

EUROLABNEWS

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

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Foreword

Reported by Harjit Pal Bhattoa, Editor EFLM EuroLabNews



Greetings to all our readers. After a cherished summer, this October issue of the EuroLabNews gives us a snapshot of all the professional happenings in our field in the past two months. Tara Rolic, member of our dedicated team here at the EFLM Promotion and Publications WG, summarizes the guidelines of the EFLM TF Green Labs, chaired by Tomris Ozben, which lay out the floor plan for achieving a climate-neutral environment. Tara Rolic, in yet another of here capacities, announces the European Lab

Day to be held on the 5th of November. Tara Rolic also announces the Survey of the EFLM TF Chronic Kidney Disease, chaired by Etienne Cavalier. All laboratories are encouraged to submit their respective input by participating in the survey. Tara Rolic also calls our attention to the EFLM Speakers Bureau, where one can find experts, available to deliver lectures and seminars in various fields, at a glance. Kindly also note the deadline of the 15th of January, 2023 in order to submit your applications for the various EFLM awards to be presented at the EuroMedLab 2023 meeting in Rome. Silvia Cattaneo from the EFLM Office announces the honorary membership of our President Tomris Ozben at the Slovakian Society of Clinical Biochemistry. In her regular column, Tomris Ozben has had "Coffee" with Merel van Wijnen, President of the Dutch Society of Clinical Chemistry and Laboratory Medicine, Karel Tomberg, EFLM National Representative of the Estonian Society for Laboratory Medicine, Etienne Cavalier, President of the Royal Belgian Society of Clinical Chemistry, Jennifer Brady, President of the Clinical Biochemists in Ireland and Attila János Miseta, the President of the Hungarian Society. Get a glimpse at their professional and personal achievements in this issue. You can also read the interview with senior EFLM colleague Gilbert Wieringa conducted by Evgenija Homsak, Chair of the EFLM Profession Committee. Past and upcoming webinars have been summarized to keep you abreast with the latest developments in the given fields of Laboratory Medicine. Silvia Terragni from the EFLM Office has advertised a vacancy at the EFLM WG Harmonization, where the application deadline is the 15th of October. Ales Kvasnicka, member of the EFLM C-C, has presented a unique infographic on Measurement uncertaintly for practical use. In news from the EFLM National Societies, the Spanish Society are reporting their latest venture. Under its regular column, the IFCC corner presents global perspectives in Laboratory Medicine. The Calendar of Events lists all major happenings. I wish you a pleasant reading!

Editorial Information ewsletter Editor. Dr. Harjit Pal Bhattoa, Faculty of Medicine, Dep of Laboratory Medicine, University of Debrecen Hungary The EFLM Newsletter is published bi-monthly

o send your news or advertisement for publication or ne newsletter write to: news@eflm.eu



EFLM Executive Board: T. Ozben, AM. Simundic, M. Plebani, S. Jovicic, K. Kohse, P. Fernandez-Calle, D. Vitkus

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MAILS OF PHISHING: ALWAYS BE ON ALERT!

A phishing e-mail message is an effort to steal your personal information. Phishing attacks typically come in the form of fraudulent email messages that appear to have come from a legitimate source, such as, in our case, an EFLM Officer. Phishing emails will usually trick the receiver into divulging personal information or direct request to send money to a specific account.

These attacks are often designed to appear urgent and panic recipients so that they take immediate action. Awareness is the only key to protecting yourself and your private information.

So please be alerted in case you receive <u>unusual</u> <u>message requests</u> from mails that appear to have sent from EFLM Officers.

NEWS FROM EFLM FUNCTIONAL UNITS

EFLM Guidelines for Green and Sustainable Medical Laboratories: a useful tool for all laboratories!

Reported by Tara Rolić, Member of the EFLM WG "Promotion and Publications"

Prof. Tomris Ozben, EFLM President and Chair of the EFLM Task-Force Green Labs, is proud to announce that the EFLM Task-Force Green Labs has reached its first goal by developing the "EFLM Guidelines for Green and Sustainable Medical Laboratories".

The European Green Deal aims at making Europe the world's first climateneutral continent by 2050. Laboratory Medicine should contribute to a sustainable healthcare system ensuring that resources are used efficiently from ecological, social, and economical perspectives, while providing highquality services to patients and physicians.

The mission of the EFLM TASK-FORCE GREEN LABS is to help laboratories in this demanding process.

CLICK HERE TO DISCOVER THE ACTION PLAN OF THE EFLM TF-GREEN LABS



EFLM Task Group "European Lab Day" - SAVE THE DATE: 5 November 2022



Reported by Tara Rolić, Chair of the EFLM TG "European Lab Day"

November 5th is special day for European Laboratory Specialist. With a great pleasure EFLM announces the first **Eu**ropean **Lab Day**! Together, we can make our profession visible and recognizable by opening doors of our laboratories and showing what we do. Interested, but not sure how to participate? Follow EFLM on social media and in web page - find ideas. It is important to show we are **#morethananumber**

NEWS FROM EFLM FUNCTIONAL UNITS

New EFLM Survey organized by the EFLM Task Group "Chronic Kidney Disease"

Reported by Tara Rolić, Member of the EFLM WG "Promotion and Publications"

EFLM survey on the state of the art of creatinine, cystatin C and measurement of the glomerular filtration rate The EFLM Task Group on Chronic Kidney Disease (TG-CKD) has considered important to update and evaluate the evolution of laboratory medicine on the state of the art of creatinine, cystatin C and measurement of the glomerular filtration and has prepared survey to increase the quality of the paper which will developed by the TG.

In 2019, an EFLM survey on the state of the art of creatinine, cystatin C and measurement of the glomerular filtration rate was performed and obtained a large number of replies.

The results were highly interesting, but many participants were in transition from a formula to the other, wanted to change the measurement of creatinine, implement cystatin C, or start measuring iohexol. In addition, there have been some recent changes, like the "race-free" CKD-EPI equation to estimate GFR.

Therefore, the EFLM Task Group on Chronic Kidney Disease has considered important to update and evaluate the evolution of laboratory medicine on these tests over a 3 years period preparing this new survey. This survey will be useful also to increase the quality of the paper which will developed by the EFLM TG-CKD.

The TG-CKD kindly asks you to fill in the survey by October 15, 2022 and thanks in advance for your time and contribution to this work!

EFLM Education & Training Committee and EFLM WG "Congresses & Postgraduate Education": the new EFLM Speaker Bureau!

Reported by Tara Rolić, Member of the EFLM WG "Promotion and Publications"



whether your event is live or virtual, the answer is the EFLM Speakers Bureau! The EFLF WG "Congresses & Postgraduate Education" is pleased to announce the new EFLM <u>Speakers Bureau</u>, a list of outstanding speakers, selected among current or former EFLM officers, indicating the specific expertise for each of them. This list aims to represent a tool for EFLM National Societies when searching for a speaker on a specific topic for National and local scientific events.

EFLM AWARDS

EFLM AWARDS at the EuroMedLab 2023

Reported by Tara Rolić, Member of the EFLM WG "Promotion and Publications"

The EFLM Executive Board is pleased to announce the EFLM Scientific Awards 2023 for the best published papers, as judged by an independent panel of experts, concerning the topic of each award. The Award, consisting of a certificate and a sum of 5,000 Euro each, will be presented at the 25th IFCC-EFLM EuroMedLab Congress in Rome (21-25 May 2023). The Award will be presented to the first author, who is responsible for division of the award among his/her coauthors.

• EFLM Award for <u>Excellence</u> in <u>Outcomes Research in Lab</u> <u>Med</u> - sponsored by Abbott Diagnostics

 EFLM Award for <u>Excellence</u> in <u>Performance Specifications</u> <u>Research</u> - sponsored by Abbott Diagnostics

• EFLM <u>Cardiac Marker Award</u> for remarkable scientific work in the field of cardiovascular diseases - sponsored by HyTest.

Deadline to submit your applications: January 15, 2023

Applications and supporting documents written in English must be submitted electronically to **efim@efim.eu**



EUROPEAN FEDERATION OF CLINICAL CHEMISTRY AND LABORATORY MEDICINE

Abbott

EFLM Award for Excellence in Outcomes Research in Laboratory Medicine

Sponsored by Abbott Diagnostics

EUROPEAN FEDERATION OF CLINICAL CHEMISTRY AND LABORATORY MEDICINE

Abbott

EFLM Award for Excellence in Performance Specifications Research

Sponsored by Abbott Diagnostics





EFLM CARDIAC MARKER AWARD for remarkable scientific work in the field of cardiovascular diseases sponsored by HyTest

EFLM is very pleased of the collaboration with HyTest for this Award through which we intend to achieve wider recognition of the importance of high-quality research in the field of cardiac markers among laboratory professionals in Europe.

