendi**

*Department of Clinical Laboratory, State Key Laboratory of Molecular Oncology, National Cancer Center/National Clinical Research, Beijing, China.*

This was my first time attending an international conference, and I was excited to see so many new faces. During the IFCC FORUM for Young Scientists on the 25th, I met a new friend, Mario from Malaysia. She is a delightful person, and we had extensive discussions. She has a keen interest in artificial intelligence and big data, and we exchanged our thoughts on related research topics. On the 26th, I presented my research in the poster exhibition area to scientists from various countries, who expressed great interest in my work. On the 28th, I had the great honor of meeting Mrs. Tomris, the IFCC President, who awarded certificates to all scholarship recipients. I was pleasantly surprised to discover that I was the only female young scientist from China to receive the scholarship, which made me immensely proud.





**Rayan Suliman**

*Institute for Clinical Chemistry and Laboratory Medicine, University Hospital Dresden, Dresden, Germany*

As a young specialist in Laboratory Medicine, I had the privilege of participating in the Forum for Young Scientists on 25 May. This event provided a unique platform for knowledge exchange and networking, where young researchers presented their work on a wide range of topics. Attending the subsequent days of the IFCC WorldLab was also an enriching experience. Engaging with influential researchers and renowned clinical chemists fueled my passion for advancing laboratory medicine. The IFCC WorldLab 2024 was more than just an academic event. As I reflect on those days, I am more committed to advancing clinical laboratory medicine and contributing to our collective knowledge. I eagerly look forward to the next IFCC Congress in Brussels next year.



**Laura Valina Amado**

*Laboratory Medicine Department - Hospital Universitari Son Espases - Palma, Spain*

The YS Forum is a fantastic idea for starting the WL Congress, since it provides a chance for young people attending this event to meet each other and share knowledge, ideas and opinions. We had the chance to exchange cultural experiences, regarding people from many distant countries got together. I deeply encourage young scientists to apply for IFCC Travel Scholarships to attend these events. Getting involved with other Clinicians and Researchers is somehow mandatory for developing a good network that will allow clinical needs and advances to be shared and, utmost importance, understood recognised and spread. On our daily base, we tend to focus in the needs of our community, which may highly differ from those in other parts of the world. These events give us all perspective and humbleness, as well as help us better understand not only science, but societies and the world.



**Tara Rolić**

*Osijek University Hospital Centre, Institute of Laboratory Diagnostics, Faculty of Medicine, University of Osijek, Osijek, Croatia*

I was truly honored and excited to participate in the 3rd IFCC Forum for Young Scientists and WorldLab in Dubai, UAE thanks to the IFCC scholarship! I had an amazing opportunity to present my work from an IFCC Professional Exchange Program which was conducted at University Hospital Oslo, Norway, where I focused on calculating reference intervals for thyroid hormones using an indirect approach. It was great to discuss my results with colleagues from around the world. I loved reconnecting with friends and colleagues. It's hard to pick a favorite moment, but I especially appreciated the interactive sessions on leadership and management alongside the regular scientific and professional topics. This is the way forward for young scientists! Congratulations and thank you to everyone involved!



**Francis Kiigu Wathigo**

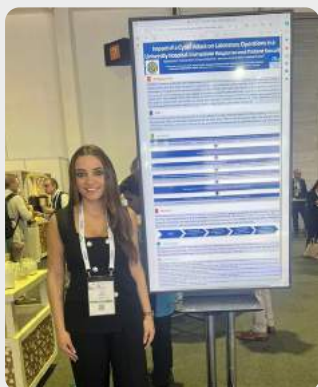
*The Nairobi Hospital, Argwings-Kodhek Road, Nairobi, Kenya.*

It was great privilege to attend and participate in the 3rd edition of the IFCC Forum for Young Scientists and XXVI IFCC WorldLab Conference 2024 in Dubai.

The conference had stimulating presentations with thought provoking discussions and insightful ideas. I was particularly impressed with discussions around evolution in assessment of renal dysfunction as well as new approaches in diagnosis of neurodegenerative diseases. It was indeed a wonderful learning experience.

