



# eNews



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International Federation of Clinical Chemistry and Laboratory Medicine



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## In Memoriam

### Prof. Gérard SIEST

*by Bernard Gouget*

*Chair, IFCC Nominations Committee*

*Chair, IFCC General Conference-Madrid, March 2016*

It is with great sadness that we inform you of the death of our colleague Gérard Siest in Rome on 9 April 2016 at 80 years of age. Gérard Siest was born on 13 May 1936 in Hayange (Moselle). He received his degree in pharmacy in 1959, his *Licence ès sciences* in 1965 and his Doctorate in Pharmaceutical Science in 1966. As Professor at the faculty of Pharmacy, he taught biochemistry from 1974 to 2006. His whole career was spent in Nancy.

Dr. Siest was Chairman of the Science Council of the Nancy I University biology and pharmaceutical Science Council from 1979 to 1990. He was Dean of the Nancy I biology and pharmaceutical science faculty from 1978 to 1982 and Vice-Chairman of the Nancy I University from 1979 to 1989. He was elected to the French National Academy of Pharmacy as a national representative, becoming a member of the 2nd Section in 1995 and then the 3rd Section in 2011. He was also a member of the Belgian Academy of Medicine. He was a Knight of the Order of the Academic Palms (1984) and of the French National Order of Merit (1992).

He was the Director of the Centre for Preventive Medicine in Vandoeuvre-lès-Nancy (1968-2005). Starting in 1970 he initiated quality control for medical biology laboratories, which remains today a major activity with continuing training by the Association Biologie Prospective.

In Lorraine he was the founder and tireless organizer of the Biologie Prospective Colloquia in Pont à Mousson (1970-1996 and 2006), which brought together



highly influential experts and attracted the entire international medical biology community. In Pont-à-Mousson's conference centre of Abbaye des Prémontrés were born the theory of reference values; the reconciliation of the drug therapies, enzymology, biochemistry, epidemiology and pharmacogenetics of cardio-vascular disease; the beginnings of precision medicine, and new concepts in managing and organizing medical biology labs. These events changed the way people saw clinical biology and brought Dr. Siest international

renown among medical biologists, manufacturers and people in healthcare generally.

The Pont-à-Mousson meetings took on a new life in Santorini, Greece, where they were arranged in collaboration with his wife, Prof. Sophia Viskivis, as the Biologie Prospective Santorini Conferences, devoted to personalized medicine and genetics and held under the auspices of the European Society of Pharmacogenomics and Personalised Therapy (ESPT), which he chaired from 2011 forward.

As Chairman of the French Clinical Biology Society (SFBC) in 1984-1985, he fostered numerous international collaborations with medical biology societies in other nations. In this regard he set up a joint commission between the SFBC and Spain's SEQC concerning reference values, which was a precursor to uniform international standards and the establishment of reference laboratories. By getting national societies to spur each other on, he was able to develop joint international projects that enhanced the visibility

*Article continued on next page*

of medical biology and its importance in the patient pathway. He sat on the board of directors of numerous international institutions.

His enthusiasm and forward thinking led him to chair the International Federation of Clinical Chemistry (IFCC) from 1991 to 1996. He established the notion of laboratory medicine, which he had added to the IFCC's motto. During this time, the International Federation saw its greatest growth in countries seeking membership. During his chairmanship, he established the technical secretariat in Nancy, he re-organized the IFCC structure by creating the Education and Management Division and the Congresses and Conference Divisions. He inspired the creation of the European Federation (FESCC) and the EC4. He formalized collaborations with WASPaLM and he finalized the agreements with COLABIOCLI and APFCB. He established also the link with IRMM for reference materials. Lastly, he helped a great many French people join the IFCC. His reputation was critical to the IFCC's/ EFLM's auspices of EuroMedLab Paris 2015.

His intense international activity brought him honorary memberships in a number of scientific societies and honorary doctorates from several universities. He was also a member of the European Medications Agency (EMA) in London.

