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EFLM Connects National Societies of Clinical Chemistry and Laboratory Medicine and Creates a Platform for all European "Specialists in Laboratory Medicine"



Foreword

Reported by Harjit Pal Bhattoa, Editor EFLM EuroLabNews

THE EFLM EXECUTIVE BOARD INFORMS

The great success of the EuroMedLab 2023 in Rome

Reported by Tomris Ozben, EFLM President



On behalf of the EFLM Executive Board, I would like to express my gratitude and thanks to all those who have contributed at the success of the recent joint IFCC-EFLM-SIBioC WorldLab and EuroMedLab Congress in Rome. This edition has broken the previous records both for the number of participants and exhibitors. More than 11500 were present in Rome:

- 4282 registered delegates
- 4003 visitors
- 3300 exhibitors

The congress employed a blended approach of both physical and virtual interactions. Important sessions of the Congress were available for the colleagues unable to attend the Congress physically. So that the benefits of the Congress will be extended

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The editorial team of the EuroLabNews is proud to present another issue, where built up of much excitement preceeded the release of this particular Newsletter. Perhaps the lime light was the WorldLab-EuroMedLab Conference held in Rome in the May.

The president of the EFLM Tomris Ozben informs us, on behalf of the Executive Board, about the great success achieved at the record breaking joint IFCC-EFLM-SIBioC Conference. Numerous EFLM distinguished awards and EFLM bursaries perhaps highlight the dedication of the EFLM in recognition of exemplary achievements in the field of Laboratory Medicine. Tara Rolic, EFLM Task Group LabX, announces the call for various exchange programs designed to propel mutual benefit for both the recipients and the host laboratories. Silvia Cattaneo from the EFLM Office reports on the honorary membership to Tomris Ozben from the Italian Society

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SIBioC-Laboratory Medicine. In the regular column 'Coffee with the EFLM President' read three excellent interviews by Tomris Ozben with Presidents of the national societies of Slovenia, Georgia and Cyprus. Ales Kvasnicka, member of the EFLM C-C, summarizes the past EFLM webinars and announces the forthcoming ones. Under updates on EFLM publications, don't miss out on the signature infographics tailor made by our talented young scientists. Silvia Cattaneo from the EFLM Office informs us about the upcoming CELME conference in Prague. In news from National Societies, the Spanish Society is presenting their latest happenings. The Swedish Society announces its change of guard. In another new column, the Young Scientists Corner, Tara Rolic and Ales Kvasnicka reflect upon the WorldLab-EuroMedLab conference as how the young scientists perceived it. The IFCC corner highlights global happenings in laboratory medicine. Mark your calendar for a variety of upcoming EFLM events and especially the upcoming conferences.



to scientists who did not have the opportunity to participate in the Congress. In addition to the above number, we had also about 1800 persons registered at the virtual congress modality. 3 symposia were specifically designed by EFLM: the first one, chaired by Janne Cadamuro and Maria Salinas, on the inappropriate use of laboratory resources – demand management tools and how to use them, the second, chaired by Rania Abu Seir and Tomris Ozben, on precision medicine and the third one, chaired by Pilar Fernandez Calle and Dalius Vitkus, on the quality in clinical laboratory: a moving target. The EuroMedLab Congress was also the occasion to present the seven EFLM distinguished awards that went to:

- EFLM Award for Scientific Achievements in Laboratory Medicine - Sponsored by Roche
Prof. Giuseppe Lippi (Italy)
- EFLM Award for Achievements in Advancing Laboratory Medicine in Europe - Sponsored by Roche
Prof. Abdurrahman Coskun (Turkey)
- EFLM Award for Excellence in Outcomes Research in Laboratory Medicine - Sponsored by Abbott Diagnostics
Dr. Shruti Jain (Finland)
- EFLM Award for Excellence in Performance Specifications Research - Sponsored by Abbott Diagnostics
Dr. Fernando Garcia Marques (Spain)
- EFLM Cardiac Marker Award - Sponsored by HyTest
Dr. Rami Aalto (Finland)
- EFLM Academy Award 2021
Prof. Evgenija Homsak (Slovenia)
- EFLM Academy Award 2022
Prof. Sedef Yenice (Turkey)





For this edition of the EuroMedLab, 16 EFLM bursaries have been assigned covering the congress participation to selected young specialists who have been selected on the basis of their curriculum and congress abstract.



This great success of EuroMedLab 2023 was possible thanks to the eminent speakers, chairs, IVD industry representatives, EFLM and IFCC Officers and all the participants attending the Congress from different countries all around the world. Our thanks go also to the Professional Congress Organizer (MZ) and EFLM and IFCC Office staff for their competence and professionalism during the organization process.



EFLM BURSARIES

EFLM Bursaries on occasion of the EuroMedLab 2023 in Rome

Reported by Silvia Cattaneo, EFLM Office

16 EFLM bursaries were assigned on occasion of the EuroMedLab 2023 in Rome covering travel, accommodation and congress registration. Bursaries were announced by the EFLM President, Prof. Tomris Ozben, during the Opening Ceremony. In addition, a get-together was organized on Tuesday May 22 at the EFLM Booth to celebrate our bursaries' recipients:

- Louisiane COURCELLES, Belgium
- Burak DURMAZ, Turkey
- Eniko Edit ENYEDI, Hungary
- Beatriz GARCIA GARCIA, Spain
- Julian GEBAUER, Germany
- Emeline GERNEZ, France
- Ana NIKLER, Croatia
- Elena Cristina PREDA, Romania
- Anna RADAJEWSKA, Poland
- Eline SANDVIG ANDERSEN, Denmark
- Hristina AMPOVA, North Macedonia
- Andriy KOST, Ukraine
- Nataliia KOZOPAS, Ukraine (Munich 2022)
- Leonard KURTI, Kosovo
- Nafija SERDAREVIC, Bosnia-Herzegovina
- Hamide SHLLAKU, Albania



Congratulations



EFLM bursaries recipients in Rome with the EFLM President and Members of the EFLM Executive Board

Join the EFLM circulating list and keep updated with EFLM initiatives. Future bursaries will be announced for the EuroMedLab Congress in Brussels! For information: eflm@eflm.eu

EFLM Bursaries open call of the EFLM Laboratory Exchange Programme

Reported by Tara Rolić, EFLM Task Group LabX

10 EFLM bursaries are available (5 of these specifically addressed to "[Vic Blaton's countries](#)") in order to support Laboratory Medicine professionals to attend experience abroad via EFLM LabX, the professional exchange initiative of the EFLM. The bursary will cover up to 1500 € for travel, accommodation and daily fee during the training.

Everything you wanted to know about EFLM LabX programme is available [here](#).

If you want to become an EFLM partner and offerer of a practice and increase the visibility of your lab [join](#) LabX!

For the applicants: search [LabX platform](#), find your practice, fill the [form](#) and send it to EFLM within **June 30, 2023**.

EFLM transparency policy and criteria for evaluation of bursaries' applications are available [here](#).

EFLM OFFICE INFORMS


Honorary Membership to Prof. Tomris Ozben

Reported by Silvia Cattaneo, EFLM Office

We are happy to inform you that EFLM President, Prof. Tomris Ozben, was recently awarded with the Honorary Membership of the Italian Society of Clinical Chemistry and Clinical Molecular Biology (SIBioC-Laboratory Medicine). This honorary membership is a very important recognition given by the SIBioC to a limited number of people. The honorary membership has been awarded to Prof Ozben for her extraordinary and exceptional contributions, achievements, rendered to the International Societies and Profession and fundamental contributions to the growth of Laboratory Medicine worldwide. SIBioC-Laboratory Medicine appreciates her extraordinary, distinguished figure in the field of Laboratory Medicine, renowned and well known to the International Scientific Community for her impressive and intense activity in Laboratory Medicine. The honorary membership was presented to Prof. Ozben on occasion of the SIBioC General Assembly held on 20th May 2023 in Rome at Antonianum University before the WorldLab-EuroMedLab Congress. We thank the SIBioC for this gesture of appreciation and are sure that you all join us in congratulating Prof. Ozben for this further recognition to her full commitment to the Profession



Prof. Tomris Ozben receiving the Honorary Membership



SIBioC
Medicina di Laboratorio

Società Italiana di Biochimica Clinica e Biologia Molecolare Clinica
 membro dell'European Federation of Clinical Chemistry and Laboratory Medicine (EFLM)
 e International Federation of Clinical Chemistry and Laboratory Medicine (IFCC)

<p>CONSIGLIO DIRETTIVO</p> <p>PRESIDENTE Tommaso Trenti (Modena)</p> <p>FAST PRESIDENT Laura Sciasovelli (Padova)</p> <p>VICE PRESIDENTE Marcello Glasico (Palermo)</p> <p>SEGRETARIO-TESORIERE Cristina Caru (Sassari)</p> <p>VICE SEGRETARIO-TESORIERE Antonio Fortunato (Ascoli Piceno)</p> <p>CONSIGLIERI Anna Carobeni (Milano) Giuseppe Lippi (Verona) Gavino Napolitano (Bergamo) Erika Pavanello (Torino) Roberta Rolla (Novara) Stefano Angelo Santini (Roma)</p> <p>RAPPRESENTANTE DIVISIONE TECNICO PROFESSIONALE Davide Fanci Santarcangelo (Milano)</p>	<p style="text-align: right;">Milan, 19th December 2022</p> <p>To Prof. Tomris Ozben EFLM President</p> <p>Dear Prof. Ozben</p> <p>I am glad to inform you that the Directory Board of SIBioC, in its meeting of November 16th, 2022, in agreement with article 5 of the current Statute of Society, unanimously decided to nominate you Honorary Member of SIBioC - Laboratory Medicine.</p> <p>With this nominee, SIBioC - Medicina di Laboratorio would recognize the extraordinary and exceptional services you have rendered to International Societies and Profession and your fundamental contribution to the growth of Laboratory Medicine worldwide. Further SIBioC - Medicina di Laboratorio is honoured to appreciate your extraordinary distinguished figure in the field of Laboratory Medicine, renowned and well known to the International Scientific Community for your impressive and intense activity in Laboratory Medicine.</p> <p>We would be glad to give you a little sign of our appreciation during our SIBioC Assembly planned on 20th May 2023 in Rome at Antonianum University on 6.00 pm (CET) just the day before WorlLab Rome 2023.</p> <p>My very best, Your sincerely Tommaso Trenti SIBioC – Laboratory Medicine President</p> <p style="text-align: right;"><i>Tommaso Trenti</i></p>
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COFFEE WITH THE EFLM PRESIDENT



Dear EFLM friends,

I have a special privilege to present you in this issue of the EFLM EuroLabNews interviews with distinguished Presidents of the EFLM members societies: Lidija Gobec, Tina Bukia and Charis Charilaou. I am grateful for their substantial contribution to the EFLM and mission that make EFLM great today and I sincerely must thank my guest colleagues for the time to share their experiences, thoughts and opinions about EFLM and laboratory medicine profession.