It was also great opportunity to meet and network with peers as well as mentors and look forward to collaborative efforts in research. I look forward to participating in the 26th IFCC-EFLM EuroMedLab congress of clinical chemistry and laboratory medicine 2025 in Brussels.

Attending this conference was an invaluable experience, allowing me to engage with the brightest minds in laboratory science.

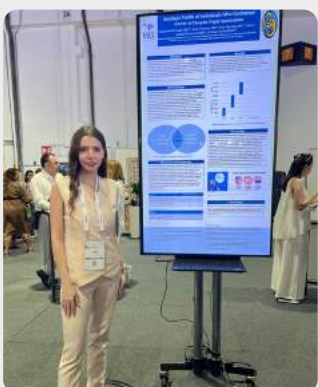


**Sana Yaacoub**

*University of the Holy Spirit Kaslik (USEK), Faculty of Medicine and Medical Sciences, Jounieh, Lebanon*

Thank you for the scholarship. I was able to join the Young Scientists Forum at the Conrad Hotel, where I had the privilege of meeting experts from different countries. The IFCC World Lab Congress at the Dubai World Trade Center surpassed all expectations. The level of organization, presentations, and exhibitions was exceptional. The symposia were particularly engaging, offering valuable insights and learning opportunities. Participating in workshops and discussions reinforced the importance of collaboration and sharing expertise in driving innovation.

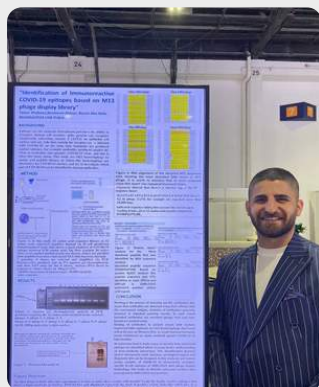
Presenting my poster during the Young Scientists Poster Tour was a highlight, fostering educational discussions with peers.



**Stephanie El Hawat**

*Centre Hospitalier Notre Dame Des Secours, Byblos, Lebanon*

The FORUM was really a cultural phenomenon joining all these people with amazing backgrounds in one place. I also got to attend the IFCC world lab Congress: words felt short when trying to describe this event. From the organization to the presentation to the exhibition everything was more than perfect. I was fortunate enough to participate in several workshops and panel discussions where experts shared their insight on how working together can lead to groundbreaking innovations. I also had the opportunity to present my poster at the young scientist's poster tour presentation. It was very educational on so many levels and we were in small groups discussing each other's presentation with the jury. I came back to Lebanon and I am now more than ever determined to amplify my academic work and research activity in this field.



**Tamer Ibrahim Shabaneh**  
*Hebron-West bank – Palestine*

Participation in young scientists forum, IFCC WorldLab lectures, workshops and poster sessions: to be honest it is first time for me to participate in a global conference especially with these minds in young scientists, and in first day: It was a great day, starts with the first meeting to young scientists members, so honor to be part of them and they surprise me with all motivation and the mind of the young members. At the opening lecture I was a little shocked about Professor Dennis Lo, he is a special person: he is the person found cfDNA in maternal serum, and then I know I'm in a something massive, something different.

#### More comments were made by

##### **Mariam Kvezereli**

*Department of Immunology, Tbilisi State Medical University, Tbilisi, Georgia*

The FORUM for Young Scientists provided an opportunity for networking and exchanging ideas with fellow young professionals from all over the world. The inspiration and motivation I gained from interacting with my peers have reinvigorated my passion for continuous learning and innovation. This experience has prompted me to advocate for more workshops and seminars within our National Society to share the knowledge and advancements in the field of neurology lab diagnostics.

Furthermore, the congress highlighted the importance of international collaboration. I am now more committed to seeking partnerships with other national societies and international organizations to participate in joint research projects and knowledge exchange programs.

##### **Aristea Milona**

*Attikon University Hospital, Rimini 1, Chaidari, Athens, Greece*

It was a great honor for me to participate in the IFCC Forum for young Scientists in Dubai. This international meeting was an experience that I will never forget. It was my first international event. I haven't had the opportunity before to interact with so many professionals from all over the world. So, this experience gave me a lot of valuable scientific information in the field of clinical biochemistry. Nevertheless, I had also the opportunity to come closer to the rich Arabic culture and at the same time to one of the most modern cities in the world. It was nice to meet and socialize with so many young scientists from all over the world.