EFLM OFFICE INFORMS

Honorary Membership to Prof. Tomris Ozben

Reported by Silvia Cattaneo, EFLM Office

We are happy to inform you that on 2 September 2022, Prof. Tomris Ozben has received the attached notification of the Honorary Membership from the Slovak Society of Clinical Biochemistry (SSCB).

This honorary membership is a very important recognition given by the SSCB to a limited number of persons for the great contributions and public achievements in Laboratory Medicine.

The honorary membership will be presented to Prof. Ozben in October on occasion of the SSCB National Congress in Demanoska where she will take part as the EFLM Executive Board representative to present EFLM activities to the congress participants and to deliver a lecture on the implementation of the sustainable practices in medical laboratories. We thank the SSBC 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.



Slovenská spoločnosť klinickej biochémie Slovak Society of Clinical Biochemistry

Slovenská lekárska spoločnosť, Slovak Medical Association Cukrová 3, 813 22 Bratislava, Slovak Republic

Prof. Tomris Ozben, EuSplM, Ph.D., D.Sc

Akdeniz University Medical Faculty Department of Clinical Biochemistry 070 70 Antalya Turkey

presidenteflm@eflm.eu

Turkey E-mail:ozben@skdeniz.edu.tr.

Dear Professor,

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We are pleased to inform you that the Presidium of the Slovak Medical Society approved the proposal of the Executive Board of the Slovak Society of Clinical Biochemistry (SSCB) a member of the Slovak Medical Association to be granted to you

Honorary membership of the Slovak Society of Clinical Biochemistry.

Honorary membership is an expression of recognition and gratitude for your contribution to the long term developments in laboratory medicine, mutually beneficial professional cooperation and good partnership relations.

We cordially invite you to the XIV. Congress of the Slovak Society of Clinical Biochemistry, at which we would like to present you with Honorary membership of the Society of Clinical Biochemistry. The event will take place on October 9-11., 2022 at Hotel Chopok in Dermänsvskå dollara, Slovakia. It will be our great honour to present this tribute to you personally.

Ing. Ján Balla National representative

Sincerely

Pioronu nora'

M.D. Hedviga Pivovamíková President

> Slovenská lekárska spoločnosť Spoločnosť klinickej biochěmie

Prešov, 2.09.2022



The EFLM Syllabus Course

Reported by Silvia Cattaneo, EFLM Office

The EFLM Syllabus Course is a top quality on-line revision course designed by EFLM to increase the knowledge and exam confidence for postgraduate students (but not limited to...) Browse the below titles and discover why EFLM is so proud of this course...

Module 1: Leadership and management Coordinator: Ana-Maria Šimundić

Module 2: Biostatistics and data analysis Coordinator: Ana-Maria Šimundić

Module 3: Quality management

Coordinators: Mario Plebani, Pilar Fernández Calle, Janne Cadamuro, Dalius Vitkus

Module 4: Analytical and clinical evaluation of laboratory methods Coordinator: Snežana Jovičić

Module 5: Pre-analytical phase Coordinators: Pieter Vermeersch, Zorica Šumarac, Michael Cornes, María Salinas

Module 6: Post-analytical phase Coordinator: Janne Cadamuro

Module 7: Biological variation Coordinator: Pilar Fernández Calle

CLICK HERE TO DISCOVER THE OTHER 36 MODULES

Not yet convinced... Listen to an example of a module - CLICK ON THE IMAGE ...



The access to the EFLM Syllabus Course is an exclusive opportunity for EFLM Academy Members. Join the EFLM Academy: the annual fee is only Eur 15.00! <u>Click here to know more about the EFLM Academy</u>

THE EFLM SYLLABUS COURSE IS MANTAINED THANKS TO THE UNCONDITIONAL SUPPORT OF

Ortho Clinical Diagnostics

Because Every Test Is A Life*

COFFEE WITH THE EFLM PRESIDENT



Dear Readers,

In this edition of the EFLM eNewsletter, in the section "Coffee with the President", I present to you with great pleasure interviews with distinguished Presidents/National Representatives of the EFLM member Societies.

I would like to thank my guests for being available to share their experiences, thoughts and opinions about EFLM, our profession and give the opportunity to the large EFLM audience to get to know them and their society better. We are all very grateful for their substantial contributions to the EFLM and its mission that make EFLM what it is today. I hope you will enjoy reading these interviews with our esteemed colleagues.

Tomris Ozben EFLM President



Coffee with Merel van Wijnen

President of the Dutch Society of Clinical Chemistry and Laboratory Medicine (NVKC)



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 Dutch Society of Clinical Chemistry and Laboratory Medicine (NVKC) was founded on September

20, 1947 by Prof. dr. E.C.H.J. Noyons. It is one of the oldest societies of clinical chemistry in the world! This year we celebrated our 75th anniversary with an in-person conference, our first since the corona pandemic.

Since 2015 the NVKC is an active member of the Dutch Federation of Medical Specialists (FMS). The FMS consists of 32 Dutch societies of medical specialists, and supports members in their profession and speaks with one voice to politicians and society at large. The ambition of the FMS (and of the NVKC) is to provide the best healthcare in the world.

The NVKC has members from several groups of professionals. Around 350 of our members are certified clinical chemists, and our membership is also open to clinical and biomedical scientists with a special interest in clinical chemistry and laboratory medicine. We have approximately 50 studentmembers, trainees, who are starting their career as clinical chemists.

At this time, the NVKC's focus is on offering integrated diagnostics, and this entails co-operation with other medical laboratory and medical imaging disciplines. Also, we seek to optimize the role of the clinical chemist in the wider scope of healthcare. This involves taking an increasingly outward facing position and directing our professional expertise towards achieving efficient healthcare. We do this by paying more attention to providing spot-on diagnostics at the best possible place and time, and placing an increased emphasis on aiding doctors and patients to provide clarity towards patients in the consultation after the test results come in. We foresee a dominant role of artificial intelligence techniques to translate our data to medical information and value to our patients.

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 the Netherlands we have a 4 year (post academic) educational program to obtain accreditation in the NVKC register of clinical chemists. We are proud of this educational program. It results in professional and highly developed specialists in laboratory medicine, who represent and secure the high quality standards of laboratory diagnostics in their organizations. Our specialists are skilled at working with diverse medical specialists and general practitioners. Our curriculum continues to set a high level of professional knowledge about medical tests, quality control, knowledge of metabolic diseases, hematology, endocrinology, molecular biology, clinical chemistry and blood transfusion. In addition, NVKC is developing increased collaboration with other educational programs from adjoining members of the Dutch Federation of Medical Specialists. This will allow trainee members to learn from other disciplines and meet other specialists early in their careers will provide a solid base for future cooperation.

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?

Our specialism has evolved from a laboratory oriented, biochemical profession to biomedical expertise. Nowadays we take a dominant role as trusted advisor, guiding clinicians in their diagnostic approaches and interpreting diagnostic laboratory results to clinicians. In our vision, our profession will gain utmost meaning in health care by integrating different areas of diagnostic expertise. Development of smart algorithms in conjunction with adjacent specialisms will accelerate this movement.

Next to our role as diagnostic guide to clinicians, we believe that we can offer added value to the general public. Increasingly, patients and healthy people have a need to consult us not only about (self)tests but more and more about their health and well-being. A challenging concept, that will lead to more visibility in society and moreover to decision makers.

Of course, our home-base is the laboratory. Well organized and meeting the highest (ISO) standards. Nowadays, pressure on health care in general is high. It is challenging to meet the needs for laboratory staff. Interprofessional lab-cooperation will be one of the remedies to relieve this urgent need.

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?

As a short answer: YES, of course! I am convinced that our young colleagues are ready to adopt, develop and implement the emerging technologies in laboratory medicine. In our

educational program, we stimulate our trainees to become proficient in medical leadership, high end technology and in data science. The upcoming generations of laboratory professionals will lead our specialism the way to this exciting future.

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?

The NVKC relies on the goodwill and hard work of our members who actively contribute to our national and international activities; in the field of science and innovation, laboratory quality, ISO, IVDR and education. Quite some members are very active internationally, and I am personally very proud that they represent us at the international stages. All our accredited and trainee members are automatically members of the EFLM and receive all the news items and correspondence and are therefore familiar with EFLM activities.

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 ongoing and recent activities and initiatives? The way EFLM connects the National Societies, acting as a platform for all European specialists in laboratory medicine, is very important. For example, the IVDR demands good cooperation at a national and international level. Representing and leading the EFLM seems to me like a formidable challenge, especially with all the differences between countries. For that reason, I highly respect the current president, Prof. Dr. Tomris Ozben. It is my opinion that the EFLM shows good initiatives to proactively keep track of developments in the field. I would also like to extend my compliments for the possibilities for online learning, which have been particularly valuable during the corona pandemic.

Some Personal questions...



Please introduce yourself with a few sentences.