I hope you will enjoy reading these interviews with our esteemed colleagues and get to know them and their society better.

Tomris Ozben - EFLM President



Coffee with Lidija Gobec, President of the Slovenian Association for Clinical Chemistry and Laboratory Medicine



Could you briefly introduce your society? When was it founded, who can become a member, activities of your society, what has been done so far and future activities, projects, plans?

Roots of our society go back to 1961 when medical biochemists were organized within the framework of the Slovenian Pharmaceutical Society. In 1995, the Section of Medical Biochemists and the Section of Senior and Intermediate Laboratory Technicians of the Slovenian Pharmaceutical Society merged and after 33 years became an independent society, the Slovenian Association of Clinical Chemistry. At the General Assembly in March 2014 the association was renamed the Slovenian Association for Clinical Chemistry and Laboratory Medicine (SZKKLM) in accordance with the changes and efforts of the EFLM for the recognition and establishment of laboratory medicine in Europe. SZKKLM is a professional association of experts in the field of clinical chemistry and laboratory medicine in Slovenia. The common goal of all members of the SZKKLM is to care for the development of clinical chemistry and laboratory medicine in Slovenia in accordance with professional guidelines and good laboratory practice. Every year, the SZKKLM also organizes at least four professional meetings and one professional education on different topics intended for engineers and technicians in laboratory medicine. Since 2000 SZKKLM has regularly organized Slovenian congresses of clinical chemistry and laboratory medicine and symposia on the topic of quality assurance in medical laboratories. SZKKLM cooperates and connects with other professional, scientific and research societies, cooperates with the Chamber of Laboratory Medicine of Slovenia, with the Department of Clinical Biochemistry at the Faculty of

Pharmacy of the University of Ljubljana and Medical Faculty of the University of Maribor and other faculties and higher education institutions in the Republic of Slovenia, with clinics and institutes and with the Extended Expert College for Laboratory Diagnostics-Medical Biochemistry at the Ministry of Health, cooperates with government bodies or competent ministries in the field of health, education and science in Slovenia. SZKKLM works in the public interest and strives for the establishment of the profession and the development of laboratory medicine. At the moment our association has five commissions and seven working groups and more than 400 members. Of these, more than half have a degree in pharmacy, chemistry, biology or biochemistry or have completed the study of laboratory biomedicine. Around 100 members has completed a specialization study in medical biochemistry. In recent years, we have been trying to give young colleagues and students of laboratory medicine more opportunities for active participation in the association and invite them with scholarships for professional training and free membership fees. Since 2019 SZKKLM once a year issues a scientific and professional journal named Laboratory Medicine, which publishes articles from the wider field of laboratory medicine and is available in printed and electronic form on the SZKKLM website.

What are your suggestions for better education? Is the current education in your country fit for the purpose? Do you have a core curriculum for the training of medical biochemistry professionals?

In Slovenia master study of Laboratory Biomedicine is organized at the Faculty of Pharmacy. Beside this degree, some other profiles of under-graduated students could apply for post-graduate specialization in medical biochemistry. The specialization program of Medical Biochemistry includes the acquisition of theoretical knowledge and practical competences and takes 48 months according to the program aligned with the European syllabus. While our profession is very dynamic, continuous education is of a key importance for successful work in the labs also after finished formal education. SZKKLM has been active and has supported continuing education of its members by organizing many



professional events. Last year the Association between other has organized the 6th Slovenian Congress of Clinical Chemistry and Laboratory Medicine with International Participation held under the auspices of IFCC and EFLM and the 6th Slovenian Congress of Laboratory Medicine Technicians who takes place at the same time. We invited distinguished lecturers from abroad who together with local experts shared their great knowledge and experience to the participants of the congress. The parallel organization of congresses enables important communication and the exchange of professional experience between all employees in the field of clinical chemistry and laboratory medicine and which has proven to be a good practice.

In what direction do you see the laboratory medicine heading? What do you think for the position of the laboratory specialist to increase their visibility within the healthcare system? What challenges do you and your colleagues face?

Laboratory medicine is an integrative part of medical care but in practice the laboratory professionals are mostly »hidden« in their labs. The relationship with clinicians should become more the partnership of specialists of different diagnostic disciplines who work together for common goals. Soon we will have to face new technologies and bring them to the laboratories to support our work but above all the new clinical decision systems. In the era of emerging market of POCT and direct-to -consumer testing laboratory professionals will have important role to raise awareness and support the users in the local society with the knowledge of the preanalytical, analytical and postanalytical phase of such testing.

Do you think medical biochemistry professionals are ready for the emerging technologies such as Digitalization, Laboratory Diagnostic Algorithms, AI, ML, Integrative Diagnostics, Big Data? Do you believe in Partnership model for efficient integration and adoption of emerging technologies and innovations?

We haven't been ready yet for everything what is coming. Some of new technologies are slowly entering medical laboratories, others represent a big challenge. In the future all these new technologies will change our way of work and bring new solutions. Open mind and close cooperation with other disciplines will be necessary.

Do you think your society members participate and/or contribute enough to EFLM activities? Do they know the advantages to be EFLM Academy membership, for example,

the unique educational resource "Syllabus course", free attendance to the recently held 3rd EFLM Strategic Conference, its sessions were recorded and are available for one year?

SZKKLM encourage its members to be members of the EFLM Academy and to participate in other EFLM activities. Currently, there are few colleagues serving as a member or corresponding member in 16 various EFLM and IFCC committees and working/task force groups. This is quite challenging for a small country like Slovenia with around 100 active specialists in the field of clinical chemistry. These members support EFLM and IFCC activities and on the other side contribute to the information exchange and encourage professional activities of our own society. But because of tight schedules on the daily basis many deters from additional activities. Membership in the EFLM Academy through the e-learning platform offers a great access to a numerous professional lectures, journals, books and documents useful for daily professional work and serves in the continuous education and training. Our national society enables EFLM Academy membership to all members with appropriate education. I also welcome the preparation of different common EFLM guidelines which will pave the way to better harmonization through various European laboratory practices.

Some personal questions...

Please introduce yourself with a few sentences.

My name is Lidija Gobec and before 30 years I graduated at the Faculty of Pharmacy at the Ljubljana University, Slovenia. During master's postgraduate study I have worked for 4 years at the Department for Clinical Biochemistry at the same faculty and then after I moved to my home town where I started my career as an laboratory technologist and later specialist of medical biochemistry at the Department for Laboratory Medicine in General Hospital Celje. I work here still nowadays. My special interests are immunochemistry, preanalytics and laboratory information systems. I work with students of Medical Care at the Faculty of Health Sciences Celje where I'm involved as a lecturer of Laboratory Medicine.

In your professional career, you have served in many leading roles both in your country and internationally. What was your motivation?

Continuous wish to improve processes, to make things easier and more efficient, to serve a good cause, is my motivation at work and everyday life, too.

Could you share your way in biochemistry? Why did you choose this field? What do you like about your current job? Do you think that you chose the right job for you? If you have another chance???

I have never regretted to choose the clinical laboratory for my working environment, even though I did not get specific knowledge in this field when studying pharmacy. Since ever I have wanted to have a dynamic job inside the world of metabolic pathways, clinical conditions, and technique.

What would be your advice to young scientists who wish to pursue their career in laboratory medicine?

My advice for younger colleagues is always to be enthusiastic and curious with ambitions for improvement. And not to forget the patient you work for and the college you work with. When you love the laboratory medicine, and you are a part of a team the daily challenges are never too difficult.

Do you have some hobbies? What are the things outside of your work that you are passionate about? How do you like to spend you free time?

As my two children became students and they return home just for weekends I acquired free time to start flower garden. At the beginning I have dealt with dahlias, but after two full-bloom seasons I will try to cultivate other species, too. I enjoy in making bouquets and my friends are very happy with my hobby and regular flowers delivery. I have some other hobbies. Cycling and lying on the couch with book are my favourite sports, but not always in that order.

I like travelling around and as a green-oriented person I recently have started to discover all the benefits of travelling by train. I warmly recommend it!



Lidija Gobec in the lab and with the colleague at the conference



Organizers and lecturers of the 6th Slovenian Congress of Clinical Chemistry and Laboratory Medicine, Portorož 2022.



Ideas exchange during the scientific event (S. Jovičič, E. Homšak, P. Meško Brguljan, L. Gobec)



Bouquets ready to be delivered



Coffee with Tina Bukia, President of the Georgian Laboratory Medicine Association



Could you briefly introduce your society? When was it founded, who can become a member, activities of your society, what has been done so far and future activities, projects, plans?