##### **Anjali Sudha**

*Department of Biochemistry, All India Institute of Medical Sciences - Jodhpur, India*

The knowledge and insights gained during the conference have broadened my understanding of the scientific landscape, reigniting my passion for advancing the boundaries of knowledge. The discussions on key breakthroughs in Clinical Chemistry and their applications in Medical Laboratory practices were particularly enlightening. I am eager to share these insights with my colleagues and explore innovative ideas that can be applied in healthcare. The topics covered during the sessions will help me better understand important advancements, allowing me to initiate applicable ideas for innovations in the healthcare sector.

## Contribute to IFCC eNews

### Twelve Integrated Clinical Care Teams Receiving Recognition Through the UNIVANTS of Healthcare Excellence Awards



Driving change in healthcare is neither easy, nor quick. Measuring that change is often equally as hard. With this in mind, the UNIVANTS of Healthcare Excellence award program seeks to recognize, amplify and replicate best practices in healthcare that are led by integrated clinical care teams across the globe. In 2024, the UNIVANTS program is proud to recognize the brilliant work of twelve clinical care teams who have not only unified across the care continuum, but have made a measurable impact for patients, clinicians, health systems/administrations and payors.




These twelve best practices have made measurably improved care, with impact made across disease states and focuses, including closing care gaps, enhancing equity, improving women's health, enabling access to care, improving safety, and more. With 3 top global winners, 3 teams of distinction, and 6 teams of achievement (see table below), these diverse and innovative initiatives span geographies, health systems, patients and disease states. To learn more about these best practices, please visit [www.UnivantsHCE.com](http://www.UnivantsHCE.com).

Are you interested in recognition through UNIVANTS? Start preparing your application now as applications for the 2025 UNIVANTS of Healthcare Excellence award program open Aug 1, 2024, through until Nov 15, 2024. To learn more about UNIVANTS, to gain insights on tips and tricks and/or apply, please visit [www.UnivantsHCE.com](http://www.UnivantsHCE.com).

The UNIVANTS of Healthcare Excellence award program is proudly comprised of the following program partners: International Federation of Clinical Chemistry (IFCC), Association for Diagnostics and Laboratory Medicine (ADLM, formerly 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); each in partnership with Abbott.

Twelve Integrated Clinical Care Teams Receiving Recognition Through the UNIVANTS of Healthcare Excellence Awards

UNIVANTS OF HEALTHCARE EXCELLENCE TOP ELITE WINNERS

 <b>GetCheckedOnline: Better access to testing for sexually-transmitted and blood-borne infections</b> <i>British Columbia Centre for Disease Control</i>	Devon Haag Meghan McLennan Garth Graham	Mark Gilbert Susie van der Valk
 <b>Early detection of metabolic-dysfunction associated steatotic liver disease using FIB-4</b> <i>Premier Integrated Labs Sdn Bhd</i>	Yoke Lee Low Hareeff Muhammed	Leslie Charles Lai Chin Loy Mun Yee, Evonne Kong
 <b>Improved management of patients with high LDL-C through electronic health record-directed algorithms for guideline-concordant high-intensity statin prescribing</b> <i>Kaiser Permanente Southern California</i>	Matthew Mefford Michael Kanter Ronald Scott	Kristi Reynolds Tracy Imley

UNIVANTS OF HEALTHCARE EXCELLENCE RECOGNITION OF DISTINCTION

 <b>Improving equity in maternal and newborn outcomes by eliminating disparities in maternal drug screening</b> <i>Washington University School of Medicine, Barnes-Jewish Hospital, and St. Louis Children's Hospital</i>	Vahid Azimi Jeannie Kelly Lauren Nacke	Noor Riaz Stephen Roper
 <b>Improving access to health services in vulnerable communities affected by war</b> <i>Esculab</i>	Viktorii Honcharenko Anna Konyk Olena Yanchinska	Liudmyla Kostyuk Iryna Mandzyuk
 <b>Improved patient outcomes facilitated by c-peptide testing, enabling reclassification and therapeutic changes for patients with diabetes</b> <i>University Hospital of Wales</i>	Arshiya Tabasum Colin Dayan Rowan Hellier	Carol Evans Julia Johansson Evans