My name is Merel van Wijnen, I am 53 years old and live with my husband Ben and our 11-year-old son Duco in Amersfoort, the Netherlands. I have been working as a clinical chemist at Meander Medical Centre for more than 15 years now. I hold a PhD in blood coagulation (protein S) and I was chief clinical chemist at our hospital for a few years. In addition, I was a member of the medical board of our hospital. I have been president of the NVKC since April 2021.

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

I enjoy working with people and to contribute in the quest to improve healthcare.

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 studied biology (biochemistry and molecular biology) and I hold a PhD in blood coagulation (protein S). I spent some time as college professor, training lab technicians, and I discovered clinical chemistry as my field of choice, giving me an opportunity to combine my interest in medical research and my fascination with medicine. I really enjoy working in a hospital. My heart is in benign and malignant hematology and blood transfusion. I love to work with other medical specialists, general practitioners and care givers to achieve the best for the patient. I also enjoy working with others to look for ways to improve both in how we do our daily work and at a strategic level. I think I am in the right place and have no regrets about the choices I have made. If I had to do it all again, I might choose internal medicine.

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

Maintain a healthy work-life balance and figure out what activities with respect to the work give you energy.

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?

I love to play tennis and being active outside (ice skating and skiing for example). My parents both taught physical education, so I grew up in a sports-minded family. Unfortunately, at this moment I do not always make time for it. ③.



NVKC board 2022



Coffee with Karel Tomberg

EFLM National Representative of the Estonian Society for Laboratory Medicine (ESLM)



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?

Estonian Society for Laboratory Medicine (ESLM) was founded in 1999 but its predecessor Estonian Society of Laboratory

Doctors already in 1962. So we can celebrate 50th anniversary this year. Members are laboratory doctors and non-medical laboratory specialists of at least Master's degree. Our society has 242 members (population of Estonia 1.33 million). Main activity is educational - we organize general meetings/ seminars twice a year, Summer Schools in countryside once a year and Baltic Congresses bi-annually. We also organize joint seminars with other clinical societies. Our society has formed 10 working groups and 2 sections (laboratory doctors, clinical microbiology). Our main activity for the last 15 years or so has been to harmonise laboratory nomenclature, create and up to date a local database of lab tests. We participated in developing a platform called Data Viewer in which all the laboratory test results in the country can be viewed by doctors and patients in continuous timelines. Data Viewer is based on LOINC classification system, and it was finally implemented

in 2021. Another project was developing reference intervals for complete blood count in Estonia and harmonizing them in labs. I can also name creating a verification guideline for analytes in all laboratory specialities and issuing a journal Eesti Laborimeditsiin, among other activities.

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?

We have a recently updated core curriculum and this is compatible with European Syllabus, but specialization

program is organized only for laboratory doctors. The main shortcoming is the lack of specialization for non-medical laboratory specialists. Number of non-medical laboratory specialists in labs has grown rapidly but they specialize in their narrow field at the working place. In our laboratory we have organized an internal weekly education program where all doctors and specialists have the obligation to contribute. I would also recommend newly developed EFLM Syllabus course.

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?

In my opinion laboratory medicine has become too much over-regulated and too technical. Automation, informatics, and bureaucracy have all contributed to this. I'm not sure that more regulations guarantee better patient care. Technical focus doesn't offer very much satisfaction to doctors working in the laboratory. I see laboratory as an evidence-based diagnostic knowledge center rather than a cheap manufacture of thousands of numbers. The challenge is how laboratory is seen by the stakeholders.

"Lab rat" was a term for a laboratory person who rarely came out of the lab and was sitting in his "burrow". The only way to increase visibility is to cooperate with clinicians and add value to just manufacturing numbers. The elements of such a cooperation can be participating in ward rounds/ consiliums, adding interpretative comments to test results, developing diagnostic algorithms, reflective testing, POCT, presentations to colleagues, joint seminars with clinical societies etc. The challenges of course are (1) willingness of laboratory staff to cooperate with clinicians and (2) willingness of clinical staff to cooperate with laboratory ("we know better"). Here personal contacts are very important. Challenge is to find mutually interesting points of cooperation. Rational use of laboratory and removal of pointless tests are always actual topics but also a challenge.

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?

Digitalization and diagnostic algorithms are already our everyday life. What concerns artificial intelligence and machine learning, I think that we are not ready yet. This seems to be a bit philosophical question, in addition to clinical, technical etc. All major developments have usually been implemented over several years. If emerging technologies prove to be useful for the patient or health care system, we can adapt with the changing situation. Over time we have seen many great changes in laboratory medicine and got used to them. Partnership model as a collaboration between IVD Industry, public, private, and academic drivers of innovation could be the way in proving and adopting these technologies. 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?

No, we do not contribute enough. We have currently 9 members participating as corresponding members, mostly in IFCC working groups. Perhaps we don't have enough experience or are just shy in international communication. I hope this number will increase in the future. The question also is how our society members can get informed of the developments in these working groups. EFLM Academy was first introduced to our members in summer 2021. Since this year, 54 colleagues joined the Academy. This is a good starting point. The information is distributed actively through members e-mail list. However, I feel that Covid pandemics and especially the War in Ukraine has taken our minds off from educational activities.

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?

I like that EFLM is very active and offers its members different kind of resources, more than we can use. The e-mailing communication is very tight and we also had a Teams meeting with EFLM President. EFLM Board member will be giving presentations in Baltic Congress in September in Tallinn. I regret that EFLM-UEMS clinically orientated congresses were stopped. I also don't like that we usually don't get feedback (a summary or analysis) after answering rising number of questionnaries from EFLM and IFCC. A colleague who has answered a questionnaire has devoted quite some time for finding and giving answers and it's not polite to leave him without feedback. This gap in communication needs to be improved. I hope that EFLM and IFCC will find ways to support our Ukrainian colleagues in this difficult time.

Some Personal questions...

Please introduce yourself with a few sentences.

I am a man of sufficient weight at my best age (Karlsson-onthe-Roof, Astrid Lindgren) J

I am a medical doctor who has been studying and working in laboratory medicine for almost 30 years, holding different posts like laboratory doctor, head of laboratory, development manager. I have also been involved in Estonian Society for Laboratory Medicine as a board member, chairman of board and national representative in IFCC and EFLM.

I have been happy to experience how Estonia re-achieved its independence and deeply disturbed in seeing this brutal war in Europe again.

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

I think that the main motivation is to be useful for somebody. The second motivation can be that it is intellectually challenging and interesting. And last but not least, it has been exciting to work in the specialty that has undergone such a great development.

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?

Actually, I graduated from the medical faculty as a pediatrician. As there were major health care reforms underway in Estonia in 1990s, family medicine system was being started etc, the need for pediatricians decreased. I was proposed to study a completely new academic specialty in our country – laboratory medicine. The proposal included the statement: then you can explain us (clinical doctors) what laboratory results mean. This seemed interesting to me. During the studies I participated in developing curriculum and study materials in a joint European TEMPUS project with Turku, Odense and Glasgow colleagues. Later on I had the possibility to participate in building and developing a new laboratory. In my current job I like to participate in activities that include cooperation with other laboratory and clinical colleagues. I like interpreting test results, consulting in diagnostic challenges, teaching, writing, organizing courses, editing journal. I think it has been the right job for me.

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

Try to find a specialty in laboratory medicine (which is a wide discipline) that suits you. I would also advise to practice clinical communication and build up clinical contacts. It seems that this is getting more important in the era of digital connectivity. And learn critical thinking, ask "why". Everything is not gold that is shining.

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?

I have a mixture of different hobbies like playing basketball and badminton, reading (beside books, I'm a fan of paper newspapers), theatre performances, music concerts, watching football. And of course daily pennichella.



Working group of renal function markers in Summer School.



Colleagues in Arvo Pärt Centre (Laulasmaa 2021)





Society on the hill.



Seminar in Summer School at Laulasmaa 2021.



Coffee with Etienne Cavalier

President of the Royal Belgian Society of Clinical Chemistry

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 Royal Belgian Society of Clinical Chemistry was founded in 1958, year of the Brussels World's Fair, and was further expanded to the Royal Belgian Society of Laboratory Medicine (RBSLM) in 2014. The RBSLM is the Society representing Belgium at the EFLM and IFCC. We propose guidelines to our members (specialists and trainees in laboratory medicine) and organize each year a scientific National Symposium on various themes. In November 2022, the theme will be "Men's Health", the end of a tetralogy dedicated to paediatrics, geriatrics and women's health. When possible, we try to organize joint meetings with other scientific Belgian Societies active in medicine to merge clinics and laboratory medicine. We have the ambition to propose Brussels, the capital of Europe, as a candidate city for the organization of Euromedlab.