He is the author of over 834 articles and dozens of books and directed several publications. His work was recognized in 27 prestigious awards from the most celebrated scientific institutions in 16 countries. He

was managing editor of Clinical Chemistry and Laboratory Medicine (CCLM) from 1998 to 2009, turning it into a fixture of the international scientific world that would become the official journal of the European Federation of Clinical Chemistry and Laboratory Medicine (EFLM), published by Walter de Gruyter. In addition, he held many editorial posts including editor-in-chief of *Drug Metabolism and Personalized Medicine* (2010-2015), and member of the editorial board of *Nutrition, Metabolism and Cardiovascular Disease* (since 2004), *Pharmacogenomics* (since 2005), *Personalized Medicine* (since 2005), *Pharmacogenomics and Personalized Medicine: Advances and Applications* (since 2010).

His personality was one-of-a-kind. He was always an energetic, tireless and tenacious worker. As was clear in Madrid at the IFCC General Conference (18-20 March 2016), his mind was full of plans and projects. We have just lost a talented colleague and an irreplaceable, visionary person — extraordinary in so many respects — who inspired several generations of professionals. He gave us a tremendous amount both in terms of science and of promoting a major discipline, medical biology and laboratory medicine.

We share the grief of those dear to him and of his very many friends and colleagues. Our thoughts and feelings are with his wife, his children and his family.

The religious ceremony was held on 20 April 2016 in Bernécourt 54700 (Meurthe et Moselle, Franc).

Gérard, we shall not forget you!



## News from the IFCC Website

### APFCB News 2015

The Asia-Pacific Federation for Clinical Biochemistry and Laboratory Medicine News 2015 is now available. Read more below to access a copy and catch up with all the news and future projects announced in the opening message by the APFCB President, Dr Lai.

[Read More](#)

## Launching the IFCC eNews Flash

by **Tahir Pillay**  
eNews Editor



Dear IFCC member,

The Executive Committee of the CPD has decided to launch an additional form of news delivery: the **eNews Flash**.

The purpose of this is to inform the IFCC community of newsworthy and important items that do not require a full article and could be conveyed in a short message easily accessible to the busy reader.

This message is an inaugural version to highlight a new advance in the publication of the eJournal.

I urge you to keep a lookout for more messages carrying the **IFCC eNews Flash**.

Regards,  
*Tahir Pillay*



## The Electronic Journal of the IFCC (eJIFCC) accepted for indexing by MEDLINE/PUBMED

by **Khoshrow Adeli**  
Chair, IFCC Communications and Publications Division

The Journal of the International Federation of Clinical Chemistry  
and Laboratory Medicine



IFCC, the leading organization in the field of Clinical Chemistry and Laboratory Medicine worldwide announces that the **Electronic Journal of the IFCC (eJIFCC)** has been accepted by the National Library of Medicine for indexing in MEDLINE/PUBMED. All issues of the journal will be indexed and searchable, downloadable, citable from PubMed in the near future.

Dr Khosrow Adeli, IFCC Communications and Publications Division Chair, says: "This is an important step

forward for IFCC as PubMed indexing significantly improves access to eJIFCC articles and will promote IFCC internationally. I would like to thank the eJIFCC Editor in Chief, Professor Gabor Kovács as well as the Editorial Board and other members of C Communications and Publications Division for their contributions to this important achievement. eJIFCC has seen a major improvement in both scientific content and publication format over the past few years again thanks to tireless efforts of the editor and the editorial board".

The electronic Journal of the IFCC (eJIFCC) is a platinum open-access journal, i.e. there is no charge to read, or to submit to this journal. Its numerous high-quality articles, debates, reviews, case studies and editorials focus on laboratory medicine and are of special interest to clinical laboratorians worldwide. The journal also publishes general news articles, and educational materials and has a letters section. Besides offering original scientific thought in

its featured columns, eJIFCC provides links to quality resources on the World Wide Web. It aims to assist the development of the field of clinical chemistry and laboratory medicine worldwide. Manuscripts are fully peer reviewed and immediately free to access and download from:

[http://www.ifcc.org/ifcc-communications-publications-division-\(cpd\)/ifcc-publications/ejifcc-\(journal\)/](http://www.ifcc.org/ifcc-communications-publications-division-(cpd)/ifcc-publications/ejifcc-(journal)/) and now from *PubMed*.