UNIVANTS OF HEALTHCARE EXCELLENCE RECOGNITION OF ACHIEVEMENT

 <b>Reducing unnecessary CT scans in the emergency department with new mild head injury assessment pathway</b> <i>Klinikum Lüneburg</i>	Felix Brüning-Wolter Meike Schrader Nicola Wolff	Thomas Rodt Jörg Cramer
 <b>The Kansas Two-Step: Simplifying the diagnosis of clostridioides difficile at an academic medical center</b> <i>The University of Kansas Health System</i>	Matthew Loeb Matt Humphrey Sarah Mester	Matt Shoemaker Maggie Reavis
 <b>No time to lose with lives on the line - Maximizing efficiency in the lab to save more lives through organ donation</b> <i>Southwest Transplant Alliance</i>	Selena Warden Doug Butler Sean Forquer	Reid Freeman Cristina Solomon
 <b>The Women and Heart Program - Empowering women's health through early identification and prevention of coronary risk</b> <i>Institute for Cardiovascular Prevention and Rehabilitation</i>	Andrea Snagić Goran Krstacić	Ante Miljak Sonja Frančula-Zaninović
 <b>Reducing unnecessary admissions associated with pediatric mononucleosis via implementation of EBV IgM testing in the emergency department</b> <i>Emergency Clinical County Hospital Targu Mures</i>	Oana Roxana Oprea Karoly Vecsei Florina Floristeanu	Lucia Mezei Dobreanu Minodora
 <b>Establishment of a monomer prolactin detection method and specific reference interval to enhance the ability to identify macroprolactinemia</b> <i>Huashan Hospital Fudan University</i>	Ming Guan Yao Hu Hongying Ye	Zhaoyun Zhang Yao Zhao

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# Impact of luminescence in Clinical Laboratories

by **Dr. Luis Figueroa Montes** President of AMPPC, Perú  
ORCID <https://orcid.org/0000-0002-3708-8603>

I am going to tell you a story, where one of the protagonists of luminescence obtained the Nobel Prize in Biochemistry in 2008. The Americans Martin Chalfie, Roger Tsien and the Japanese Osamu Shimomura, together obtained the Nobel Prize in Chemistry in 2008 “For discovery and development of green fluorescent protein. This protein (Green Fluorescent Protein – GFP) was observed for the first time in the jellyfish *Aequorea victoria* in 1962. Today it is one of the most used tools in biomedicine (1).



This jellyfish lives off the west coast of North America. GFP resides in its light-emitting organs, which glows intensely under light ultraviolet. GFP revolutionized biological sciences. Its green light allows scientists to track, among other things, cancerous tumors, new blood vessels, how Alzheimer’s disease kills brain neurons, how cells infected by the human immunodeficiency virus replicate, understand how neurons are organized within of the brain and how proteins interact within the cell (2).

In this article we will highlight the contribution of the Japanese Osamu Shimomura. A scientist who knew him closely says that he witnessed the explosion of the Nagasaki atomic bomb in August 1945, just 15 kilometers from the epicenter, when he was a teenager and worked in an aircraft repair shop. These memories are a fundamental part of the story of this boy born in Kyoto who grew up in one of the most difficult eras in Japanese history and later identified a fluorescent substance in a jellyfish that, years later, would forever illuminate the field of biology (3).

Shimomura moves around his Marine Biology Laboratory in Woods Hole, Massachusetts, as if carrying his own force field. His lean face with its benevolent expression has at the same time something monastic, academic and iron (like a Jedi). He guides me through the small, cramped room, equipped with the latest in electron microscopy, and stops before a shelf with a glass bottle that says “*Cypridina* 1944” (3).

He takes a handful of tiny, dried crustaceans (similar to sesame seeds), puts them in a mortar, adds drops of water, and grinds them. Soon a soft light blue luminescence emerges that intensifies when pressure is applied “I have performed this demonstration many times and I am always amazed to see that the glow continues to appear after so many years of these small organisms being dissected” (3).