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 Belgium, only medical doctors and pharmacists have access to the specialization in Laboratory Medicine, which is a 5-years specialization. Each of the seven Belgian universities (U Antwerp, U Gent, VU Brussels, KU Leuven, UL Bruxelles, UC Louvain and U Liège) is responsible for the training of its own trainees, but the recognition to be specialist after 5 years depends on a regional Commission (Dutch and French speaking), even if the final agreement is given by a national Institution. Welcome to Belgium! Each Belgian trainee in laboratory medicine receives a training in clinical chemistry, haematology and microbiology. Now, I find that the EFLM initiative to provide syllabi for a common training is particularly interesting to at least define the minimal requirements and, of course, to propose lectures by experts.



What is the greatest strength/weakness of your society? What challenges do you and your colleagues face?

I am very proud of our Society. The actual and former Board members are all highly respected scientists, recognized by the profession for their merits. I am also more than happy to see that our younger colleagues and our trainees follow the same line and have the will to promote science in laboratory medicine. They also publish many papers and propose many abstracts, for our National meeting, but also for International ones. Having three national languages in Belgium is sometimes a weakness, but it is often a force since it opens to practice different languages. At the RBSLM, everything is done in English, which is the only language spoken during our meetings and National symposium. This helps the younger (and not so younger) ones to easily communicate during International meetings, but also to welcome international speakers to attend our meetings in a language they can understand. Now, like many other European colleagues, we certainly lack some recognition by the medical community and we face cuts in finance by health authorities and Belgium is already low in the reimbursement of laboratory medicine.

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?

It does not seem to be "natural" to invite a laboratory specialist to a staff meeting with surgeons, pathologists, radiologists, specialists in nuclear medicine and oncologists, for instance, to discuss the care of the patients. We always have to prove (or persuade them) that our knowledge is beneficial for the patient. But in my experience, once we help them to understand that they wrongly interpret a change between two results, or warn them that there might be interferences in the results – without mentioning our clinical expertise – clinicians' views on laboratory medicine can (potentially) change. For that, we have to move out of our laboratories and be proactive with the clinicians. I also believe that if our visibility is rather low, it is because of the lack of (sufficient) laboratory medicine teaching during medical training. In addition, I believe that medical students should systematically spend some days in the laboratory.

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?

Our profession has always been ahead of all the other medical specialities regarding innovation. Just look at quality! We were virtually all more or less compliant with ISO 15189 when hospitals and clinical wards discovered hospital accreditation...and they still have a long way before arriving at our level of quality. We are also used to handle a huge number of tests, tubes and results and artificial intelligence has already been present in our laboratories since many years (I was still a trainee when the "Valab" solution, was introduced in my laboratory). I have no doubt that we will encompass all these "novel" technologies in our daily practice without any problem.

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?





This is a difficult question since I have only a limited view. What I can say is that, at the RBSLM, we clearly promote the EFLM Academy to increase our number of members and keep our trainees in the Society when they become specialists...EFLM Academy is indeed a fantastic tool.

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?

I can't really answer this question...

Some Personal questions...

Please introduce yourself with a few sentences.

I have been trained as a pharmacist and have obtained my Master in 1994. I was then recognized as a "specialist in clinical biology" (as we say in Belgium) in 1999. After that, I have then worked during 4 years in a general clinical laboratory hospital where I have had the opportunity to practice microbiology, biochemistry and auto-immunity. In 2003, my hospital merged with the University Hospital of Liège, my alma mater, which allowed me to specialize in my professional favourite domains, ie. bone metabolism and kidney diseases. I obtained my PhD thesis (on parathormone) in 2010 and I am professor of clinical chemistry at the University of Liege and Head of the Department of Clinical chemistry of the CHU de Liège since 2012. I believe that my major skill is my capacity of adaptation to any situation. According to my collaborators, my major default is that I wakeup every day with a new idea or a new project in mind! I am married with Isabelle since 1995 and have a 18-yo daughter, Zoé.

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

Difficult question. I think that this could be my passion to communicate and share my enthusiasm! My mentor, Dr Jean-Claude

Souberbielle from Necker Hospital (Paris) was so enthusiastic and passionate that I have tried to keep that in my professional life.

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?

If I had "another chance", I would do exactly the same thing! Clinical chemistry combines analytical and clinical knowledge and you need to be good in both of them. Every day is a new adventure and you never exactly know what you will be doing when you arrive in the morning. Working in a university hospital, I have the chance to combine passionate clinical discussions with my colleagues clinicians, supervise a large laboratory proposing very specialized biomarkers, participate in the development of new tests, but also teach, supervise PhD students, give lectures and so on. My position at the border of analytics and clinics also allows me be active in clinical societies related to bone and kidney diseases (IOF, ERA, ESCEO, GRIO, Belgian Bone Club...).

What would be your advice to young scientists who wish to pursue their career in laboratory medicine? Go outside the lab and meet the clinicians!

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?



Belgium is the country of the bon-vivant and I am not an exception. I love cooking (especially sous-vide low temperature cooking and cold and hot smoking). I also love to go to nice restaurants and discover new world cuisines. Also, I appreciate wine, Belgian beers and Scottish whisky (among others...). When I do not eat or drink in my free time, I am reading many books. I have a passion for history, especially the history of WW II and WW I, and more specifically the history of the resistance of the forts of Liege in August 1914. My favourite authors are Philip Kerr, Andrea Camilleri, Robert Crais, Frank Thilliez and Martin Cruz Smith. I am also a fan of the music of the 60's, especially Californian music.







Coffee with Jennifer Brady

President of the Association of Clinical Biochemists in Ireland (ACBI)



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 Biochemists in Ireland was founded in 1967. Applications for membership are accepted from professionals with an

interest in clinical biochemistry. Our members are primarily clinical biochemists however we also welcome chemical pathologists, medical scientists, students and industry colleagues. The main aims of our association are to promote the education, training and the highest standards of practice for Clinical Biochemists in Ireland. To that end, our association has been active for many years in providing training and educational opportunities, the highlight of which is our annual conference held in the Autumn. This year we are looking forward to our first face to face conference in two years which will be held in Cork. We have published a number of clinical biochemistry guidelines over the years which are available on our website, the highlight of which is 'The Biochemistry of Body Fluids'. This is currently being updated. Other ongoing projects include an update to our website (www.acbi.ie) to include a CPD module, and developing a social media presence. We have recently introduced a mentoring program to support young clinical biochemists in their careers.

ACBI engages with the government, Department of Health and Heath Service Executive (HSE) on matters relating to training, regulation and the provision of laboratory medicine services in Ireland. We have representatives on many national forums, committees and guideline development groups.

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 clinical biochemistry professionals? Training on bioinformatics and computer assisted technologies (AI and ML for example) needs to be incorporated into training programs to enable us to harness the vast technological advances in this area. Training in specialised areas of biochemistry is a challenge in a small country like Ireland (approximately 5 million inhabitants). From a national perspective, life science graduates who wish to pursue a career in as a Clinical Biochemist in Ireland can undertake an MSc in Clinical and Diagnostic Biochemistry in University College Dublin. This course had its first intake in 2020 and was conceived and is directed by Consultant Clinical Biochemists. The ACBI would like to see this MSc incorporated into a comprehensive entry level training program. The ACBI supports Clinical Biochemists who wish to pursue higher level training by organising a peer reviewed training program which aligns to the EFLM syllabus. The exit examination is FRCPath (UK). The ACBI has been advocating for state support for this program.

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?

Following the Covid-19 pandemic, the public have a greater awareness of the importance of the laboratory to the wider healthcare system. New tests have been introduced and the manner in which patients with chronic diseases receive their healthcare has had to change due to the pandemic, for example more patients are sending capillary or dried bloodspot samples directly to the laboratory for testing. The laboratory has had to rapidly adapt to these circumstances and the expertise of clinical biochemists has been critical to ensure quality has been maintained throughout. This has given us a platform to raise the awareness of the important role the laboratory plays in the wider healthcare system. Direct to consumer testing is becoming more widespread and we must ensure there is appropriate education around this testing.

With increasing awareness of supply chain issues and the need to incorporate more green practices such as less waste generation, it is more important than ever for clinical biochemists to engage with our clinical colleagues including in primary care to ensure appropriate test requesting.

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?

The rapid pace of development of technologies such as AI and ML is really exciting. There are huge opportunities with these emerging technologies. In Ireland, we have a long way to go to get ready for these technologies. There are many legacy issues with IT infrastructure, and lack of communication between systems that need to be resolved first. We then need to ensure we have sufficient numbers of appropriately resourced and trained scientists to harness this technology to benefit the pre-analytical and post-analytical phases in particular.

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?

We carried out a survey of our members at the beginning of 2022. One question asked what they considered were the most important benefits of ACBI membership. Access to the EFLM Academy was rated by 65%, and the third most important benefit. All of the working group opportunities from EFLM are distributed to our members by email. We are a small organisation (approximately 120 members) and many of our members (like colleagues in laboratories throughout Europe) are under considerable time pressure in their working day. While we would like to get involved in more activities, I think given these circumstances we are doing very well with representation on the working groups Pre-analytical phase, Distance education and e-learning and Register. A number of our clinical biochemists provided lecture content for the EFLM syllabus course.