Georgia, located on the Black Sea's East coast in the South Caucasus, has a long and turbulent history marked by periods of resurgence and fall. Georgia adopted Christianity in the fourth century. Georgia was forced

to join the Russian Empire and then the Union of Soviet Socialist Republics (USSR) until regaining independence in 1991. The Georgian Laboratory Medicine Association (GLMA) was founded in 1998 in the newly independent Georgia by Ms. Manana Akhvlediani, Doctor of Medical Sciences, professor, Head of the Laboratory Service at the Todua Clinic, and myself, Tinatin Bukia, Doctor of Medical Sciences, professor, and currently Tbilisi State Medical University (TSM) Emeritus. GLMA welcomes individuals who are interested in promoting laboratory medicine in Georgia and who recognize and meet the association's requirements. Membership is available to both Georgian and foreign citizens. GLMA has been actively involved in the promotion of laboratory medicine in Georgia during the past 25 years of its existence. In 2000 GLMA members established the "Passport of Laboratory Medicine of Georgia," a comprehensive document that defines all of the areas of the laboratory profession, and delineates the rights and obligations of medical laboratory doctors in Georgia. In 2001-2002, medical doctor certification process started in Georgia. As part of this, the GLMA working group developed 4,995 certification tests for medical laboratory doctors in Georgia (this is the term for medical laboratory specialists in Georgia). Every year, the tests are reassessed and revised. The Ministry of Health of Georgia to this day uses these tests for medical laboratory doctors' certification exams. The GLMA is also actively involved in the certification exams. I, as the GLMA president, have served as the chairman of the laboratory medicine examination commission since 2002 up to now. In addition, I am involved in the work of the appeals commission. Our association members cooperate with the Ministry of Health as experts in the laboratory medicine. In recent years, after joining the EFCC and EFLM in 2019-2020, the association's activities have significantly intensified. The

board of directors of the association stays very busy, organizing meetings and conferences to discuss the most recent laboratory developments. Even throughout the pandemic, the association continued its activities by holding online conferences. One of these sessions, held on the EFCC platform, drew nearly 4,000 participants. I would like to emphasize our association's efforts to assist Ukrainian laboratories working under war conditions. We acquired much-needed materials and transferred them to our colleagues in Ukraine by collaborating with firms that import laboratory equipment and reagents. We were the initiators of this project, for which our Ukrainian counterparts stated their deep appreciation. We intend to further expand our efforts in future. Our objective is to hold conferences in various regions of Georgia to encourage the adoption and deployment of cutting-edge scientific ideas and technology throughout the country. The country has developed an accreditation agency. The goal of the association is to expand the number of accredited laboratories and enhance their internal and external quality control systems. International laboratory federations contribute significantly to this goal. Today we have laboratories in Georgia that are equipped with the latest technology and whose specifications are on par with leading medical laboratories in the world. The GLMA mission is to ensure that all of the laboratories in the country function with high accuracy and are acknowledged for their trustworthiness. What is more, we aim to publish a laboratory magazine in Georgian; featuring original research papers as well translated latest articles in laboratory medicine. We are planning and started work already to define reference values for laboratory data. The association's goal is also to develop its own base for certification of medical laboratory doctors, which will allow testing of both academic knowledge and practical skills.

What are your suggestions for better education? Is the current education in your country fit for the purpose? Do you have a core curriculum for the training of medical biochemistry professionals?

Since 2005, laboratory medicine has been recognized as a field of medical professions in Georgia, and only personnel with the highest medical education can take positions of medical laboratory doctors. Biologists can serve as medical assistants. It should be noted, however, that undergraduate studies place a smaller focus on this specialty. For example, at TSMU, the country's top medical institution, the laboratory medicine course is optional, therefore some students may have inadequate understanding of the subject. The major training program is offered within the framework of postgraduate studies. The GLMA working group developed a two-year residency curriculum in laboratory medicine that covers all directions of the field. The curriculum specifies the level of academic knowledge and practical skills expected of doctors who graduate from the residency, and cover all aspects of laboratory service. The Ministry of Health has approved the GLMA curriculum and it is mandatory for all medical institutions that train residents in laboratory medicine. GLMA members are actively engaged in postgraduate education, and the program is constantly updated and supplemented with relevant up-to-date content. Doctors are eligible to take the certification exam after graduating from the residency program, and only certified persons are authorized to take the position of the medical laboratory doctor.

In what direction do you see the laboratory medicine heading? What do you think for the position of the laboratory specialist to increase their visibility within the healthcare system? What challenges do you and your colleagues face?

Technological progress has undoubtedly contributed to the laboratory medicine's substantial growth in recent years. I believe further advancement will again depend on the technological progress to a considerable extent, though a really significant advancement will not be possible without raising the knowledge and qualifications of the laboratory medicine personnel. A medical laboratory doctor should be able to analyze various research data and provide to the physician an informed conclusion on the patient's current condition, as well as possible complications or improvements. Laboratory research is critical in diagnosing, selecting therapies, and regular monitoring of the disease. Hence medical laboratory doctors must actively cooperate and interact with physicians, providing actual treatment to patients, which necessitate the highest medical education. Confidence in laboratory research has grown greatly in Georgia as a result of both technological advancement and active efforts of medical professionals in laboratories.

Do you think medical biochemistry professionals are ready for the emerging technologies such as Digitalization, Laboratory Diagnostic Algorithms, AI, ML, Integrative Diagnostics, Big Data? Do you believe in Partnership model for efficient integration and adoption of emerging technologies and innovations?

Georgian medical laboratory doctors, in my opinion, are ready only partially to adopt new technology. Given the constant introduction of new laboratory equipment and tests, I believe the educational training programs should be revised to facilitate laboratory workers' adaptation to these innovations. The most efficient way to improve laboratory methods is to collaborate with specialists from other domains.

Do you think your society members participate and/or contribute enough to EFLM activities? Do they know the advantages to be EFLM Academy membership, for example, the unique educational resource "Syllabus course", free attendance to the recently held 3rd EFLM Strategic Conference, its sessions were recorded and are available for one year?

Members of our association are actively involved in EFLM activities, where scientific research results are often presented in poster format at almost all conferences. Our representatives have been selected to participate in five EFLM working groups, three as full members and two as associate members. Currently, there are 84 full members in EFLM. We make effective use of EFLM's opportunities for training, with our representatives participating in online conferences, webinars, and free sessions included in the training course, and obtaining relevant certificates. To increase access to the available materials by representatives of the laboratory service of Georgia, we intend to translate some of them into Georgian.

What do you think about the ongoing and recent EFLM activities/initiatives? Do you have suggestions to increase communication and cooperation with EFLM? What you like and dislike about EFLM

EFLM's activities, in my opinion, are critical for all groups that are a part of the Federation. EFLM allows us to improve our future

work by keeping us up-to-date with the latest achievements in laboratory medicine throughout the world. I would suggest development of a special consultative committee comprised of specialists from various fields to improve communication with EFLM. This body could act as a point of contact for organizations seeking clarity on any scientific, practical, or legal questions pertaining to the laboratory medicine. If such a body already exists, I would appreciate if you could provide their contact details.

Some personal questions...

Please introduce yourself with a few sentences.

I entered the field of laboratory medicine after completing my studies at Tbilisi State Medical University's Medical Faculty, and I have been committed to this field of medicine throughout my whole career. I worked my way up from a regular medical laboratory doctor to the chairman of TSMU's Department of Laboratory Medicine. I have a Ph.D. in medical science and hold the titles of the professor and emeritus. I have approximately 100 publications in medical journals in Georgia and abroad. In addition, I have supervised Ph.D. students, i.e. young colleagues who have conducted their research under my guidance and subsequently acquired their academic degrees. In 1998, in association with TSMU, jointly with professor Manana Akhvlediani I have founded GLMA, and served as its president since then. Currently, I actively collaborate with the GLMA board members, a group of like-minded people, to lead our association, and together we have set and accomplished numerous notable goals. Aside from my practical work, I have always been involved in undergraduate and postgraduate education. For many years, I was the director of the laboratory medicine residency program. In addition, I work with state institutions on issues pertaining to the certification of medical laboratory doctors, preparing examination tests, chairing the state certification examination committee, etc. I continue to work actively as a practicing medical laboratory doctor.

In your professional career, you have served in many leading roles both in your country and internationally. What was your motivation?

As a student, I aspired to work in laboratory medicine. Even though this field was not widely recognized at the time, I was convinced that development of laboratory research was critical for the advancement of medicine, and I always believed that arriving to the correct diagnosis was based on laboratory services. In retrospect, I think that time has validated my choice.

Could you share your way in biochemistry? Why did you choose this field? What do you like about your current job? Do you think that you chose the right job for you? If you have another chance???

My main focus has always been on hematological and cytological studies, everything that is related to microscopy. I was particularly interested in the diagnosis of anemia and leukemia, study of blood and bone marrow cells. In recent years, my research has particularly focused on the male and female reproductive systems, encompassing microscopy, biochemistry, immunology, and other types of research. Because of the increased infertility, this area of study has become extremely important, and I am hopeful about the prospects for novel laboratory research in this area. I have never considered working in a different field of medicine, as I believe my work to be fascinating and critical. However, I have always closely collaborated with physicians, with a positive impact on the diagnosis and treatment of patients.



What would be your advice to young scientists who wish to pursue their career in laboratory medicine?

My advice to young scientists is to choose a career in laboratory medicine, which provides a wide array of opportunities. Laboratory medicine is closely linked to other fields of medicine, and our research has the potential to lead to multiple innovations.

Do you have some hobbies? What are the things outside of your work that you are passionate about? How do you like to spend your free time?

Since childhood, I've been interested in designing and sewing women's clothes, and later I have also experimented in knitting. At one point, I got proficient enough to almost pursue it professionally, which reflected nicely on the way I dressed. However, as this hobby is quite time-consuming, today I cannot dedicate much time and effort to it. In my spare time, I, like many others, love listening to music, seeing art pieces, watching movies and drama theater performances, particularly opera performances. However, spending time with my daughter, grandsons, and great-grandsons gives me the most delight.





Coffee with Charis Charilaou, President of the Association of Clinical Laboratory Directors, Biomedical and Clinical Laboratory Scientists



Could you briefly introduce your society? When was it founded, who can become a member, activities of your society, what has been done so far and future activities, projects, plans?