The first time Shimomura saw bioluminescence he was 27 years old; he had just graduated as a pharmacist and had just accepted a position as assistant to Professor Yoshimasa Hirata, at Nagoya University (3). Hirata was dedicated to isolating and purifying natural compounds. “We don’t know anything about this,” the professor told his new assistant, showing her the light of the organism *Cypridina hilgendorffii*. “Only it glows.” Are you interested in finding out why? Bioluminescence has fascinated scientists for centuries. In 1887, Raphael Dubois, from the University of Lyon in France, had discovered that this light of animal origin (bioluminescence)

appears thanks to two substances: one that acts as fuel and another that is the igniter (3). Dubois isolated these 2 components and named them luciferin (the fuel) and luciferase (the catalyst, the substance that precipitates the chemical reaction), alluding to the name Lucifer, which means “bringer of light” (3).

Bioluminescence is a rare characteristic in terrestrial animals, but very common in marine beings. In the depths of the ocean live bacteria, protozoa, fungi, jellyfish, squid, worms, crustaceans, mollusks and sharks that have the ability to produce light in a chemical reaction so effective that it barely releases heat; a cold light that can serve as an alarm signal, an escapist’s disguise, an object of seduction and a bluff to find food (3).

Shimomura, accidentally trying to make luciferin crystals from *Cypridina*, brought the luciferin into contact with an acidic medium. The next day he saw with amazement that small red crystals had formed on the surface of the solution. They were pure luciferin crystals, the product of contact with acid. The luminosity of the crystals turned out to be 37,000 times greater than the dry powder of the crustacean (3). This serendipitous discovery gave Shimomura the tools to establish the exact nature of *Cypridina*'s luciferin. News of his feat reached Princeton University, where Frank Johnson had tried in vain to do the same. Frustrated with his own attempts, Johnson invited the young Japanese to move to the United States to work on what would be his great contribution to science (3).

Once with Shimomura in the US, Johnson turned off the lights, gave him a bottle of whitish powder and mixed it with water. But, unlike the experience with *Cypridina*, there was no light reaction. "This is dust from the bioluminescent jellyfish *Aequorea Victoria*." Its effect only lasts a few hours while it is fresh and cannot be reactivated. Would you be interested in studying this jellyfish?" Johnson asked the new collaborator. The same afternoon of their arrival they began collecting jellyfish on the pier of the laboratories of the University of Washington using nets to clean pools. During the summer of 1961 they collected and squeezed more than 9,000 jellyfish (3).

One afternoon, when he was cleaning the glass containers after a session of experiments, Shimomura poured into the sink some of the jellyfish juice whose pH had been neutralized so that it was neither acidic nor basic. When the liquid made contact with the sink, he released a bright flash of blue light. After a while, he realized that the activating ingredient was calcium from seawater. If calcium was able to ignite the reaction, then extracting it would surely inhibit it (3).

In an article published in 1962 by Shimomura and collaborators, they observed that green light emanates from the intact light cells of the animal. The phenomenon of absorbing light of one color and remitting it of another is called fluorescence and the molecule that Shimomura and his collaborators mention today is called green fluorescent protein (4).

In this way, Shimomura, since the Nobel Prize, his life has become a parade of conferences, interviews and explanations to the press. At one of those conferences, she was asked why she ended up pulling jellyfish out of the water that summer in Washington. Shimomura responded: "To solve a mystery" (3).



*Osamu Shimomura (left) receiving his Nobel medal in 2008. He was one of three sharing the prize in chemistry. Photo by AP photo/Scanpix Sweden, Anders Wiklund*



Currently, luminescence has many applications. Defined as the emission of light that is not caused by a high temperature (cold light). There are many light-emitting processes around us. They are produced naturally or artificially. Examples of natural luminescence are fireflies and phytoplankton: bioluminescence, or artificial luminescence by light-emitting diodes and computer monitors: electroluminescence (5).

There are different types of luminescence depending on the method of generating the high-energy substance, such as chemiluminescence, photoluminescence, electro chemiluminescence and radioluminescence. In addition, there are types of luminescence depending on the duration of the signal emission, such as flash and glow luminescence (6).