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?

We are very excited to be involved in the Green Labs task force. This is a really important initiative as we all have a responsibility to encourage our colleagues, hospital managers and service users to promote sustainable laboratory practices. This task force is timely as laboratories and organisations in Ireland including ACBI have signed up to the Irish Green Labs initiative. Our members are also very engaged with the EFLM webinars, the Syllabus course and other educational opportunities which became so important during the Covid-19 pandemic. The EFLM Biological variation database is a very well used resource!

Some Personal questions...

Please introduce yourself with a few sentences.

I have been a clinical biochemist for over 20 years and have worked in healthcare laboratories in the UK and Ireland. I am a currently Consultant Clinical Biochemist with a special interest in paediatric biochemistry, newborn bloodspot screening and point of care testing. I am also an associate clinical professor at University College Dublin School of Medicine. I became president of ACBI last November and am actively involved in several national advisory committees.

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

My motivation is to try to improve the harmonisation, efficiency and quality of services that we provide to patients.

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?

Having graduated with a degree in biochemistry I was led into clinical laboratories by a desire to apply these biochemical concepts in 'real-life'. What interests me most about my current job is the variety, no two days are ever the same and there is always something new to learn! When we can deliver a service



improvement for our clinicians and patients it is very rewarding. I also value the interaction with clinical colleagues, discussing cases and seeing biochemistry fitting into the diagnostic pathway. Teaching is another element of my role, I really enjoy meeting students and younger members of the profession and hopefully inspiring them to be the future leaders of our profession.

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

While it is hard work, this is a really exciting career in an everchanging environment. There is constantly something new to learn. Embrace any opportunities you have to learn a new technique and to network with colleagues. You can learn so much from other peoples' experiences.

Do you have some hobbies?

I love the outdoors, that may be going out for a run or cycle. I also love to travel and having spent holidays during the Covid-19 in the beautiful West of Ireland, I look forward to going further afield again.



Coffee with Attila János Misetta

President of the Hungarian Society of 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?

The predecessor of the Hungarian Society of Clinical Pathology was founded after the Second World War in 1946. The present Hungarian name

"Magyar Laboratóriumi Diagnosztikai Társaság" (Hungarian Society of Laboratory Medicine) is relatively new, and several other names were used since the foundation. The HSLM is responsible to promote the laboratory and scientific activities of its members. It also endorses the professional, ethical, and financial interests of the members in accordance with the common weal. The Society organizes the national conferences in this field of medicine every 2nd year, and the Training days in the interim years. The activities and functions of the Society are regulated by the Constitution of HSLM. The society is proud of his former predecessors, leaders/members such as Loránd Jendrassik (inventor/developer of bilirubin measurement), Kálmán Pándy (developer of early liquor protein measurement), Mihály Somogyi (diabetes research), Gábor Szász (developer of a number of enzyme kinetics measurements including CK, gamma-GT), and more recently László Muszbek (blood coagulation research), and Gábor L. Kovács (hormone research). The society's present goal is to spread the knowledge of newly developing areas of laboratory medicine, including molecular genetics and various omics. Participation in quality standardisation protocols is basic for every Hungarian lab for a long time back but the international accreditation is an ongoing process, in which the society actively participates. The fast development and increasing number of "direct to costumer tests" together with digitalization are also challenges the society is involved in.

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?

The past decades have seen a decreasing interest within the medical community towards laboratory medicine specialization. The number of positions taken by individuals with degrees in chemistry, biology etc. increases continuously. Laboratory medicine is being taught in every medical school, albeit the curriculums are not identical. Upon finishing general medicine, the subsequent specialization is a four and a half year long process. This is uniform within the country. In fact, the curriculum was worked out by the society, and is similar to those of other EU member countries. There is a transparent education system through which individuals with diplomas other than medical may take BSc (Medical Diagnostic Analyst) and MSc (Clinical Laboratory Scientist) degrees. The "clinical biochemist" degree is available for those who are working in laboratories and hold MSc degrees in relevant subjects after a successful completion of a four year long training program. While at the higher education level the output appears to be sufficient to replenish the needs of the healthcare system, we are having problems with finding sufficient number of trained assistants. Vocational schools are supposed to be main training

sites, but their output is not enough to replenish the retiring age group.

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?

The main trends are of course international. Our development is technology driven. First, digitalization is an ongoing process, and with the advent of "at home laboratory diagnostics" it is becoming more and more important. Specialists have a crucial role in quality issues related to this subject, and besides, family doctors may play an advisory role as well.

Automatization and centralization of laboratory investigations are also ongoing processes wherever feasible. This progresses hand in hand with digitalization. Integrated platforms are now commonly seen in large laboratories. Delays in timely reporting are still a problem, so the turn around time should be considered seriously. Quality management is of course an evergreen issue in the laboratories. POCT technologies are also developing towards simple, often hand held "doctor proof" devices which are connected to the laboratory information services. Molecular diagnostics is also a dynamically developing area, where the "sufficient but enough" information delivery is particularly important having a limited ability to link certain polymorphisms with diagnosis.

The visibility of laboratory medicine is often controversial: "we need it but let it be perfect and timely and of course cheap". Even though data provided by the laboratories are becoming more and more important in clinical decision making, many clinicians view the laboratory as a "factory". The consultative element of laboratory medicine has to be strengthened, but it requires a significant investment on the personnel side, which is to some extent counterbalanced by automatization. Right now, laboratory medicine is underfinanced in Hungary, but the healthcare system tries to solve the content problems with reorganizations. Results up today are not encouraging.

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?

Structuring and restructuring in the light of new advancements is an important issue. The integration of new knowledge areas and effective communication within and outside of the healthcare system is important. An ever-increasing portion of the clinical cases can be solved by following algorithms, but creative thinking based upon good knowledge background is needed to solve the not so simple cases. Networking in an intelligent manner is a very important issue.

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?

The society is responsible for spreading relevant information on EFLM activities, and I personally think that we are OK at that. The members' participation is sometimes restricted by inappropriate language skills or lack of local support. However, the society supports its members in all kinds of EFLM related activities, but as always it could be better. Online materials on advancements in laboratory science and good laboratory practice are of course useful.

Some Personal questions...

I finished my studies in general medicine in 1984, but by this time I worked as a student researcher within the than Department of Clinical Chemistry for five years. My studies related to intracellular electrolyte homeostasis, a subject I have never fully abandoned. My attachment to the Department and Laboratory Medicine was the result of a lucky situation. As a first-year medical student I attended the classes of Dr. Kellermayer, a guest lecturer at the biology department. After



INTERVIEWS WITH SENIOR LABORATORY COLLEAGUES Interview with Dr. Gilbert Wieringa

Conducted by Evgenija Homšak, Chair of the EFLM Profession Committee



In your professional career, you have served in many leading roles both in your country and internationally. You have been active as a chair of Working Group: Common Training Frameworks / Syllabus for 1 year and Profession Committee chair for 6 years (from 01/01/2014 to 31/12/2019). What was your motivation for working

for EFLM?

To support high quality, equitable laboratory medicine practice across Europe through greater harmonisation of education and training, clinical practice and professional expectations

What was in it for you?

The stimulation of working with such a diversity of people. All

a long discussion I became a student researcher. My career involved two longer visits to the United States, first as post doc fellow at the Department of Biochemistry of the University of Mississippi Medical Center in Jackson, and later as a visiting professor at the Department of Microbiology of the University of Alabama at Birmingham. I also spent significant time in the Department of Pathology of University of Aberdeen Scotland. The adventures ended in 2000, and since then I have served my home laboratory continuously. Since 2013 I have been the director of the Department of Laboratory Medicine of the Medical School of the University of Pécs. Beyond running the laboratory my research interest focuses primarily on molecular biology (different aspects of it) and cellular ion homeostasis (https:// scholar.google.com/citations?user=FauhNBgAAAAJ&hl=hu). The work in a clinical laboratory is interesting, and almost everyone can find some beauty in it. For me it is not really a work, but rather a lifestyle. Apart from working in the laboratory my hobbies are gardening, driving my old BMW motorbike, table tennis and reading history books. And since 2018, as rector, leading the University of Pécs...



of us working in different ways but all with the same purpose. Learning from each other to create a whole that is bigger than the parts. It has provided a valuable eye opener to what goes on beyond my own country walls

If you would need to name a role that was most rewarding to you, what would it be?

Being chair of the EC4 Foundation Board and EFLM's Profession Committee were huge privileges. I followed in the footsteps of inspirational leaders like Rob Jansen and Simone Zerah who did so much in establishing an EU Register of Specialists in Laboratory Medicine, preparing education/training syllabuses, and pursuing the recognition of professional qualifications with the EU Commission.