The Association of Clinical Laboratory Directors, Biomedical and Clinical Laboratory Scientists (ACLDBCLS) was founded in 2006

and represents the majority of Clinical Laboratories, the Biomedical and Clinical Laboratory Scientists who live and work in the island of Cyprus. It is the only association officially recognized by the Government for the practice of Biomedical and Clinical Laboratory Science in Cyprus. The Association is a full member of the IFCC and the EFLM. The officers of the Association authorized to act for the Association are 9 (nine) professionals, organized as Members of the Board. Officially the Association is represented in different committees:

- Board of the Clinical Laboratories Registration Committee
- Advisory Committee for the National Health System
- Advisory Committee for Health Issues
- Members of the Association in the Cyprus Anti-Doping Committee
- Board of Governors CYS-CYSAB (Cyprus Organization for the promotion of Quality)

The Association is involved in the field of Clinical Laboratory Science and its members are mostly persons employed in clinical laboratories on a professional level, the number of its members is around 145, and holds regular meetings that include scientific programs, seminars and symposia. The Association's goals are the legal entrenchment, recognition and protection of the scientific sector of the clinical laboratory scientists as an independent scientific class. Taking measures and coordinating activities with all Authorities or persons in order to achieve the aims and goals of the Association. The Coordination of the members' activity and the development of a sense of responsibility of the clinical laboratory scientists for the effective, coordinated and well-organized confrontation and the fair solution of the serious problems they encounter. Achieving a profound unity and coordinated action among all members of the Association and solidarity among them. The collaboration of the Association with other Associations for the protection of the profession and professional freedom. The collaboration of the Association with organized professional organizations to achieve the foregoing aims or any other Issue related to the profession of the clinical laboratory scientists. Monitoring the progress of clinical laboratory science for continuous training of the union's members and the overall well-being, progress and professional development and promotion of the profession.



ACLDBCLS General meeting – 7 March 2020

The Association cooperates with other professional Organizations, monitors developments in clinical laboratory science and assists in the education of its members by holding scientific conferences. It also organizes specialized seminars and other events focused on ensuring quality and ISO 15189 certification, to which a substantial number of clinical laboratories have been accredited.

The Association's website provides updated news and information to members and the public on related activities conferences, seminars and workshops in Cyprus and abroad. It also features a list of clinical laboratories in Cyprus ,99% of which have now joined the National Health System.(<https://www.aclcy.org/en>)



ISO Seminar 12-13 May 2012



In what direction do you see the laboratory medicine heading? What do you think of the position of the laboratory specialist to increase their visibility within the healthcare system? What challenges do you and your colleagues face?

Laboratory Medicine is constantly evolving and is dynamic at the same time. We all know that one of the major tools in the hands of clinicians is laboratory results. We all follow the development of our profession and new methods and applications in our field is the way laboratory medicine is going forward. Artificial Intelligence is here! However, the know-how and the expertise and probably the handling of all factors influencing this development is at the hands of Laboratory Specialists.

Do you think medical biochemistry professionals are ready for the emerging technologies such as Digitalization, Laboratory Diagnostic Algorithms, AI, ML, Integrative Diagnostics, Big Data? Do you believe in the Partnership model for efficient integration and adoption of emerging technologies and innovations?

Laboratory Specialists and Laboratory Medicine are heading into a new era. Development and adaptation must go together. A holistic approach is probably the solution. Laboratory specialists and laboratory medicine are a major part of a global approach to provide the best for the patient's safety. We do have as professionals I believe the expertise and the scientific background to cooperate with clinicians to do that.



PSA & Diabetes Seminar, Professor Keneth Sikaris – 10-11 October 2015



Vitamin D Seminar, Professor Howard Morris – 5-6 April 2014

What are your suggestions for better education? Is the current education in your country fit for the purpose? Do you have a core curriculum for the training of medical biochemistry professionals?

Education and training in Laboratory Medicine must be based on concrete theoretical knowledge and practical training and the best curriculum to follow is the EFLM published one. The current situation in Cyprus is based on education taken abroad since the existence of universities started the 1980's and laboratory education and training it wasn't a priority. Recently the presence of universities that introduce studies in Biological and Health Sciences gave the opportunity to students to educate locally and to our Association to cooperate with them and in conjunction with the Department of Life and Health Sciences of the University of Nicosia to introduce a postgraduate Immunology Program based on the EFLM syllabus. We aim to move ahead in other sectors so that those showing interest in them do not have to go abroad to study.



The Impact of Quality Assurance in the Clinical laboratory – University of Nicosia – 10 May 2018



Job fair in Health Sciences - University of Nicosia – 27 April 2023

Do you think your society members participate and/or contribute enough to EFLM activities? Do they know the advantages to be EFLM Academy membership, for example, the unique educational resource "Syllabus course", free attendance to the recently held 3rd EFLM Strategic Conference, its sessions were recorded and are available for one year?

Our Association in collaboration with UNIC University of Nicosia set up a Graduate program that offers a specialization in Immunology that complies with EFLM Syllabus requirements. Next step is to proceed with Hematology and possibly with Biochemistry. The last few years the Board of our Association had to spend many hours in meetings with NHS people for the preparation and implementation of Clinical laboratories in the National Health System. We are a small society and the number of our members involved and participated and /or contribute to EFLM activities is limited.



5th Congress of Clinical Chemistry Laboratory Medicine – 18-20 March 2011



5th Congress of Clinical Chemistry Laboratory Medicine – 18-20 March 2011

What do you think about the ongoing and recent EFLM activities/initiatives? Do you have suggestions to increase communication and cooperation with EFLM? What you like and dislike about EFLM?

The major EFLM task forces are:

- Green and sustainable laboratories
- In Vitro diagnostics task force A new EU regulation in vitro diagnostics came into effect in 2022 and had a major impact on the evaluation and approval process of IVds
- Disruptive Technologies- aiming to develop strategies for the integration of technologies changing Lab Med into standard diagnostic care within the federation and between EFLM member societies and other targeted audiences.

Pretty much the above are the major task forces. We can say that

of course we embrace all the above, but we have a long way to go. The reason being that the implementation of the national health system in the last 4 years literally brought the laboratories to their knees. By this, we mean that traditionally the private sector and public sector never managed to close the gap before NHS and the newly adopted system found the hospitals still being funded by the government. The gap is growing bigger financially and no matter how much supportive we are of all of the above EFLM task forces we definitely have difficulties following all these not because of lack of skills academically but mainly because of the lack of any funding for the private sector. The fact that after all the years, we are members in EFLM, we find that the last few years and despite all the difficulties, because of the pandemic, we see a more direct communication of the Board with member countries and we are happy that may be our worries will be taken into consideration, being a small society.

Some Personal questions...

Please introduce yourself with a few sentences.

I have more than 40 years in Clinical laboratory service. I started my educational and scientific professional life in 1975 studying Biology at the Aristotelian University of Thessaloniki Greece and continued my Graduate Studies in the field of Clinical lab and Laboratory supervision in the USA, University of Pennsylvania and Temple university in the city of brotherly love Philadelphia. My first professional exposure started in the Clinical Chemistry lab of the University of Pennsylvania Hospital and at Microbiology lab of Children's Hospital of Philadelphia. My return to Cyprus in 1985 marked the founding and operating my own Clinical lab. In the following years I served the Board of our Association, and I am currently the President. I have been appointed as a member of the registry of the Board for Clinical laboratories in Cyprus and as President of the same Board.

In your professional career, you have served in many leading roles both in your country and internationally. What was your motivation?

To Serve our Profession with dignity to help quality improvement of our service and to assure patients safety.

Could you share your way in biochemistry? Why did you choose this field? What do you like about your current job? Do you think that you chose the right job for you? If you have another chance?

My career path through this Profession was exciting, tempting, serving and ongoing learning experience. I am pretty sure this is the right "Job" for me and if I were to have the chance to choose again, I would repeat the same "Mistake"!

What would be your advice to young scientists who wish to pursue their career in laboratory medicine?

Love this Profession first! Be Dedicated! Never stop Learning Searching and Innovating!

Do you have any hobbies? What are the things outside of your work that you are passionate about? How do you like to spend your free time?

Dancing and Soccer!



NEWS FROM EFLM FUNCTIONAL UNITS

Open call for the EFLM LabX offerers!

Reported by Tara Rolić, Member of the EFLM Task Group LabX

The EFLM LabX program facilitates practical training in different fields within Laboratory Medicine for specialists/trainees seeking training opportunities outside their own country. The EFLM LabX website contains a searchable database of medical laboratories, which are ready to offer additional practical education and training and/or research opportunities in laboratory medicine. The aims of the programme are to share experience and knowledge between medical laboratory specialists across Europe and allow specialists/trainee to achieve higher levels of expertise in specific areas of laboratory diagnostics. The EFLM LabX programme provides the opportunity for laboratories offering a practice to identify motivated and talented individuals to become part of their research and scientific team. If you are interested in applying as an offerer of laboratory practice please visit [Lab X platform guide](#).

UPDATES ON EFLM PUBLICATIONS

Biological variation of serum iron from the European biological variation study (EuBIVAS)

Reported by Tara Rolic, member of the EFLM Communication Committee

Carobene A, Aarsand AK, Coskun A, Diaz-Garzon J, Locatelli M, Fernandez-Calle P et al.
Clin Chem Lab Med 2022;
Available from: <https://doi.org/10.1515/cclm-2022-1091>

Trafficking and metabolism of iron (Fe) have been studied carefully due to intricate regulatory mechanisms. Large within-day variation is observed in Fe concentrations. Biological variation (BV) data for serum Fe derived from European Biological Variation Study (EuBIVAS) are presented in this publication: six EU laboratories enrolled 91 healthy volunteers (38 males, 43 fertile/pre-menopausal and 10 post-menopausal females), serum samples were obtained weekly for ten consecutive weeks and measured by the ferrozine principal method (Siemens analyzer and reagent). The within-subject BV (CV_i [95% CI]) estimates from males and post-menopausal

females were similar: 24.9% (23.2–27.2), and 25.6% (22.4–30.1), respectively. However, the CV_i for fertile-age females was significantly higher comparing it with males and post-menopausal females. Between-subject (BV (CV_g [95% CI]) was also observed: 19.1% (14.5–26.0), 35.3% (27.5–46.9) and 29.2% (18.7–57.3) for males, females < 50 years old and females > 50 years old, respectively. The APS and RCV (based on CV_a estimated from duplicate analysis of study samples) were calculated using mean values and BV obtained from males. Carobene et al., in this study, confirmed the high within- and between-individual variability of Fe, highlighting its limited clinical value. In suspecting iron deficient anemia, Fe should not be measured as a test of the first level. The presented EuBIVAS study provides updated BV data and can be used as an aid in setting APS/BV for Fe.