Currently, according to my understanding, more than 70% of the world's clinical laboratories on different continents use automated instruments that use luminescence in its various forms, for the analytical process of different biomarkers that are used in diagnosis and monitoring of chronic and infectious diseases. Many contributions to our daily lives were made by people who gave years of their lives, discovering the "Mysteries of science", such as the Japanese scientist Osamu Shimomura.



Sources: <https://www.embl.org/about/info/communications/blog/2021/05/osamu-shimomura/>

# News from Regional Federations and Member Societies

## Uniting Visionaries: Reflections on the 4th Annual Congress of the Nepalese Association for Clinical Chemistry

1. **Dr. Vivek Pant**, Corresponding Member, Task Force Young Scientist, IFCC and Corresponding Member, Communication and Publication Committee, APFCB
2. **Dr. Santosh Pradhan**, Corresponding Member, Task Force on Ethics, IFCC

After the postponement of four years, the Nepalese Association for Clinical Chemistry (NACC) had the pleasure to organize the 4th annual congress with the theme “Current and Emerging Trends in Clinical Chemistry” on April 27th 2024 at KIST Medical College and Teaching Hospital, Kathmandu. This theme was carefully chosen to reflect the evolving landscape of clinical chemistry.

Nearly 125 participants attended the Congress, which was divided into opening session, scientific session and election for new executive body. Apart from this, few industrial workshops and sub-group discussion were also held. Pre-congress program included finalizing two survey questionnaire for the congress participants, one dedicated to laboratory professional and physician interaction and next related to the ethics in clinical laboratory. We were excited to have our face-to face meeting after a long gap.

### Registration

During this annual conference, there was a slightly different approach taken with the process of registration. We created a social media (Whatsapp) group and suggested all laboratory professionals to register themselves and add other professionals in this dedicated group to motivate them for registration. Eventually, a room full of attendees counting 125 in number participating from many parts of the country participated in the congress. The greatest satisfaction has been to witness the emergence of the new generation within our organization.

### Opening Session

Initially there was an appreciation of the long services that have been provided with past executive committee. Many eminent personalities in the field of laboratory medicine within the county were asked to speak few words about our profession and this professional society. All these activities help to sustain and enrich our young minds.

### Scientific Session

The first lecture was by Prof. Dr. Kun-Young Sohn from Trillium health partners, Canada on topic “ Intra-operative monitoring of PTH/Adrenal venous sampling (AVS) for primary aldosteronism”. PTH monitoring during surgery aids in the identification of parathyroid glands. Surgeons can assess the adequacy of parathyroid function and avoid inadvertent damage or removal. AVS is a specialized procedure used to differentiate unilateral from bilateral adrenal disease. It involves sampling blood from both adrenal veins to measure aldosterone and cortisol levels. This procedure helps localize the source of aldosterone overproduction, guiding surgical intervention. The lecture delved into the techniques involved in intra-operative PTH monitoring and AVS along with few cases encountered by Dr. Sohn in his center. The lecture emphasized the importance of accurate interpretation of results for optimal patient outcomes. Further research and clinical studies are warranted to explore advancements in intra-operative monitoring techniques in Nepal.

The second lecture was to a concise update on need of newborn screening in Nepal. This lecture was delivered by Dr. Bijaya Mishra , assistant professor from B.P Koirala Institute of Health Sciences, Dharan, Nepal. The birth rate in Nepal as per 2023 is 18.377 births per 1000. Congenital malformation and genetic disorders are gradually replacing infectious cause of perinatal and neonatal mortality. The infant mortality rate of Nepal in 2024 is 22.716 per 1000 birth. Nepal does not have a national newborn screening program as part of its health policy. It is evident from our preliminary analysis that the financial loss for the nation due to the preventable newborn disease is much higher than the overall expenditure for screening, diagnosis, and treatment. Dr. Mishra advocated that Nepal is suitable for initiating a Newborn Screening Program.

#### **Newly elected Executive Body**

The newly elected executive members in NACC have been entrusted with decision-making authority and leadership responsibilities. Led by visionary leadership of Prof. Dr. Madhab Lamsal, the executive body aims to steer the association towards greater heights of achievement and impact in the field of clinical chemistry. The collective vision of the body encompasses several key objectives such as enhancing professional development, promoting NACC journal, advocating for quality assurance, strengthening collaboration and empowering next generation.