You were EFLM C-P Chair. Your term of office was during 2013-2019. What were the greatest challenges during your

EFLM engagement? How would you describe EFLM in those days?

Bringing the EC4 Foundation Board into the EFLM fold in 2016 was a challenge for many of us but was recognised as the final piece of the jigsaw in ensuring that EFLM spoke with one voice going forward. Bringing about a new way of working was less of a challenge than I expected and I must pay tribute here to the support provided by Silvia Cattaneo in the EFLM office in ensuring that the new committee could focus on future direction whilst the office focussed on management support. How would I describe EFLM in the early days? A past president summed it up much better than me in 2011" EFLM is going through its adolescence at the moment"! That same past president more recently agreed it was now an adult!

How do you see the future of EFLM?

Bright! It is a family. Yes, families can be fractious but they have more reason to be together than apart and that is particularly true in these troubled times. We support each other across our country borders through what we do professionally and personally.

The EFLM Profession Committee is composed of members voted by EFLM National societies, who come from different cultures, have different priorities, views and preferences. That is not the team you select, but you have to work with that team and manage all kinds of important projects, towards common European goals. Is it difficult to lead such a heterogeneous team? Could you describe your experience in the Profession Committee during your engagement

Given it is such a heterogeneous group of people with different priorities and cultures it is vital we have structures in place that ensure as wide a representation as possible. Yes, so you may end up working with people you have never met before. But I think that is all for the better. In my experience there has always been more to unite people than there is to divide them. That's the baseline, EFLM's growth and productivity speaks for itself.

Your field of expertise was harmonisation, recognition and regulation of our profession. Could you name some major achievements, milestones and future challenges in that area?

To be part of building EFLM has been a harmonising project that I have been immensely proud to be a part of. I was really pleased when the EU Register of Specialists in Laboratory Medicine became the European register in 2018. What followed was applications from so many countries for recognition of their Equivalence of Standards and subsequent block enrolment of their specialists. I hope this has been of value in recognising their knowledge, skills and competence as well as their professional status. Out of the growth of the Register came the EFLM Academy which has opened access to education and training opportunities for so many people. It has proved a big hit. The Academy and the Register are ties that bind people together and I hope that the 2018 revision of the European syllabus is seen as the platform on which they are built.

Achieving recognition of professional qualifications under the EU Commission's 2013/55/EC Directive is particularly important for those pharmacy and scientifically trained specialists whose knowledge, skills and competence are not recognised in their own country through a registration or regulation system. Our 2020 paper in CCLM should help make the case but I suspect there is a long way to go. To date no profession has achieved recognition under the directive. Yet, Laboratory Medicine could make itself a unique case – it is a relatively small profession, is largely unified through its syllabus, has an expected code of conduct and has the required number of countries to achieve representative recognition for all. Achieving it could set a unique precedent and do so much for raising awareness of laboratory medicine's contribution as well as its profile

How did you approach retirement? How do you like to spend your time?

I have been really lucky in being allowed to gently ease towards retirement rather than falling off a cliff. Fortunately, there is a theme of emerging pensioners around me to the extent that we taunt and tease anyone still working. Gill (also just retired) and I moved to a converted chapel in a little village on the edge of Derbyshire's Peak District last year where our dog has found a new lease of life. We have both started piano lessons (annoyingly, she is better than me), mountain biking (I'm better than her), and re-starting holiday trails before our knees give up. The blasted children still turn up, and as yet none of them show any inkling of us becoming grandparents.

For the end, as an expert and a senior colleague, what would be your advice to young individuals who wish to pursue their career in laboratory medicine? Is our education fit for the purpose? Is there something missing in our curriculum?

Enjoy it, make the most of your short time. Laboratory Medicine opens up so many opportunities. It is a wonderful platform for research and innovation, clinical practice, teaching, working with





a diversity of healthcare professionals and providers whether in the laboratory or at the point of care. The day education and training is fit for purpose will be the day when the likes of EFLM will have fulfilled their purpose. There's a long way to go. Contribute.



UPCOMING EFLM EVENTS Forthcoming EFLM webinars

Reported by Tara Rolić, Member of the EFLM WG "Promotion and Publications"

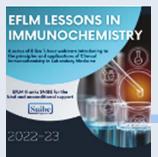
This Autumn interesting live webinars are available only for EFLM Academy members at the <u>EFLM e-learning platform</u>! Do not miss lecturers about urinalysis, atherogenic lipoproteins and artificial intelligence. Popular lessons in immunochemistry are scheduled for Novembar and presenting the role of the testosterone. You can find more about spekaers, read abstracts and listen recorded webinars on-demand on the e-learning platform.

THE EFLM UPDATE OF THE EUROPEAN URINALYSIS GUIDELINES



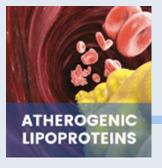
Date: 25 October 2022 at 18:00 h

EFLM LESSONS IN IMMUNOCHEMISTRY - ANDROGEN EXCESS OR DEFICIENCY: THE ROLE OF TESTOSTERONE AND FREE TESTOSTERONE,



Date: 24 November 2022 at 16:00 h

ATHEROGENIC LIPOPROTEINS: WHICH, WHEN, AND HOW TO QUANTIFY



Date: 22 November 2022 at 18:00 h

ARTIFICIAL INTELLIGENCE IN LABORATORY MEDICINE



Date: 13 December 2022 at 18:00 h



EDUCATIONAL GOALS

- to teach the basic tips in writing a . good manuscript
- to define the importance to focus on the data and the best presentation of data
- to emphasise the value of abstract and title
- to prepare the paper for publication to focus on the ethical issues in
- publication and research
- to define the peer reviewing process to present some practical examples and the most common mistakes in practice



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5 OCTOBER 2022 Aquila - Atlantis Hotel, Herakilon, Crete, Greece

This conference aims to stimulate discussion between Laboratory Scientists and Clinicians who are in the front line in providing medical services to refugees and immigrants around the Mediterranean Area. This will help to evaluate precisely the health and medical needs of the mobile populations and to identify problems that arise in host countries and their populations in order to propose to Health Authorities the best solutions for laboratory testing and health screening in hot spots and camps.

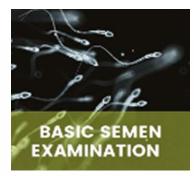




PAST EFLM EVENTS Past EFLM webinars: recorded version available!

Reported by Tara Rolić, Member of the WG "Promotion and Publications"

In 2022, during February and March three great EFLM Academy webinars were held at the EFLM e-Learning platform. Webinar participants could attend interesting lectures about the importance of communication of laboratory professionals directly with patients, as well as complete blood count individual reverence intervals and liquid biopsy. If you missed one of these amazing webinars, we strongly recommend you to visit <u>EFLM eLearning platform</u> and listen to ondemand webinar. If you are not EFLM Academy member sign up <u>here</u> (webinars are available only for EFLM Academy members).



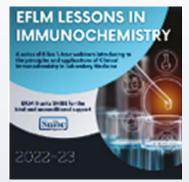
September 27th was reserved for a great lecture about Basic Semen Examination by Lars Björndahl from Karolinska University Hospital, Stockholm, Sweden. The human ejaculate is a complex body fluid and many difficulties with matrix of the sample can be expected in assessment of the results. The

development in andrology and reproductive medicine has long been hampered by the lack of quality control and improper techniques. Although the WHO since 1980 publish recommendations, the global implementation of the guidelines has been very slow and incomplete. Last year the most recent WHO edition (6th, 2021) was backed up with an international standard on Basic Semen Examination (ISO 23162:2021).



20th On July Paul Collinson presented the measurement of cardiac troponin (cTn) by high sensitivity methods as the predominant cardiac biomarker in routine clinical use. In the lecture it is discussed how how cTn measurement fits

into the guidelines for the differential diagnosis of patients with suspected acute coronary syndromes (ACS). After, the kinetics of troponin release, the impact of the shift to high sensitivity methods and how high sensitivity methods can be used to support early diagnostic classification is discussed. Problems of the cTn elevation outside of the ACS population is highlighted.



Etienne Cavalier, Belgium, Markus Herrmann, Austria and Annemieke Heijboer, Netherlands in a second EFLM lessons in immunochemistry presented the role of the laboratory in measuring vitamin D status. Webinar (May 30th, 2022) provided a structured and concise overview on the most frequently encountered issues by laboratorians and clinicians that impact the assessment and interpretation of patients vitamin D status. Audience could learn about vitamin D metabolism and available analytical methods to analyse specific metabolites of interest. Furthermore, the limitations of available methods and ongoing efforts to standardize vitamin D assays are discussed. Information's on common variables that influence the results in clinical practice and require consideration when interpreting results are delivered and practical importance is illustrated in clinical cases.