BIOLOGICAL VARIATION OF SERUM

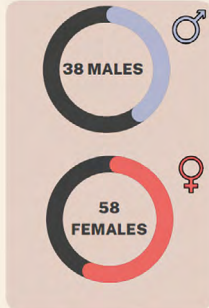
Iron



from the European biological variation study (EuBIVAS)

<https://doi.org/10.1515/cclm-2022-1091>
CCLM

Carobene A. et al. on behalf of the European Federation of Clinical Chemistry and Laboratory Medicine Working Group on Biological Variation



Iron $\mu\text{mol/L}$	Mean value (95 % CI)	CV _A (95 % CI)	CV _I (95 % CI)	CV _G (95 % CI)	RCV, %
All subjects	16.3 (16.0 - 16.7)	1.9 (1.8 - 2.0)	28 (26.7 - 29.6)		
Males	17.9 (17.5 - 18.4)		24.9 (23.2 - 27.2)	19.1 (14.5 - 26.0)	-43.5 / +76.9
Females < 50Y	15.5 (14.9 - 16.0)		38.3 (35.6 - 41.4)	35.3 (27.5 - 46.9)	-57.7 / +136.1
Females > 50Y	15.2 (14.3 - 16.0)		25.6 (22.4 - 30.1)	29.2 (18.7 - 57.3)	-44.0 / +78.5

CV_A=analytical coefficient of variation, CV_I=within-subject, CV_G=between-subject, CI=confidence interval, RCV=reference change value

Clear difference between Fe concentrations in males and fertile females, as well as between fertile and post-menopausal women.

Iron should not be measured as single test in iron deficiency anemia.

INFOGRAPHICS BY TARA ROLIC, EFLM CC

The European Register of Specialists in Clinical Chemistry and Laboratory Medicine: code of conduct, version 3 - 2023

EuSpLM

EuRegister



EUROPEAN FEDERATION OF CLINICAL CHEMISTRY AND LABORATORY MEDICINE

Queralto J, Brady J, Carobene A, Homšak E & Wieringa G

<https://doi.org/10.1515/cclm-2023-0031>

Clin Chem Lab Med



GUIDELINES & RECOMMENDATIONS

EuSpLM ethical responsibility:

Evidence/assurance in planning a new service:



NEW TEST DOES NOT HARM



initiative in harmonization & standardization of preanalytical, analytical and postanalytical phases

ensuring more consistent clinical decision making with utilization of demand management



respect for patient confidentiality religious/ethnic beliefs and informed consent to test

KNOWLEDGE BASED INTERPRETATION AND PRESENTATION OF RESULTS

respect patient autonomy in the response to untoward results from analytical phase

COLLABORATION WITH HEALTHCARE PROVIDERS TO ENSURE CONSISTENT APP OF HIGH STANDARDS OF CLINICAL CARE



the need for more external quality schemes and ethics-based QI

duty of candour to disclose and respond to error in TTP

INFOGRAPHICS BY TARA ROLIC, EFLM CC





UPDATES ON EFLM PUBLICATIONS

The European Register of Specialists in Clinical Chemistry and Laboratory Medicine: code of conduct, version 3 - 2023

Reported by Gilbert Wieringa, co-author of the EFLM publication

Queralto J, Brady J, Carobene A, Homšak E, Wieringa G
Clin Chem Lab Med 2023; Available from: <https://doi.org/10.1515/cclm-2023-0031>

Ethical dilemmas occur when an issue challenges individual and societal values. They are characterised by the need to make a decision when faced with choice of more than one action for which a personally held standard or value may be compromised. Whilst international guidance and consensus opinions may be available their voluntary nature reflect different perspectives on ethical conduct. This is of relevance when considering and comparing possible responses to case studies across Europe where nation-based values and legislation may sometimes supplant guidance and consensus. It is of particular relevance in healthcare given the internationally transient nature of a work force faced with differing approaches to service provision. Specialists in Laboratory Medicine may not have direct contact with patients but they have a duty to support the safety of patients and their carers. Whilst version 2 focussed on individual professional conduct version 3 focusses on their ethical expectations from point of planning to point of care with particular reference to:

- The need for evidence when planning a new service, and assurance that a new test does not do harm
- Respect for patient confidentiality, their religious/ethnic beliefs, the need for informed consent to test, and agreement on retrospective use of samples as part of governance envelopes

in the pre-analytical phase

Respect for patient autonomy in the response to untoward results generated in the analytical phase

- Disclosure of, and response to error
- Supporting the safety of patients in the post-analytical phase through knowledge-based interpretation and presentation of results
- The need for harmonisation and standardisation of the pre-analytical, analytical and post-analytical phases to ensure more consistent clinical decision making, and utilisation of demand management to ensure more equitable access to scarce resources
- Working with emerging healthcare providers beyond the laboratory to ensure consistent application of high standards of clinical care, and beyond the laboratory at the point of care to ensure that people, patients and healthcare professionals have safe, equitable, valuable and informed access to services that make best use of scarce resources

In setting out examples of ethical challenges before, during and after analysis of a sample, this paper highlights the specialist's responsibility for ensuring that people, patients and healthcare professionals have safe, equitable, valuable and informed access to services that make best use of scarce resources. The emphasis is on leadership opportunities to contribute to recognising issues before they occur and resolving issues as they occur.

UPDATES ON EFLM PUBLICATIONS

Within- and between-subject biological variation data for serum zinc, copper and selenium obtained from 68 apparently healthy Turkish subjects

Reported by Anamarija Rade, member of the EFLM Task Group Young Scientists

Coskun A, Carobene A, Aarsand AK, Aksungar FB, Serteser M, Sandberg S et al., European Federation of Clinical Chemistry and Laboratory Medicine Working Group on Biological Variation and Task Group for the Biological Variation Database
Clin Chem Lab Med 2021;

Available from: <https://doi.org/10.1515/cclm-2021-0886>

Trace elements (TrEL) are nutritionally essential components in maintaining health and preventing diseases. To ensure the safe clinical application of analytical measurement of TrELs biological variation (BV) data is required. This study aimed to estimate BV, reference change value (RCV) and index of individuality (II) for copper (Cu), zinc (Zn) and selenium (Se). Serum samples from 68 healthy subjects (36 female and 32 male) were

obtained weekly for 10 weeks and measured with inductively-coupled plasma mass spectrometry (ICP-MS). Outlier and variance homogeneity analyses were performed followed by CV-ANOVA (Røraas method) to determine BV and analytical variation estimates with 95% CI and the associated RCV and II. The within-subject BV (CV_I [95% CI]) estimates were similar for both males and females: 8.8% (8.2–9.3), 7.8% (7.3–8.3) and 7.7% (7.2–8.2) for Zn, Cu and Se, respectively. Between-subject

BV (CV_G [95% CI]) was 8.3% (6.9-10.2), 14.7% (12.5-17.8) and 12.3% (10.3-14.8) for Zn, Cu and Se, respectively. Results for RCV (% decrease; increase) were -19.1; 23.6, -17.2; 20.7, -17.0; 20.5) for Zn, Cu and Se, respectively. Calculated IIs were for Zn 1.06, Cu 0.53 and Se 0.63. This study provides updated BV data for Zn, Cu and Se with marked individuality for Cu and Se for which population-based reference intervals should not be used for interpreting patient results.

WITHIN- AND BETWEEN-SUBJECT BIOLOGICAL VARIATION DATA FOR SERUM ZINC, COPPER AND SELENIUM OBTAINED FROM 68 APPARENTLY HEALTHY TURKISH SUBJECTS

	Mean concentration (µmol/L) (95% CI)	CV _I (95% CI)	CV _G (95% CI)	II	RCV (%)		Age
Zn	13.9 (13.9-14.1)	8.8 (8.2-9.3)	8.3 (6.9-10.2)	1.06	-19.1;23.6	♂ 32	29.5 (19-50)
Cu	15.2 (15.1-15.4)	7.8 (7.3-8.3)	14.7 (12.5-17.8)	0.53	-17.2;20.7	♀ 36	23 (18-51)
Se	0.96 (0.96-0.97)	7.7 (7.2-8.2)	12.3 (10.3-14.8)	0.63	-17.0;20.5		

CV_I=within-subject; CV_G=between-subject; II=index of individuality; RCV=reference change value



Coşkun A, Carobene A, Aarsand AK, Aksungar FB, Serteser M, Sandberg S, et al, on behalf of the EFLM WG-BV and TG-BVD
<https://doi.org/10.1515/cclm-2021-0886>
 Clin Chem Lab Med 2021



INFOGRAPHIC BY TARA ROLIC & ANAMARIJA RADE EFLM TG-YS

UPDATES ON EFLM PUBLICATIONS

Recommendation for the design of stability studies on clinical specimens

Reported by Anamarija Rade, EFLM Task Group Young Scientists

Gomez-Rioja R, Von Meyer A, Cornes M, Costelloe S, Vermeersch P, Simundic A, Nybo M, Baird G S, Kristensen G, Cadamuro J. Clin Chem Lab Med 2023 Available from: <https://doi.org/10.1515/cclm-2023-0221>

The stability of an analyte in a specimen or a sample can be defined as the preservation of its physicochemical properties over time. Although sample stability is a fundamental aspect of the ability of laboratories to deliver high quality results, evaluation of the stability limit is not an explicit regulatory requirement for manufacturers of in vitro diagnostic devices. In 2019, EFLM Working Group Preanalytical Phase (WG-PRE) published a "Checklist for REporting Stability Studies" (CRESS) which does not, however, include guidance on how to design a stability study or assess the results. The aim of this recommendation is to focus on how to design studies for those specimens most frequently analysed in clinical laboratories (i.e. blood and urine).