## The IFCC Medal for Outstanding Service

by **Maurizio Ferrari**  
IFCC President

### Introduction:

The IFCC Executive Board has agreed to introduce the IFCC Medal for Outstanding Service (hereinafter 'The Medal') in recognition of sustained service to IFCC by an individual at the highest level in promoting the international practice of clinical chemistry and laboratory medicine. The first award of The Medal will be made in 2017 and nominations are now being sought with a closing date of 31<sup>st</sup> December 2016.

### Eligibility:

Individuals who are eligible to receive The Medal will be members of an IFCC Full or Affiliate Member Society or an IFCC Corporate Member Company. To be eligible individuals will have worked in a voluntary capacity at a global or multi-national level over a period of at least ten years during which they will have served in a voluntary capacity for IFCC for a minimum of six years. Eligible individuals will have made an exceptional contribution to promoting the practice of clinical chemistry and laboratory medicine. Serving Members of the IFCC Executive Board are not eligible for nomination.

### Nomination Process:

Nominations for The Medal should be submitted by the IFCC Member to the IFCC Secretary by 31 December each year. Nominations should comprise:

➤ A letter of nomination on headed notepaper,

which explains the outstanding international contribution made by the nominee

➤ A copy of the Curriculum Vitae of the nominee

Nominations may be accompanied by at least three letters of support that illustrate how the nominee meets the eligibility criteria.

### Process:

The Medal is awarded on the recommendation of the IFCC Executive Board and is ratified by the IFCC Council without appeal. The Medal is presented at an IFCC WorldLab congress, or an IFCC Regional Federation congress or the IFCC General Conference. There is no limit on the number of Medals presented but the eligibility criteria suggest that the number will be small. There is no requirement to award The Medal in any triennial period.

### Recognition:

A short article will be published in IFCC News to recognise each recipient of The Medal. The names of recipients of The Medal will be listed in the IFCC Handbook and in the IFCC website

### The Medal:

The Medal will comprise a medallion in a presentation box. The Medal will bear the IFCC logo, the name of the recipient and the year in which it was awarded. No honorarium is attached to the award.

# 'Shaping the future of laboratory medicine' Opportunities and challenges for laboratory medicine specialists in modern healthcare

*by Graham Beastall*  
*IFCC Past-President*  
*David Kinniburgh*

*North American Federation of Clinical Chemistry and Laboratory Medicine (NAFCC) Representative*



## Introduction

This is the third article on 'Shaping the Future of Laboratory Medicine' to be published in IFCC e-News during 2016. Feedback from the articles in the previous two issues of e-News has indicated that readers find them thought provoking and a stimulus for discussion at the local level.

This article is an opinion paper written by two members of the IFCC Executive Board. It is based on issues identified in laboratory medicine (LM) communities around the world. This newsletter article is an overview rather than a detailed scientific treatise. Seven topic areas have been identified. In each case there is a broad statement from which illustrative opportunities and challenges may be identified. A general comment is included for each area.

### 1. Centrality of Laboratory Medicine to Healthcare

#### **Statement:**

LM results influence a high percentage of all clinical decisions, meaning that LM is central to modern

healthcare. However, this is not always recognised and LM is undervalued.

#### **Opportunities:**

- Achieve LM input to multidisciplinary teams and clinical networks at local and national level
- Establish interactive links with primary care centres and patient organisations
- Provide clinical interpretation and advice on appropriate use of the laboratory to users and directly to patients

#### **Challenges:**

- To convince users that LM is a service provider, not a numbers factory or a commodity
- To present LM as a coherent clinical specialty and not several separate sub-specialties

#### **Comment:**

The centrality of LM in healthcare places a responsibility on laboratory specialists to understand the requirements of users and assist them to use the LM service for maximum clinical benefit. This will mean working outside as well as inside the laboratory.

### 2. New Technology and Locations for Delivery of Laboratory Medicine

#### **Statement:**

Rapid advances in technology are leading to higher quality and a wider repertoire of LM services. Technology is also enabling LM services to be provided outside traditional clinical laboratories.