Third lesson in immunochemistry in September 2022 (3-13) was about heart failure and natriuretic peptides and was presented by Croatian laboratory and clinician experts Lora Dukić and Hrvoje

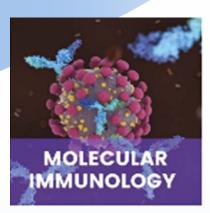
Jurin. In the lesson natriuretic peptides (NPs) as hormones released by cardiomyocytes in response to volume overload and myocardial stretch were presented as regulators of diuresis, natriuresis and vasodilation. NPs are biomarkers for diagnosis and prognosis of heart failure (HF). Except proBNP (prohormone), BNP (active hormone) and NT-proBNP (inactive form), there are truncated and glycosylated sub forms present in circulation. New therapeutic approaches in HF need cautious interpretation of NP results. Distinct diversity in immunochemistry methods used for NP determination is caused by use of different antibodies and standards. In order to standardize methods for measurement of NPs, development of reference methods and commutable standards is needed.

Natriuretic peptides are well established biomarkers in the diagnostic process of acute and chronic heart failure. While elevated in a number of cardiovascular as well as non-cardiovascular conditions, normal or low levels of natriuretic peptides are particularly useful as a method of HF exclusion. Higher NP levels are associated with poorer prognosis, irrespective of left ventricular ejection fraction. Lecture discussed the physiological functions of the NPs with the focus on clinical significance and the potential of using them as diagnostic and/or therapeutic agents.



On 24th May EFLM webinar titled "Laboratory diagnostic of prostate cancer" by Josko Osredkar from University Medical Centre Ljubljana, Slovenia was given. Prostate cancer overall mortality rates has not decreased despite screening process with serum PSA, the most widely used tumor biomarker for an early detection of prostate cancer.

On contrary, overdiagnosis and overtreatment are common due to false positive results of PSA resulting in unnecessary prostate biopsies screening. Limited specificity leads to evaluation of several biomarkers to overcome the limitations of PSA. Free PSA and their subforms (proPSA) are promising biomarker.



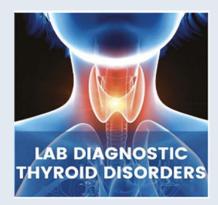
Webinar focused on advances currently changing our understanding of the working of the immune system was presented by Michael Neumaier on June 21st. Two paradigmatic changes are discussed. 1) "innate immunity has no memory, but cognate does" and 2) "cognate immune cells use variable immunoreceptors, but innate cell can't". "Trained innate immunity" aka "innate memory" is a recently established term to describe metabolic and epigenetic reprogramming of innate cells. It is initiated by a first stimulus in monocytes and macrophages, DC and NK cells and has an effect on subsequent challenges of innate cells and also has impact on T cell responses. Memory effect have been shown to last up to a year and appear to occur at the level of reprogramming cells in tissues, but also in the bone marrow. A fundamental paradigm in immunology states that the innate and the cognate arm of the immunological targets launch different biological effector functions as a result. Specifically, myeloid cells use genome-encoded invariant pattern recognition receptors, while the adaptive system is capable

of recombining genomic building blocks in order to generate variable receptors i.e. T cell receptors and immunoglobulins with an enormous diversity. We have shown that a group of innate cells designated "variable immunoreceptor-expressing myeloids" (VIREM) cells. These cells are detectable in healthy individuals and in disease. Their function is not yet clear, but first data suggest that they may be involved in tissue homeostasis.



Two live webinars about IVD regulations were hold, first on May 10th and second on June 28th, 2022. In the first one, Isabel Dombrink, and Bart Lubbers talked about Regulation of In Vitro Diagnostics in the EU in lesson for diagnostic professionals. It is presented how new IVD regulation affects manufacturers and diagnostic laboratories. Highlighted was Article 5.5 and conditions under which laboratories can use in-house devices. Webinar presented steps for laboratories to comply with the IVDR requirements and overview regulation of the IVD market in EU. Second one was dedicated to the changing landscape of test evaluation and regulatory requirements and it is held by Christa Cobbaert and Alison Smith. Speakers talk about medical tests and a specific purpose as well as a role in clinical care pathways to deliver actionable results and possess analytical and clinical performance characteristics that guarantee a favourable benefit/harm ratio for patient management and/or outcome. From May 26th, the IVDR 2017/746 is in place and regulates EU market access of commercial tests in order safe and effective tests for patient. Regulative demands risk-based classification of test,

conformity assessment of clinical evidence requirements by third party and post-market follow-up/surveillance of the test. Strengths and limitations of conventional LDL-c test are discussed according to clinical guidelines for Cardiovascular Risk Management. New clinical guidelines should trigger IVD-manufacturers and laboratory professionals to periodically re-evaluate the fitness-for-clinicalpurpose of existing tests as compared to emerging tests, and to reconsider the interdependence of analytical and clinical performance specifications.



Damien Gruson from the Department of Laboratory Medicine, Belgium held on April 26th 2022 excelent webinar and gave overview of the thyroid diseases and thyroid function tests (TFT). Beside thyroid stimulating hormone (TSH, or thyrotropin), thyroxine (T4), and triiodothyronine (T3) tests, thyroglobulin and calcitonin are used in the evaluation and monitoring of thyroid diseases. Pre and postanalytical mysteries are discussed and assay performances as well as appropriate test ordering are important points of focus to ensure best use of TFT.

VACANCIES IN THE EFLM FUNCTIONAL UNITS

Vacancies in the EFLM WG "Harmonisation"



Reported by Silvia Terragni, EFLM Office

The call for nominations of a new member for the EFLM Working Group "Harmonisation" (WG-H) under the chairmanship of Dr. Martina Zaninotto is open. The WG-H aims to promote and coordinate the diffusion of promising harmonization initiatives among the EFLM member societies and take initiatives to harmonize nomenclature, units and reference intervals on a European level.

Specifically, we are calling for nominations of 1 Full Member position.

"<u>Click here</u>" to know more about the requirements for the requested position and the evaluation procedure. **Deadline to send** nominations: 15 October 2022.

The first term of office will be for 2 years starting after the appointment in January 2023 and ending on 31 December 2024 with the potential extensions for two more terms beyond 2024.

Procedure for applications: each EFLM Full National Society Member in good standing with the membership fee can submit one nomination using the form circulated to the National Society's representatives to be sent back to <u>eflm@eflm.eu</u>. A brief plan of the applicant's contribution to the aims and objectives of the relevant Working Group must be included in the form. Together with the application, a short CV should also be submitted underlining the qualifications and prior experience and publications in the relevant area. Candidates must be officially recommended by their National Society through a formal letter of support. Applicants who are not selected as full members may be eligible for corresponding membership provided there is no another corresponding member from the same country.

UPDATES ON EFLM PUBLICATIONS

Reported by Ales Kvasnicka, Member of the EFLM Communication Committee

Measurement uncertainty for practical use

Abdurrahman Coskun, Elvar Theodorsson, Wytze P.Oosterhuis, Sverre Sandberg,

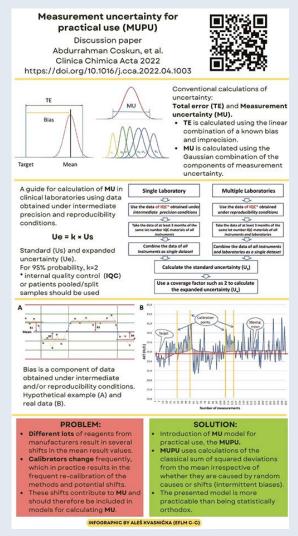
on behalf of the European Federation of Clinical Chemistry and Laboratory Medicine Task and Finish Group on Practical Approach to Measurement Uncertainty

https://doi.org/10.1016/j.cca.2022.04.1003

Uncertainty is inseparable from all kinds of measurements performed in clinical laboratories. Measurement uncertainty (MU) in laboratory medicine is usually a combination of uncertainty in the entire calibration hierarchy combined with bias and imprecision in the use of different measurement systems.

Accreditation standards including the ISO/IEC 17025:2017 and ISO 15189:2012 require that laboratories have routines for calculating the MU of reported results. Due to the conceived complexity of the proposed calculation methods and guidelines (CLSI EP29, Nordest 537, and ISO 20914:2019) these guidelines have not been generally and effectively applied in clinical laboratories.

Since patients' samples for the same measurand can be analysed in one laboratory or several laboratories using different measuring systems, the measurement uncertainty should be calculated using results obtained from analysing the same internal quality control material if commutable or patients pooled/split samples. High workload and measurand heterogeneity favour a pragmatic utilitarian approach. The purpose of this paper is to describe such an approach – the MU model for practical use (MUPU), including its advantages and disadvantages. The MUPU approach for estimating MU includes the deviations from the mean irrespective of whether they are due to systematic or random causes. The estimates of MU can be used to calculate uncertainty in patient results as well as in communication with the accreditation bodies. Furthermore, possible causes of the deviations are monitored including lot number changes, measuring systems, measuring procedures, sites, and operators, making it possible to define the causes of uncertainty within the laboratory.