Recommendations

Stability conditions

Use a "Check one set of variables at a time" design, based on studying the effect of time on the stability of analytes in samples collected, processed, and stored under a fixed set of stability conditions.

The number of stability conditions and the time periods to be studied should be defined in accordance with locally common procedures for sample collection, processing, transport, and storage.



Recommendation for the design of stability studies on clinical specimen

Gomez-Rioja R, Von Meyer A, Cornes M, Costelloe S, Vermeersch P, Simundic A, Nybo M, Baird G, Kristensen G, Cadamuro J, on behalf of the EFLM WG-PRE
Clin Chem Lab Med 2023 <https://doi.org/10.1515/cclm-2023-0221>



Stability conditions

- "Check one set of variables at a time" - study effect of time on the stability of analytes under a fixed set of stability conditions
- The number of stability conditions and the time periods should be defined in accordance with locally common procedures for sample collection, processing, transport, and storage

Patient/sample selection

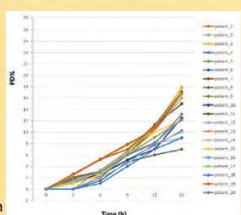
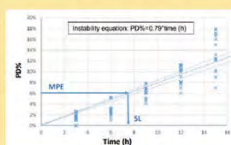
- Samples for stability studies should be obtained and stored under ideal routine working conditions prior to analysis
- To avoid manipulation, the use of distinct primary tubes for each storage duration that is to be investigated, is recommended
- Samples from patients are preferable, as they reflect the concentrations of interest of the analytes better than those from healthy subjects

Experimental design

- If there is evidence of a reference longterm stability method, like deep freezing, it is possible to choose an isochronous design (measuring all samples at the end of the study in one batch)
- Studies must be accompanied by strict internal quality control and bias correction
- Measurements should be performed at least in duplicate
- Fixed time points, and at least five uniform distributed storage time points are required to establish a valid instability equation

Study evaluation

- Define outliers by high coefficient of variation in replicate measurements
- Express loss of stability as the relative difference between the baseline sample value and each successive test sample value in percentage (Percentage difference, PD%)
- Make adjustment of the average global instability equation by regression analysis using least-squares adjustment without an interception coefficient t (Regression through the origin). If a non-linear fit does not substantially improve goodness-of-fit, the first degree equation is preferred
- Investigate Inter-individual differences by graphically comparing the individual instability equations
- A hypothesis test, usually a t-test, is necessary to reasonably ensure the existence of a loss of stability. Small instability effects may require studies with larger sample sizes or extended storage times
- Hypothesis test and goodness-of-fit must be taken into account when interpreting the results



Patient/sample selection

Samples for stability studies should be obtained and stored under ideal routine working conditions prior to analysis. To avoid manipulation, the use of distinct primary tubes for each storage duration that is to be investigated, is recommended. Samples from patients are preferable, as they reflect the concentrations of interest of the analytes better than those from healthy subjects.

Experimental design

If there is evidence of a reference longterm stability method, like deep freezing, it is possible to choose an isochronous design (measuring all samples at the end of the study in one batch) to limit the effect of analytical variation between runs. Stability studies must be accompanied by strict internal quality control and bias correction to minimize the potential impact of analytical error. Measurements should be performed at least in duplicate to limit the influence of analytical random error. The mean of the results of replicate measurements is considered the best estimate of the true value.

Fixed time points for all subjects could be used. At least five uniform distributed storage time points are required to establish a valid instability equation.

Study evaluation

The definition of outliers should be based on high coefficient of variation in replicate measurements.

The loss of stability should be expressed as the relative difference between the baseline sample value and each successive test sample value in percentage (Percentage difference, PD%).

Adjustment of the average global instability equation could be made by regression analysis using least-squares adjustment without an interception coefficient (Regression through the origin). If a non-linear fit does not substantially improve goodness-of-fit, the first degree equation is preferred for its easy transferability.

Inter-individual differences should be investigated by graphically comparing the individual instability equations.

A hypothesis test, usually a t-test, is necessary to reasonably ensure the existence of a loss of stability. Small instability effects may require studies with larger sample sizes or extended storage times.

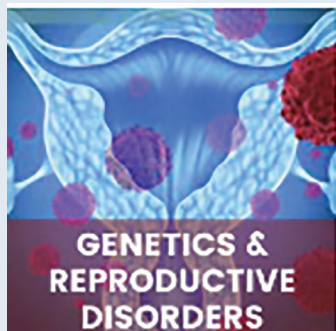
Hypothesis test and goodness-of-fit must be taken into account when interpreting the results.

PAST EFLM EVENTS

Past EFLM webinars

Reported by Aleš Kvasnička, Member of the EFLM Communication Committee

The EFLM e-Learning platform started in 2023 with interesting webinars for the EFLM Academy members. If you missed one of these amazing webinars, we strongly recommend you visit the [EFLM eLearning platform](#) where you can access the recordings of these webinars on-demand. If you are not an EFLM Academy member sign up [here](#) (webinars are available only for EFLM Academy members).



During April and May 2023 many different topics in laboratory medicine in webinars were presented. First webinar named: Applied genetic methods in reproductive disorder by Mariam Chipashvili (Georgia) explained the methodology of genetics on the diagnosis and evaluation of reproductive disorders. Next interesting webinar: The future of laboratory lies beyond its wall by Jane Cadamuro (Austria) enriched the listeners about the importance of the extranalytical phases on the overall laboratory quality, how refocusing on these phases could make our profession more medical and basics about artificial intelligence, demand management and integrated diagnostics. In the webinar: The Clinical Utility of Medical Tests by Patrick Bossuyt (Netherlands) the participants learned to explain what clinical utility is, how clinical utility can be evaluated and to describe the link between clinical performance and clinical utility. Next webinar titled: Cushing syndrome and its biological work up by Damien Gruson (Belgium) focused on understanding the Cushing syndrome and its clinical impact, presenting the tests that could be relevant for diagnosis and monitoring and discussing the confounding factors around laboratory tests.

UPCOMING EFLM EVENTS

5th Symposium CELME 2023. Analytical Performance Specifications (APS): moving from models to practical recommendations

Reported by Silvia Cattaneo, EFLM Office

Do you know CELME? CELME is a biennial Symposium jointly organized by EFLM and the Czech Society of Clinical Biochemistry and takes place in Prague in the historical venue of the Carolinum Charles University. The CELME Symposium is the place where to share the latest innovative thinking in the delivery of the best laboratory medicine activities and to learn from expert innovators presenting new ways of solving financial, quality and organizational problems of laboratories. The 2023 edition is dedicated to Analytical Performance Specifications and the aim of the conference is to go through and discuss the three different models agreed by the Milan 2014 EFLM Strategic Conference to set Analytical Performance Specifications for the medical laboratory and to give practical examples on how this can be done. Symposium Chairs are: Prof. Sverre Sandberg, Prof. Mauro Panteghini and Prof. Tomáš Zima. [Click here to access the detailed scientific programme](#) There is a limited number of seats since organizers can only accommodate 120 participants, therefore those interested are invited to arrange the on-line registrations as soon as possible. Further information at: <http://celme2023.cz>

Joint organized event:

CZECH SOCIETY OF CLINICAL BIOCHEMISTRY

EFLM
EUROPEAN FEDERATION OF CLINICAL CHEMISTRY AND LABORATORY MEDICINE

Under Auspices:

IFCC
International Federation of Clinical Chemistry and Laboratory Medicine

CELME 2023

5th Symposium

CUTTING EDGE OF LABORATORY MEDICINE IN EUROPE

ANALYTICAL PERFORMANCE SPECIFICATIONS:

MOVING FROM MODELS TO PRACTICAL RECOMMENDATIONS

Prague, October 12–13, 2023



Forthcoming EFLM webinars

Reported by Aleš Kvasnička, Member of the EFLM Communication Committee

Do not miss excellent forthcoming webinars, free and available on demand for EFLM Academy members at the [EFLM e-learning platform](#)!



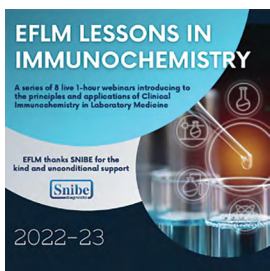
Machine learning based clinical decision support using laboratory data

Date: 13th June 2023 at 18:00 CET time



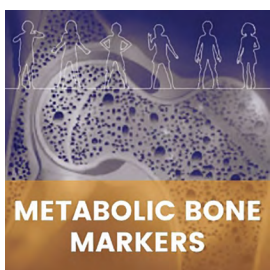
Maintaining Quality with Digital Pathology

Date: 20th June 2023 at 18:00 CET time



EFLM Lessons in Immunochemistry - Anemia

Date: 27th June 2023 at 16:00 CET time



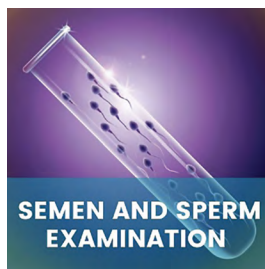
The use of metabolic bone markers in childhood

Date: 11th July 2023 at 18:00 CET time



Digital Transformation: What to do and How to do

Date: 12th September 2023 at 18:00 CET time



Semen and sperm examination as a tool to investigate the man – validation of new methods

Date: 19th September 2023 at 18:00 CET time



EFLM Lessons in Immunochemistry - Hepatic fibrosis - the role of laboratory biomarkers in diagnosis and monitoring

Date: 26th September 2023 at 16:00 CET time



Current concepts for early diagnosis of malignant disease

Date: 10th October 2023 at 18:00 CET time



Nutrition and biochemistry

Date: 24th October 2023 at 18:00 CET time



The diagnostic abilities of POC instruments

Date: 7th November 2023 at 18:00 CET time

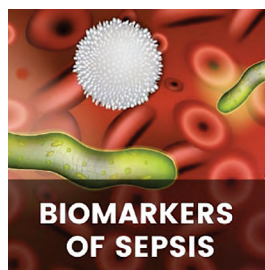


Implementation of sustainable practices in medical laboratories switching Clinical Laboratories to Green Labs

Date: 28th November 2023 at 18:00 CET time



EFLM Lessons in Immunochemistry - Coronary Artery Disease - Predicting the development of coronary artery disease in apparently healthy individuals - the role of Lp (a)
Date: 6th December 2023 at 16:00 CET time



Biomarkers of sepsis: procalcitonin and more
Date: 13th December 2023 at 18:00 CET time

NEWS FROM EFLM NATIONAL SOCIETIES

XX Conference of the Scientific Committee of the Spanish Society of Laboratory Medicine (SEQCML)

SEQC^{ML}

Sociedad Española de Medicina de Laboratorio

At the XX Conference of the Scientific Committee of the Spanish Society of Laboratory Medicine (SEQC^{ML}), which were held in person from

March 30 to 31 Clinical Laboratory professionals update their knowledge on sepsis and key determinations for the study of primary and secondary hemostasis.