#### **Opportunities:**

- Adopt new technology that facilitates the production of faster, higher quality results and positive clinical outcomes
- Adopt and be responsible for quality management

of point of care testing (POCT) in a range of hospital and community based healthcare settings

- Introduce informatics to facilitate new ways for interpreting and delivering data. For example, analysing 'big data' and reporting results via smart phone apps

#### **Challenges:**

- To accommodate disruptive technologies that change testing strategies
- To avoid the uncoordinated introduction of new technology outside the laboratory

#### **Comment:**

Technological advance is at the core of LM in a modern healthcare system. That technology is likely to be used more frequently outside the laboratory, closer to the patient. LM specialists and their partners in the diagnostics industry should promote the benefits of integrated diagnostics, including effective connectivity.

### **3. Managing the Costs of Laboratory Medicine**

#### **Statement:**

Every country is struggling to manage the financial demands of modern healthcare. LM services are visible targets because our workload and costs can be measured.

#### **Opportunities:**

- Strengthen business and management training for LM specialists
- Present LM as part of the cost of patient investigation rather than an isolated cost
- Engage positively with those responsible for reimbursement schedules
- Lead projects aimed at appropriateness of testing (also known as laboratory utilisation)
- Consider service rationalisation and smarter ways of working to improve laboratory cost effectiveness

#### **Challenges:**

- To convince clinical users that laboratory costs are central to effective clinical care
- To convince managers that appropriate use of LM can reduce overall healthcare costs

- To introduce new, improved services in an environment of financial restraint

#### **Comment:**

Demonstrating cost effectiveness is a responsibility for LM specialists. Positive engagement with users and management at local and national levels should focus on LM costs as part of the patient pathway rather than being considered in isolation.

### **4. Evidence Based Laboratory Medicine and Increasing Clinical Effectiveness**

#### **Statement:**

Evidence based laboratory medicine (EBLM) is being widely appreciated and adopted into clinical practice guidelines. There is a need to demonstrate that the appropriate use of LM services can increase clinical effectiveness and facilitate improved clinical outcomes.

#### **Opportunities:**

- Provide training in EBLM at national level and be involved in EBLM studies
- Participate in the preparation of clinical practice guidelines at national level and implementation at local level
- Produce examples to demonstrate how LM can increase clinical effectiveness

#### **Challenges:**

- To blend adherence to EBLM rules with what may be achieved in practice
- To obtain and use evidence to convince service users to change practice

#### **Comment:**

LM specialists at local, national and international levels should practise EBLM and become familiar with the scientific and medical literature that provides evidence of the role and clinical effectiveness of appropriate laboratory investigations.

### **5. Research, Development and Innovation in Laboratory Medicine**

#### **Statement:**

Advances in understanding the genetic and molecular basis of disease are leading to new biomarkers and



algorithms that need to be evaluated before being translated into clinical practice.

**Opportunities:**

- Consolidate research, development and innovation as an integral component of the training of LM specialists
- Use the scientific training of LM specialists to facilitate collaborative clinical and translational research
- Encourage LM specialists to be co-investigators in major research programmes

**Challenges:**

- To protect research time for laboratory scientists in an environment of financial constraint
- To demonstrate the importance of innovation as part of modern healthcare

**Comment:**

LM specialists are ideally placed to participate in collaborative research, especially translational research and service innovation. Research, development and innovation should be an essential element of the training of LM specialists.

## 6. Laboratory Medicine in Emerging Nations

**Statement:**

Investment in healthcare is a priority for most emerging nations. The importance of quality laboratory medicine services is often under-appreciated.

**Opportunities:**

- Promote the central role of LM in modern healthcare. Modest investment in equipment and staff for core services will have a huge impact on public health
- Use external sources and e-learning opportunities to improve quality in LM services

**Challenges:**

- To introduce modern equipment to improve quality and service repertoire amid financial constraint
- To introduce a career structure and training in LM to the standards and with the skills required to deliver modern laboratory services

**Comment:**

Investment in improving the quality of LM services is an essential component of improving healthcare

outcomes in emerging nations. Support materials are required to enable trained LM specialists to convince those responsible for policy and budget allocation.

## 7. Adding Value to Laboratory Medicine

**Statement:**

LM specialists should add value to essential high quality results to enable data to be converted into knowledge for the benefit of users, patients and the public worldwide.