NEWS FROM EFLM NATIONAL SOCIETIES

Spanish Society of Laboratory Medicine (SEQCML) unveils new Strategic Plan for improving patient health

The SEQC^{ML} is committed to the humanization of clinical laboratories in its new Strategic Plan (2022-2024)

• The Society's 2022-2024 Strategic Plan seeks to promote Laboratory Medicine specialties through the implementation of research projects using multi-centre registration and the creation of an SEQC^{ML} Observatory.

• The Society will create a working group to assess the impact of the 2030 agenda on Laboratory Medicine and identify the measures that will need to be adopted to move towards a green laboratory.

• It will promote among scientific societies patient-oriented care and the incorporation into their strategic plans of 5P medicine: personalized, predictive, preventive, participative, and population-based.

Madrid, September 5, 2022 – The humanization of clinical laboratories and the creation of an Observatory for the dissemination of current issues in Laboratory Medicine are some of the strategic objectives of the new 2022-2024 Strategic Plan of the Spanish Society of Medicine Laboratory (SEQC^{ML}), the goal of which is to improve patient health. The new project, developed over a period of eight months, is aimed at guiding the actions of the Board of Directors and the SEQC^{ML} during this three-year period. The Strategic Plan has been developed in several phases, including a massive survey of members, and has been put together thanks to the work of a committee of experts made up of members independent of the Board of Directors.

The new Strategic Plan consists of a total of 50 actions and nine strategic lines to be implemented. Among them, the president of the SEQCML, Dr. Antonio Buño, highlights the Humaniza Program. "We are seeking to develop a humanization policy aimed at clinical laboratories in the pre-analytical phase and

at the time of sample collection, to ensure humanized care for patients, family members, and companions," he explains.

The commitment to 5P medicine (personalized, predictive, preventive, participative, and population-based) and the promotion of patient-oriented care among scientific societies are also key elements of the project. In addition, the new Strategic Plan is committed to the development of formulas for collaboration between laboratory specialists and professionals from other specialties and the promotion of personalized medicine linked to molecular biology.

Likewise, it seeks to promote Laboratory Medicine specialties through various actions. In particular, the aim is to carry out research projects using a multi-centre registry where a large number of laboratories can participate, the development of a channel of good practices, and the launch of a SEQC^{ML} Observatory "for the monitoring and dissemination of current issues, successful experiences, and trends in Laboratory Medicine", explains Dr. Antonio Buño.

The Society is also proposing the creation of a working group to assess the impact of the 2030 agenda on Laboratory Medicine and identify the measures that will have to be adopted to move towards a green laboratory.

Lessons learned

The new Strategic Plan has detected a series of areas for improvement and a number of barriers to overcome. One of them is the lack of recognition of the contribution of Laboratory Medicine and the clinical laboratory in diagnostic and research work. In addition, there is an excessive demand for laboratory tests and an increase in costs, which can generate, according to the president of the SEQC^{ML}, "a biased image of the clinical laboratory and Laboratory Medicine among hospital management or regional health services".

Reported by Dr Katherina Psarra, IFCC eNews Editor



Dear Colleagues

With the first raindrops the summer is gone... As the summer is still here in Greece and especially in the islands, it is a great idea to join us in Crete for the IFCC-GSCC Joint Symposium on October 2nd.

In the meantime, full of images of sunsets, seaside or green mountains, we are back to work in our labs. It is a different time of the year!

IFCC, our international society that gives us visibility as lab people and shows our importance all over the world, is planning lots of events for this fall. The most important event is the IFCC General Conference in Brussels, where we will celebrate the 70-year anniversary of IFCC. Our President, Prof. Adeli invites us to this wonderful event in his message. With my best wishes for a wonderful fall.

Dr Katherina Psarra, IFCC eNews Editor

Message by Prof. Khosrow Adeli, IFCC President

Greetings to everyone in the IFCC family! I hope you have all had a wonderful summer. Here at IFCC we are looking forward to a very productive Fall season. There are many upcoming events planned this quarter as we come out of the COVID-19 pandemic. For more information, visit the <u>IFCC website</u>. I look forward to seeing our IFCC community at these important events!

This Fall, IFCC will also be hosting the General Conference for invited IFCC Officers in Brussels, Belgium (Oct 28-31, 2022). Members of Committees and Taskforces as well as Presidents of National Societies and Regional Federations have been invited and are encouraged to attend. This year's meeting is a special opportunity to celebrate the 70th Anniversary of IFCC, recognizing 70 years of global leadership in laboratory medicine and celebrating our contributions to advancing excellence in laboratory medicine for better healthcare worldwide. This occasion will be commemorated throughout the meeting with special events, including a social dinner with live jazz music. Alongside updates from IFCC functional groups including new IFCC Task Forces, several special symposia are planned including presentations from IFCC Past Presidents and from the Regional Federation Presidents, a Special Symposium on the Central Role of Lab Medicine in Patient Care & Public Health with expert presentations from AACC, WHO, and others, as well as an Industry Forum by diagnostic industry leaders on the Future of IVD over the Next Decade. Brussels will set the perfect backdrop for these activities as a truly global city, often referred to as the "capital of Europe".

In addition to upcoming events, the IFCC Task Force on Outcome Studies in Laboratory Medicine (TF-OSLM) is developing a funded research program for investigators in clinical labs, hospitals, and other institutions located around the world to conduct new retrospective and prospective research with outcomes that assess the value of laboratory medicine in healthcare overall. <u>A call for proposals</u> has been sent out, seeking research proposals for studies evaluating the impact of laboratory testing on health outcomes. <u>Click here to read more</u>.

Receive Global Recognition for teamwork and outcomes based on healthcare best practices

Calling all integrated clinical care teams, the UNIVANTS of Healthcare Excellence award program now is accepting applications through until November 2022. This prestigious award is open to all integrated healthcare teams who have achieved a measurable difference for patients, payors, clinicians and health systems/administration. To learn more and to apply, visit: <u>www.univantshce.com</u>

Boost your brand and increase your company's visibility through the EFLM Newslette

EuroLabNews is the digital bi-monthly newsletter of EFLM targeting more than 10.000 laboratory medicine professionals and is also published on the EFLM website. The Newsletter features information on EFLM initiatives and activities of its functional units, news from EFLM National Society members and includes a calendar of the major events in the Clinical Chemistry and Laboratory Medicine field.

The EFLM IVD partners are offered the possibility to advertise on EuroLabNews as follows:

	1 issue	6 issue
1 quarter of page	500 €	2000 €
Half a page	1000 €	4000 €
Full page	1500 €	6000 €

Those interested in this opportunity can contact the EFLM Office at silvia.cattaneo@efilm.eu

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 <u>visit here</u> or email <u>eflm@eflm.eu</u> **Due to COVID-19 alert throughout the world, some upcoming events could have been cancelled or postponed, please direct check with the organizers if the date is confirmed.**

4-9 October 2022 FEBS Advanced Course: 360-degree Lysosome; from structure to genomics, from function to disease-update Izmir (TR), Click here for information	54 National Congress SiBioC - Laboratory Medicine
5-7 October 2022 5èmes Journées Francophones de Biologie Médicale (JFBM Saint Etienne (FR), <u>Click here for information</u>	
14-15 October 2022 44th Annual Conference of the Association of Clinical Biochemists in Ireland (ACBI 2022) Cork (IE), Click here for information	Zuth PSLD National Congress
25 October 2022	26 October - 15 November 2022
EFLM Webinar: The EFLM Update of the European Urinalysis	
Guidelines	good scientific & professional article
on-line, <u>Click here for information</u>	on-line, <u>Click here for information</u>
26-30 October 2022 International Biochemistry Congress 2022 // 33th Nationa Biochemistry Congress Izmir (TR), <u>Click here for information</u>	UKMedLab 22 London (GB) Click here for information
18 November 2022	22 November 2022
Annual Meeting of the RBSLM 2022Brussels (BE) & hybrid meeting,Click here for information	EFLM Webinar: Atherogenic lipoproteins: which, when, and how to quantify on-line, <u>Click here for information</u>
24 November 2022	30 November 2022
EFLM Lessons in Immunochemistry - Lesson n. 4: Androger excess or deficiency: the role of testosterone and free testosterone	14th CIRME International Scientific Meeting «Implementation
on-line, <u>Click here for information</u>	•
1-2 December 2022	13 December 2022
JIB 2022	EFLM Webinar: Artificial Intelligence in laboratory
Paris (FR), Click here for information	medicine 1 on-line, Click here for information
09-10 February 2023	21-25 May 2023
Labquality Days 2023 Helsinki (FI),	EuroMedLab 2023 - 25th IFCC-EFLM European Congress of Clinical Chemistry and Laboratory Medicine Rome (IT),Click here for information