- The microbiology laboratory is crucial to identifying the etiology and focal point of the infection causing sepsis, with the isolation of the pathogen allowing the establishment of the most appropriate treatment in each situation.
- The emergency laboratory plays a key role in guiding the diagnosis of sepsis, and thus the ability to take the necessary samples so that the microbiology laboratory can isolate the pathogen.
- The study of hemostasis in the Clinical Laboratory is one of the basic pillars of hematology. It includes the study of primary hemostasis, more focused on emergency situations for the patient, and secondary hemostasis, which covers a wide group of pathologies.

With the aim of updating knowledge and being able to put into daily practice the latest developments on sepsis and primary and secondary hemostasis in the Clinical Laboratory, the Spanish Society of Laboratory Medicine (SEQC^{ML}) organized the courses "The laboratory in the diagnosis and prognosis of sepsis: view from the microbiology and biochemistry laboratory" and "Hemostasis and the Clinical Laboratory"; within the framework of the XX Conference of the Scientific Committee, which was held in person on March 30 and 31 in Madrid.

The "Third International Consensus Document for the Definition of Sepsis and Septic Shock" defines sepsis as life-threatening organ dysfunction caused by an exaggerated host response to infection. Sepsis is one of the leading causes of mortality in hospitals around the world: 11 million people die each year from sepsis. In our country, 17,000 people lose their lives each year from this condition.

Sepsis is a time-dependent clinical factor. Its early detection and treatment can reduce mortality by up to 50%, which is why it is and should be treated as an emergency. Fortunately, in recent years there has been considerable development in the arsenal of tools for the diagnosis and prognosis of patients with infection and sepsis. This was noted by Dr. Alba Cebollero Agustí, coordinator of the course "The laboratory in the diagnosis and prognosis of sepsis: view from the microbiology and biochemistry laboratory" and president of the Microbiology Commission of the SEQC^{ML}, who stressed that the course was designed to be of interest to all Clinical Laboratory professionals. "The objective of the course is to renew concepts and knowledge and to be able to put into daily practice the latest news on this serious condition, useful for all those professionals who actively participate in the care process," she explained.

In the words of Dr. Cebollero Agustí, the microbiology laboratory is crucial to identifying the etiology and focal point of the infection with the isolation of the pathogen, which allows for the establishment of the most appropriate treatment in each situation. Likewise, the emergency laboratory must be equipped with the necessary biomarkers for the clinical assessment of a patient with a suspected infection. More specifically, Dr. Cebollero Agustí highlighted the crucial role of the emergency laboratory "to guide the diagnosis of sepsis, and thus the ability to take the necessary samples, so that the microbiology laboratory can carry out the isolation of the pathogen."

It is important that the emergency and microbiology laboratories are coordinated with each other, but also with the emergency services and ICU of the hospital. As Dr. Cebollero Agustí asserted, "for the diagnosis of the condition to be as early as possible, it is essential that the centers have a Sepsis Code, and work on a homogenization between communities, as well as on an electronic data recording system to collect information on all the patients for whom the Sepsis Code has been activated". This information can be used to analyze responses and plan improvements, as she commented.



Hemostasis and the Clinical Laboratory

Beyond sepsis, the XX Conference of the Scientific Committee of the SEQC^{ML} delved into the field of hemostasis in the Clinical Laboratory, one of the basic pillars of hematology, through the course "Hemostasis and the Clinical Laboratory". Through three theoretical and practical sessions, aspects directly related to specific laboratory areas were discussed: primary hemostasis: platelets and thromboelastogram, and secondary hemostasis; indications for molecular and genetic studies; and monitoring of oral anticoagulants. Hemostasis is a physiological process that maintains the homeostasis of blood flow in the vessels (balance between coagulation and fibrinolysis). According to



CHANGING OF THE GUARD IN EFLM NATIONAL SOCIETIES

Reported by Silvia Cattaneo, EFLM Office

A warm welcome to the new incoming National Society President.

Swedish Society for Clinical Chemistry

Inga Zelvyté (Dept. of Laboratory Medicine, Region Jönköpings län) is the new President of the Swedish Society for Clinical Chemistry, replacing Mats Ohlson, who remains the EFLM National Representative for SFKK.

Dr. Maite Serrando Querol, course coordinator and president of the Hematological Biology Commission of the SEQC^{ML}, hemostasis is basically made up of two complex processes: "primary hemostasis, the first stage that controls the formation of a hemostatic plug through platelet aggregation (limitation of bleeding in the event of the appearance of a vascular breach); and secondary hemostasis, which consolidates the formation of the primary plug by triggering the activation cascade of coagulation factors, obtaining fibrin". Coagulation is essential to effectively control and interrupt the appearance of bleeding, especially from the large vessels. The main pathologies related to hemostasis derive from poor control or loss of equilibrium between clot formation and destruction, such as von Willebrand disease associated with a disorder in platelet aggregation, or diseases with a risk of bleeding, especially those caused by factor VIII and IX deficiency (Hemophilia A and B), among others. According to Dr. Serrando Querol, both primary and secondary hemostasis are studied in the Clinical Laboratory. "In hemostasis laboratories, whether emergency or routine, we have different profiles that allow us to functionally analyze the intrinsic and extrinsic coagulation pathways. We also have determinations that provide us with information on the patient's ability to manufacture a primary clot (thromboelastogram)", she explained. The course "Hemostasis and the Clinical Laboratory" was intended to publicize and describe the determinations that allow for the study of primary and secondary hemostasis in the laboratory. In addition, to know the indication for confirmation studies of the different pathological alterations of the basic profiles of primary or secondary hemostasis, as well as disseminating the high specificity diagnostic confirmation techniques in the genetic and molecular diagnosis of this pathological group. "Other key topics were to elaborate and explain about the use of algorithms in the hemostasis laboratory, in addition to investigating situations of high vital risk or emergency in hemostasis", summarized Dr. Serrando Querol.

Sociedad Española de Medicina de Laboratorio (SEQC^{ML})

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THE YOUNG SCIENTIST'S CORNER WorldLab-EuroMedLab in Rome in a view of the Young Scientists

Reported by the Tara Rolić and Aleš Kvasnička, EFLM Task Group
Young Scientist members

In May 2023, the 25th International Congress of Clinical Chemistry and Laboratory Medicine (IFCC) and European Congress of Clinical Chemistry and Laboratory Medicine (EFLM) joint with 55th Congress of the Italian Society of Clinical Biochemistry and Clinical Molecular Biology (SIBioC) was held in beautiful city of Rome, Italy. It was a great pleasure to attend this amazing event together with more than 11000 participants from all over the world. The largest professional and scientific event in laboratory medicine showed importance of profession with four days of excellent symposiums. Scientific program covered a wide topic from all fields of laboratory medicine, providing cutting-edge science and breakthrough in technologies. Prominent speakers in plenary lectures presented cancer metabolism, using big data analysis for harmonization of reference intervals, advantages in NMR-spectroscopy in discovering new biomarkers and diagnostic approach to dementia. For a young participant this was an opportunity to listen famous scientists and to get interested in a new field of laboratory medicine. Speakers at the symposiums lectures were talked about inappropriate use of lab resources, lab role in public health, preanalytical mysteries and interferences in lab testing but also about the harmonization of laboratory medicine, precision medicine, quality in lab, next generation of laboratory information system and presented hot topic in laboratory medicine: artificial intelligence applications and machine learning. Some specific fields of laboratory medicine were represented: applications of microRNA, digital morphology in hematology, COVID-19, sepsis, autoimmune and neuroimmune diseases, bone as an endocrine organ and bone turnover marker, traumatic brain injury, latest advances in diabetes, monoclonal gammopathies, liver disease biomarkers, lab role in kidney transplantation or prenatal testing. Indeed, a fruitful scientific program. At the exhibiting area, laboratory medicine partners, IVD industries showed latest innovation in laboratory testing and provided especially for a young scientist a chance to get them and their work better. Before the official opening ceremony young scientist had a special honour to participate at the 2nd Young Scientist Forum organized by the IFCC Task Force Young Scientist. The forum

was opportunity for YS to presented their own comprehensive professional and scientific work. They are a truly inspiration to all and the future of laboratory medicine. The forum was available in hybrid form, so YS not presented in person could follow forum on-line. In fact, sessions during the whole congress were available online, and for the attendees from low- and middle-income countries it was free. Additionally, the recording is available for the participants on demand. Such an outstanding success for the organizers!

On May 24th Young Scientist Session chaired by Barnali Das and Kamil Taha Ucar give another opportunity to YS to present they dedicated work. Aleksei Tikhonov was talking about circulating cancer biomarkers and where are we now in cancer diagnosis, Claudia Imperiali presented immature platelet fractions as an early inflammatory biomarker along with her work in cardiovascular diseases, Marie Lenski spoke about win-win collaboration in communication between lab and clinicians and Udara Senarathne presented her work in setting reference intervals for analytes using statistics and algorithms. They give wind at the wings for all YS who were listening their excellent presentations.