**Opportunities:**

- Facilitate harmonisation of LM protocols, parameters and methods at national and international level
- Promote the value of LM to local users, patients and the public
- Utilise technology and innovation to enhance the clinical impact of test results
- Demonstrate the value of LM to healthcare commissioners at national level

**Challenges:**

- To designate time and resources for identifying and promoting added value
- To share examples of practice where added value has been demonstrated

**Comment:**

Adding value is a broad topic of growing importance with implications at local, national and international level. A future article for IFCC e-News will summarise the work of a collaboration between global LM organisations on 'adding value'.

### Conclusion

This brief article illustrates some of the opportunities and challenges for LM in the near future. The statements under each of the seven headings are not controversial. The extent to which the opportunities and challenges will be realised will vary by country and locality, and also by the extent to which LM specialists are willing to take a leading role. Readers are encouraged to interpret this article in their local context and send their comments to [gbeastall@googlemail.com](mailto:gbeastall@googlemail.com) so that these may be summarised in the next article.

The IFCC TF-YS welcomes our new young corresponding members Miswar Fattah (Indonesia), Lena Jafri (Pakistan), Ahmad Mohammad Ibrahim Salah (Jordan Aff.), Paul Hamilton (UK), Tetyana Kheylomska (Ukraine Aff.) joining the global team.

The International Federation of Clinical Chemistry & Laboratory Medicine (**IFCC**) recognized the need for a support group to help young scientists for promoting the essential contribution of laboratory medicine at the centre of healthcare. Thus to address these challenges, the Task Force - Young Scientists (**TF-YS**) was constituted in 2010. For the purposes of definition a young scientist is a medical or science graduate working or training in laboratory medicine. He/she will normally be aged less than 40 years at the time of appointment to work with TF-YS.

The aim of TF-YS is to ensure that young scientists make a significant and growing contribution to the

activities of IFCC and other National programmes. So, IFCC-TF YS is devoted to prepare young scientists with ongoing changes in laboratory medicine and health-care practices. The specific objectives were identified as Networking, Training, Participation & Multidisciplinary exchanges of different fields & different ideas.

The TF-YS has created a strong young scientists support group involving more than 30 global IFCC member countries supported by the senior society members worldwide including seven Core members with one Chair & one Consultant, 25 Corresponding members, one IFCC-EB as Liaison Officer. We also have our additional larger online network of young scientists covering global regions. This is to learn, participate and to take control and responsibility of their careers, initiating their own educational and training programmes to face future challenges of Laboratory Medicine.



*IFCC TF-YS members at the Social evening on the Bateau Mouche in Paris on occasion of the EuroMedLab Congress, 21-25 June 2015*

We use modern information technology & social media to establish networks and facilitating the communication, 24/7 using Facebook, Twitter, Linked In and others. We partnered with other National and International societies to deliver educational workshops, trainings, mentorship programmes to learn perspectives & principles of Laboratory Management & Leadership. TFYS initiated few projects including a global study **"IFCC TF-YS Survey"** to address the key challenges that YS are facing globally both in terms of qualification & career. This study may help to generate need based activities and expected to summarise by 2016. The **"IFCC TF-YS Mentorship Programme"** Phase I interview is already published on TF-YS webpage. This is to emphasize the importance of mentorship. The **"Research Booklet"** was published in March 2016 which is contributed by senior members of IFCC and APFCB giving overview of writing a research project. TF-YS introduced first time, the **"ACBI-IFCC TF-YS Young Scientists Award 2015"** with ACBICON-2015 organising committee, India to help giving registration,

travel and accommodation to 5 selected YS to present their papers at conference. We have **"Webinars"** and **"Lab Surfing"** (online YS database with live networking to help each other) in pipeline to be introduced in 2016. So, TF-YS is working with commitment to help the new generation facing challenges in the field of laboratory medicine.

All IFCC Member societies are invited to nominate young scientists to serve as corresponding members of TF-YS. Corresponding members receive communications and are often involved with specific tasks related to the activities of the Committee. IFCC Members are encouraged to support their YS member financially for attending annual meetings. IFCC Members are also encouraged to form a national network for YS that can work closely and participate in the activities of IFCC TF-YS.