#### **Surveys**

Effective communication between laboratory professionals and physicians is crucial for accurate diagnosis, proper patient care, and improved healthcare outcomes. In Nepal, where healthcare infrastructure is developing rapidly, it's imperative to assess the current state of communication between these two vital components of the healthcare system. Serving both as a clinical resource for the laboratory community and a laboratory resource for the clinical community has been challenging for most of us. To address this apparent gap, a survey was done among participants who represented medical colleges, private and public laboratories throughout the country. Therefore the first survey was about laboratory professional and clinician interaction.

Nepal's healthcare system is undergoing significant transformations, with advancements in technology, increasing patient expectations, and evolving regulatory frameworks. However, the ethical dimensions of laboratory medicine, including issues such as patient confidentiality, informed consent, quality assurance, and professional conduct, are essential but often overlooked aspects. Understanding the current ethical landscape is crucial for ensuring patient safety, maintaining public trust, and upholding professional standards. Therefore the second survey was about ethics in laboratory medicine. The final results for both surveys will be published shortly.

Finally, this congress provided ample opportunities for networking and collaboration among attendees, fostering discussions and exchanges of ideas that are crucial for advancing the field of clinical chemistry in Nepal and beyond.

*Uniting Visionaries: Reflections on the  
4th Annual Congress of the Nepalese  
Association for Clinical Chemistry*



*Prof. Dr. Kun-Young Sohn (L) provided certificate of appreciation by Prof. Dr. Shyam Sundar Malla (R)*



*Dr. Bijaya Mishra provided certificate of appreciation by Prof. Dr. Madhav Gautam (R)*



*New NACC Executive Board (2024)*

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26<sup>th</sup> IFCC-EFLM  
EUROMEDLAB CONGRESS OF  
CLINICAL CHEMISTRY  
AND LABORATORY MEDICINE