On the way of the great impact of the first series of podcast with short interviews, second edition was recorded at the EFLM booth. Realization was possible with unconditional support of the EFLM Office and Ms. Silvia Cattaneo and Ms. Silvia Terragini, as well as EFLM Executive Board and interviews. Prof. Tomris Ozben gave us an interview where she summarized the efforts and impact of EFLM and the importance of this year's congress in Rome. Marie Lenski interviewed Judit Gonda who shared her experience in laboratory exchange program as applicant, and Evgenija Homšak interviewed Damien Gruson, a Head of UCL Saint-Luc laboratory in Brussels, Belgium, a provider of LabX practice. Additionally, CC members interviewed Janne

Cadamuro who enriched us in his views on the impact of AI on the laboratory medicine profession. Special privilege was to talk with Prof. Abdurrahman Coskun, the winner of the 2023 EFLM Award for Achievements in Advancing Laboratory Medicine in Europe. Many others outstanding laboratory medicine professionals were interviewed, so do not miss these interviews on EFLM social media channels.

All attendees had a chance to visit amazing EFLM booth designed with posters made by members of the Communication Committee and YS in order to promote EFLM top activities like EFLM Academy, LabX, Green Labs, CPECS®, recent EFLM WG publications... At EFLM booth visitors could ask EFLM officers whatever they are interested in. The CC organized social media competition and gave a prize to winners who promoted EFLM at social media. Moreover, 16 EFLM bursaries was awarded to the YS at a special ceremony at the booth. Congratulations to every one of them!

A brilliant international event presented the present and the future of laboratory medicine, built a relation between the generations, encouraged connections and collaboration, primely for the YS who agreed about joint projects and contributions in voluntary work in professional associations. Special thank you goes to SIBioC and Giulia Sancesario who organized a magnificent social event for almost 100 YS who had wonderful time to socialize, network and share they experiences.

Closing ceremony presenters highlighted successful event and presented next WorldLab in Dubai, 2024 and EuroMedLab in Brussels, 2025. These two events will be for sure a wonderful opportunity to meet again and share a new perspective. A fountain of creativity and talents never stops flowing.

We are so looking forward and cannot wait our next meeting!



Young Scientist in social event organized by SIBioC and Giulia Sancesario



EFLM Communication Committee members with EFLM Office (from left to the right: Silvia Cattaneo, Aleš Kvasnička, Aleksei Tikhonov, Tara Rolić, Daniel Rajdl, Silvia Terragni)



2nd Young Scientist Forum participants

We are already in June. Lots of congresses are taking place all over the world. People at last meet with old and new colleagues and friends and participate with a new intensity, with a new joy. We all met at Rome for the WorldLab-EuroMedLab: lots of people (more than ever) from all over the world attended the meeting and strolled in the Eternal City's streets. The exhibition was immense and the Scientific program met everyone's expectations. Music from all over the world can be heard in this issue too with "testimonials", testimonials from all over the world about the use of a learning software. It seems very successful! Why don't you listen to all these people and use it too? I think I will try. AI is the hot topic nowadays. We have just finished the Hellenic Cytometry Congress and AI has been the center of our discussions. Go through this issue dear friends and go on with communication with our colleagues from all over the world at Rome, go on to enjoy one another's company, go on to be taught and to teach! We had a great time in Rome! Let's enjoy the multicultural IFCC family!

President Message

Greetings to everyone in the IFCC and EFLM family! We met at the IFCC-EFLM WorldLab/EuroMedLab Congress in the fabulous city of Rome and where thousands of delegates, corporate representatives, exhibitors and visitors attended this very important and popular event. As mentioned in my previous message, the XXV IFCC-EFLM WORLDLAB-EUROMEDLAB CONGRESS set the all-time record in attendance with over 9000 people that were in Rome during the 5 day event. The IFCC Organization, in collaboration with EFLM, SIBioC, and MZ Events, was also delighted to present an exciting new prospect for laboratory professionals and scientists. **Those unable to travel to Rome could still participate in the Roma 2023 WorldLab/EuroMedLab Congress virtually**, thus accessing the remarkable scientific program that has been meticulously crafted. Registered participants had the opportunity to attend all symposia virtually from May 21st to May 25th.

To provide equal access to laboratory professionals and young scientists/trainees from around the world, **virtual registration for this significant event was 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 was applicable for registration. This initiative ensured inclusivity and widespread participation in the event. It also led 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. 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**. Further information and preliminary programs for these upcoming congresses will be soon available. I was grateful for having had the opportunity to meet many of you in Rome at the end of May. I am certain you relished and were impressed by the exceptional scientific program and the stunning beauty of Rome during the congress.

Khosrow

The Importance of Measurement-Why Key Performance Indicators Matter

Quantification of out-of-lab outcomes such as reduced wait-times, improved experiences, enhanced clinical confidence or mitigated healthcare costs is of the utmost importance. Connection of laboratory driven insights that enable changes in processes to downstream outcomes help ensure those less familiar with laboratory medicine understand its value. To learn more about best practice examples of quantification of key performance indicators, visit www.UnivantsHCE.com

Calendar of EFLM events and events under EFLM auspices

Do not miss the opportunity to have your event listed here.

Apply for EFLM auspices! For more information visit [here](#) or email eflm@eflm.eu

Budapest (HU) 8-10 June 2023

61st Congress of the Hungarian Society of Lab Med

[Click here for information](#)

Leeds (GB), 12-14 June 2023

UKMedLab23

[Click here for information](#)

13 June 2023

EFLM Webinar: Machine learning based clinical decision support using laboratory data

on-line,

[Click here for information](#)



Timisoara (RO), 14-16 June 2023

14th National Conference of the Association of Laboratory Medicine from Romania with international participation

[Click here for information](#)

Paris (FR), 16 June 2023

International Conference on Immunoassay

20 June 2023

EFLM Webinar: Maintaining Quality with Digital Pathology

on-line,

[Click here for information](#)





27 June 2023

EFLM Lessons in Immunochemistry: Lesson n. 6 - ANEMIA
on-line, [Click here for information](#)



11 July 2023

EFLM Webinar: The use of metabolic bone markers in childhood
on-line, [Click here for information](#)



12 September 2023

EFLM Webinar: Digital Transformation: What to do and How to do
on-line, [Click here for information](#)



19 September 2023

EFLM Webinar: Semen and sperm examination as a tool to investigate the man – validation of new methods
on-line, [Click here for information](#)

Hradec Kralove (CZ), 17-19 September 2023

XVI. National Congress of Clinical Biochemistry
[Click here for information](#)

Skiathos (GR), 20-23 September 2023

6th ACTC meeting “Liquid Biopsy and Precision Oncology: where do we stand now”
[Click here for information](#)

Padua (IT), 20 September 2023

THE INTERNATIONAL CONFERENCE OF LABORATORY MEDICINE: 30 YEARS LATER Symposium dedicated to the memory of Professor Angelo Burlina
[Click here for information](#)

Tbilisi (GE), 23 September 2023

Laboratory medicine role in clinical outcome and Challenges of Laboratory Medicine in Georgia



26 September 2023

EFLM Lessons in Immunochemistry: Lesson n. 7 - HEPATIC FIBROSIS: the role of laboratory biomarkers in diagnosis and monitoring
on-line, [Click here for information](#)



10 October 2023

EFLM Webinar: Current concepts for early diagnosis of malignant disease
on-line, [Click here for information](#)

Herceg-Novi, Boka Bay (ME), 27-30 September 2023

BCLF 2023 – 30. Balkan Clinical Laboratory Federation Congress and 2. Montenegrin Congress of Clinical Chemistry and Lab. Medicine
[Click here for information](#)

Prague (CZ), 12-13 October 2023

5th Symposium CELME 2023. Analytical Performance Specifications (APS): moving from models to practical recommendations
EFLM Event [Click here for information](#)



24 October 2023

EFLM Webinar: Nutrition and biochemistry
on-line, [Click here for information](#)

Copenhagen (DK), 25-27 October 2023

7th ESPT International Congress “Precision Medicine and Personalised Health” (ESPT 2023)
[Click here for information](#)



7 November 2023

EFLM Webinar: The diagnostic abilities of POC instruments
on-line, [Click here for information](#)

28 November 2023

EFLM Webinar: Implementation of sustainable practices in medical laboratories switching Clinical Laboratories to Green Labs
on-line, [Click here for information](#)



6 December 2023

EFLM Lessons in Immunochemistry: Lesson n. 8 - CORONARY ARTERY DISEASE predicting the development in apparently healthy individuals: the role of Lp(a)
on-line, [Click here for information](#)

Santorini (GR), 21-24 May 2024

The 10+1 Santorini Conference “Systems medicine and personalised health & therapy” - “The odyssey from hope to practice: Patient first - Keeps Ithaca always in your mind”
[Click here for information](#)



13 December 2023

EFLM Webinar: Biomarkers of sepsis: procalcitonin and more
on-line, [Click here for information](#)

Saint Malo (FR), 13-14 June 2024

9th International Symposium on Critical Care Testing and Blood Gases
[Click here for information](#)

EFLM is proud to announce the launch of the
EFLM CERTIFICATION FOR
GREEN AND SUSTAINABLE LABORATORIES
aimed to implement sustainable practices in medical laboratories



BECOME A *Green Lab*



In line with the European Green Deal, the EFLM Executive Board has established in November 2021 the EFLM Task Force "Green and Sustainable Labs" with the aim that EFLM should lead the way in implementing sustainable practices in clinical and medical laboratories in Europe.



The goal is to transform 15.000 Clinical Laboratories in 49 EFLM member societies in Pan-Europe into a safe and sustainable spaces by decreasing their deleterious environmental impact and implementing efficient everyday actions in laboratories, and taking steps to minimize energy, water, and hazardous chemical use, as well as waste generation without compromising the quality of healthcare.



Good collaboration among the European Union healthcare systems and a common vision for future actions would help to achieve such goals and environment-friendly laboratories.

Prof. Tomris Ozben, EFLM President & TF-GSL Chair



WE ARE NOW READY TO RECEIVE APPLICATIONS FROM MEDICAL LABORATORIES

VISIT: <https://greenlabs.eflm.eu/>

Clinical laboratories worldwide interested in receiving EFLM Green Lab Certification are welcome to apply!