For more information, visit our website:

<http://www.ifcc.org/task-force-young-scientists-web-pages/>

## The 2nd IFCC Symposium on Biomarkers in Alzheimer's Disease

*by Rosa Sierra-Amor*

*Member, IFCC Executive Board*

*Sergio Bernardini*

*Secretary, IFCC Executive Board*

Mexico City hosted the Second IFCC Symposium on Biomarkers in Alzheimer's Disease (AD), at the Hotel Camino Real Polanco on May 20th, 2016. It was a top-class conference with more than seventy attendees and an excellent scientific programme.

During the Symposium, the speakers addressed the following concerns:

### **The bad side of the coin**

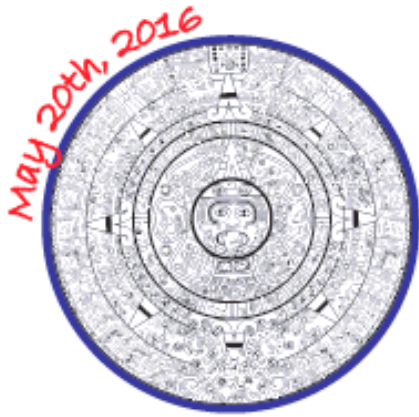
"We are waiting for a big wave of AD all over the world. That's for sure! Currently we don't have reliable blood tests for screening, no prevention programmes, no an effective cure" (*Ralph Martins*).

"The Neuropathology is very complicated. It is not a YES or NO as in other diseases (cancer) but HOW MUCH is that? Very often the different kind of histological aggregates (Ab, a synuclein, TDP-43, CVD) are superimposed, almost nothing seemed to be pure." (*Johannes Attems*)

"Impressive has been the analysis of preanalytical confounders, there is a huge preanalytical and analytical variability as well as variability in cut off values". (*Armand Perret Liaudet*),

"In many countries the laboratory diagnosis of neurodegenerative diseases cannot be set up because of financial constraints and paradoxically in this countries the prevalence is higher" (*Maria-Esther Jimenez-Capdeville*).

*Article continued on next page*



## BIOMARKERS IN ALZHEIMER'S DISEASE



Mexico City, Camino Real Hotel  
May 20<sup>th</sup> 2016, 09.30- 19.30

*With the support of Roche Diagnostics*

### The good side of the coin

"Lifestyle factors, and in particular physical exercise and MeDi can influence a bit the outcome. Hormonal environment and in particular testosterone, oestrogens and insulin resistance can be targets of a supportive treatments" (*Ralph Martins*).

"Ab1-42, tau and P-tau are robust biomarkers for diagnosis and progression and start to be pathologically positive 15 years before the onset of symptoms" (*Kaj Blenow*).

"Neuroimaging (with PET tracers) and laboratory analyses start to be integrated between them and with clinical data as in the IWG2 Criteria. And this will be really important to stratify patients in clinical trials. Moreover tau tracers will be available soon" (*Leslie Shaw*).

"Advancements in Genomic Medicine are ongoing and possibly will be able to intercept candidates for AD. Technological improvements are available as Next Generations Sequencers make it possible to study quickly APP1, Presenilins for EOAD and many minor candidate genes for LOAD as ApoE4, and other candidates such as clusterin, ABCA7, REM2, PLD3, MAPT, Progranulin, C9orf72 as well as immunoresponse and endocytosis proteins coding genes" (*Maurizio Ferrari*).

"Even targeted proteomics of CSF seems to be promising and many studies are ongoing less invasive matrices" (*Sergio Bernardini*)

"New diagnostic approaches are coming as the Retinal amyloid Fluorescent Imaging" (*Ralph Martins*) and "pathological Tau in the epidermidis" (*Maria-Esther Jimenez-Capdeville*).

"AD Association QC programs, reference measurement procedures and Reference certified material are available in or will coming soon limiting the fonts of variability" (*Kej Blenow*).

"New biomarker: the synaptic protein neurogranin are discovered and seems to be promising" (*Kaj Blenow*).

"A Prion-like, but not infectious way of propagation can be theorized and this can be another way to interfere with the progression" (*Johannes Attems*).

"Fully automated analytical system are available" (*Richard Batrlab*) and "probably Mass spectrometry becoming more popular might be an important analytical support to diagnosis" (*Kaj Blenow*).

In summary, we could say that probably we are on the right path but we need to talk more and more about "dementia" disorders and strongly support research and educational programmes all around the world. We need to become aware of an actual health problem identifying properly Alzheimer's Disease patients, and other pathologies related to dementia.