49<sup>th</sup> ANNUAL MEETING  
OF THE ROYAL BELGIAN SOCIETY  
OF LABORATORY MEDICINE

FROM **18** TO **22**  
MAY **2025**

VENUE

**Brussels Expo**



**EUROMEDLAB**

BRUSSELS 2025

May 18-22, 2025



**15 January 2025**  
**15 March 2025**

Deadline for poster abstract submission  
Deadline for reduced registration fees

# IFCC's Calendar of Congresses, Conferences & Events

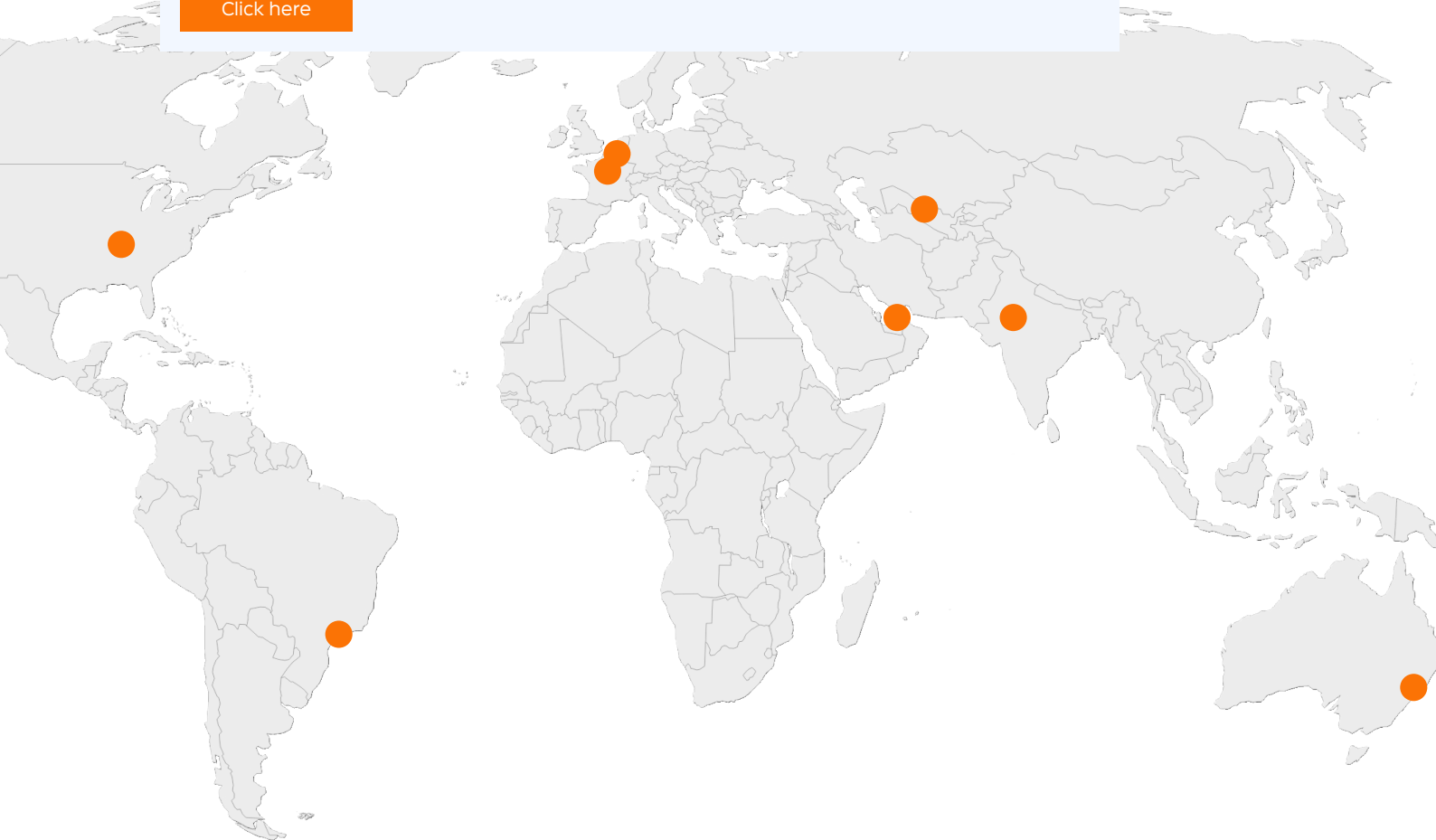
IFCC and Regional Federation Events			
Date		Title	Place
Oct 3 - 6, 2024		<a href="#">XXVI COLABIOCLI 2024</a>	Cartagena, CO
Oct 31 - Nov 3, 2024		<a href="#">APFCB 2024 Sydney</a>	Sidney, AU
May 18 - 22, 2025		<a href="#">XXVI IFCC-EFLM EUROMEDLAB 2025</a>	Brussels, BE
Oct 25 - 30, 2026		XXVII IFCC WORLDFLAB 2026	New Dehli, IN
Oct 10 - 13, 2027		APFCB 2027 KUALA LUMPUR	Kuala Lumpur, MY
Date to be selected		XXVII IFCC-EFLM EUROMEDLAB 2027	Venue to be selected
Date to be selected		XXVII IFCC WORLDFLAB 2028	Venue to be selected
Date to be selected		XXVII IFCC-EFLM EUROMEDLAB 2029	Venue to be selected
Date to be selected		XXVII IFCC WORLDFLAB 2030	Venue to be selected

Corporate Member Events with  
IFCC Auspices

Date	Title	Place
<b>Aug 26, 2024</b>	International Symposium on Laboratory Medicine SNIBE	International Academic Hall, Snibe Building-No.2 Shenzhen, P.R. China
<b>Nov 16, 2024</b>	Inter-QCTopics International seminars on Quality Control: Patient blood management – what is the role of the laboratory according to ISO 15189?	Quality consulting online event, HR
<b>Sep 14, 2024</b>	Inter-QCTopics International seminars on Quality Control : Laboratory screening for infectious agents in blood services: methods and quality control	Quality consulting online event, BR

Other events with  
IFCC auspices

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- Arab Federation of Clinical Biology (AFCB)
- African Federation of Clinical Chemistry (AFCC)
- Asia-Pacific Federation for Clinical Biochemistry and Laboratory Medicine (APFCB)
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