Dr. Rosa Sierra-Amor and Prof. Sergio Bernardini, IFCC Executive Board Member and Secretary respectively, coordinated this activity. Thanks to them

for their interest in promoting and making it available to IFCC member societies. Thanks to Roche Global for their support in organizing it, and to the speakers for

making it possible to learn and hear the latest news about the importance of Biomarkers in Alzheimer's Disease.



*Speakers of the 2nd IFCC Symposium on Biomarkers of Alzheimer's Disease, held in Mexico City on May 20, 2016*



## News from the IFCC Website

### eJIFCC Vol 27 n° 2

A new issue of the eJIFCC is now available. eJIFCC Vol 27, n°2 celebrates the 70th Anniversary of the Hungarian Society of Laboratory Medicine. Thanks to the work of Dr. Kappelmayer and other contributors, you will see how the history of laboratory diagnostics is the true tale of the spectacular medical and technical developments of the past decades; will have the demonstration of the multivalency of our discipline; and will appreciate how dedicated colleagues from Hungary, considerably contributed to the development of laboratory medicine.

[Read More](#)



## IX National Congress of the Cuban Society of Clinical Pathology (CONAPAC)

by Rosa I. Sierra- Amor  
Member, WG-eNews

The Convention Center Palace, at La Havana, Cuba, a city full of colour, very large avenues, a long boulevard, cafes and colonial atmosphere was the venue of the IX National Congress of Clinical Pathology, organized by the Cuban Society of Clinical Pathology (CONAPAC), from 9-11 March 2016.

Four pre-congress workshops were organized at three different health institutions from 8-9 March 2016. Immediately after and along with the congress programme, an international workshop on “*Method verification to verify manufacturer’s performance*” was delivered by the Latin American Working Group of the American Association for Clinical Chemistry, AACC. Other organizations participated as well, among them, the Spanish Society of Clinical Chemistry and Molecular Pathology, SEQC, and speakers from Argentina, Chile, France, Germany, Mexico, San Martin, and the United States. The first International Symposium on Laboratory Accreditation included several aspects related to traceability, risk management, cost analysis, and proficiency testing, followed by 24 conferences on laboratory medicine, 4 Round table discussions, and 112 poster presentations. Topics on Anatomy Pathology were also part of the program. In addition, there were 250 national and 68 international delegates from Japan, Ecuador, Mexico, and Panama. The lab exposition was represented by 11 different distributors from Cuba and the Caribbean.

The Key lecture was given by Dr Carl A. Burtis from the US on the History and Future of Clinical Chemistry during the Opening ceremony. The Hotel El Nacional was the venue for the Speaker’s dinner, where the local ballet dancers entertained the audience. During the Closing ceremony, Dr. Abraham Marcel, President of CONAPAC, the Congress Organizing Committee members, and Manuel Morejon, MSc, IFCC National Representative, thanked the attendees and speakers for their participation.



Cathedral of La Havana, Cuba



From left to right: President Abraham Marcel, and invited speakers - Robert Rej, Carl Burtis, Rosa Sierra-Amor, with Manuel Morejon, IFCC National Representative during the Closing ceremony of the IX National Congress of Clinical Pathology, in La Havana from March 9-11, 2016



## Merging horizons in laboratory medicine: IFCC and SEQC Young Scientists joint meeting

by **Claudia Imperiali**

*Hospital de Bellvitge, Barcelona, Spain*

**Josep Miquel Bauçà**

*Hospital Universitari Son Espases, Palma, Spain*

In March, the IFCC General Conference took place in Madrid, with the participation of all working group members, as well as delegates from the different national societies. Among several lectures and conferences about the future directions of IFCC, a special meeting took place between the resident group of the Spanish Society of Clinical Biochemistry (SEQC) and the Task Force Young Scientists (TF-YS) of the IFCC, organized by Guilaine Boursier and Josep Miquel Bauçà.

The meeting was held at the University Hospital La Paz, one of the biggest and with highest workload in Madrid, and a total of 25 people of different continents attended it. The meeting was opened by Pradeep Kumar (Chair of TF-YS, India), who introduced the past and present activities of the TF-YS group, highlighting the increase in the activity on the social networks, the importance of research in the professional development of a specialist in laboratory medicine and the visibility of the young scientists.

This introduction was followed by an interesting contribution by Santiago Fares Taie (Argentina), who announced a new three-way collaboration among Argentina-France-Spain to promote resident international mobility, and the creation of a website to improve communication regarding hospital possibilities and accommodation. Dr. Antonio Buño, Head of Department of Laboratory Medicine in the University Hospital La Paz, illustrated the organization of the public healthcare network in Madrid and at the hospital he works at. Moreover, he arranged a comprehensive guided visit to the Core Laboratory himself, and discussed any topic with the attendees.

Claudia Imperiali, resident in University Hospital Bellvitge (Barcelona), presented the residency system in Spain, from the basic application requirements to the evaluation system and the skills needed to obtain the specialist diploma. After a short break with vivid conversations, Josep Miquel Bauçà stepped in to explain about transversal abilities during the training in laboratory medicine, and the possibilities of learning beyond the selected hospital in Spain. He pointed out the external stay programs (within Spain or abroad), the participation in SEQC working groups, as well as the post-residency scholarships awarded in their country.

In a joint presentation by Guilaine Boursier (France) and Danni Li (USA), the need for proper mentorship programs was discussed, and they further explained the recent agreement for international mentorship programs aiming at helping residents from developing countries. An extensive round table allowed debate of the presented topics, and residents from Spain could better learn and understand how training and organization were in other countries.

The closing speech was carried out by Omolara Olutosin (Nigeria), who briefly exposed the organization to the working conditions in her region, along with the need for better communication among countries for more effective learning and towards a better healthcare service.

Altogether, and thanks to this joint meeting, a path was established to promote synergies and cooperation worldwide among young scientists and boost laboratory medicine.

*Article continued on next page*



Above: Members of the Spanish Society of Clinical Biochemistry (SEQC) and the IFCC Task Force Young Scientists (TF-YS)  
Below: the group visiting the Core Laboratory in Hospital La Paz, Madrid (left) and in the IFCC GC venue (right)

## News from the IFCC Website

### New IFCC eAcademy webinar: Thyroglobulin Measurement



The latest IFCC eAcademy webinar is by Prof C. Spencer (Southern California University - US) on the topic of Thyroglobulin Measurement. Visit the eAcademy and view the webinar to learn how Thyroglobulin measurement is used as a Tumour-marker in monitoring Differentiated Thyroid Cancers.

[Read more](#)



## NEWS FROM REGIONAL FEDERATIONS AND MEMBER SOCIETIES



### The Faculty of Clinical Chemistry of the Central University of Ecuador celebrates its sixty-seventh anniversary from its foundation

### Sexagésimo Séptimo Aniversario de Creación de la Facultad de Ciencias Químicas de la Universidad Central del Ecuador - Quito

*by Maria del Carmen Pasquel  
Chair, WG-IANT*

*Regional Assessor, Fundación Wiener Lab Ecuador*

On 5 May 2016, we celebrated 190 years of the Central University of Ecuador and 67 years of creation of the School of Clinical Chemistry in Quito. The highest authorities of the Central University and the Faculty of Clinical Chemistry participated in a solemn session, held in the Auditorium "Javier Bustos Novoa".

The Central University choir sang the National Anthem of the Republic of Ecuador followed by a musical interlude; the anthem of the Central University of Ecuador closed the event.

Administrative personnel working at the Faculty, and teachers who have made their career with dedication and responsibility in the Health Sciences were recognized in the speeches and many plaques were presented in recognition for 25 and 30 years of work and dedication.

The Wiener Lab Foundation, with headquarters in the city of Rosario in Argentina, fulfilling one of its objectives to encourage academic excellence, awarded Gold Medal and Diploma of Honour to Ms. Paulina Alejandra Lucina Guerrero, who obtained the best results in Clinical Biochemistry in year 2015. Dr Maria del Carmen Pasquel, Regional Advisor for the Wiener Lab Ecuador Foundation, chaired the ceremony.



Al celebrar 190 años de fundación de la Universidad Central del Ecuador y 67 años de creación de la Facultad de Ciencias Químicas, en la ciudad de Quito el jueves 5 de mayo del presente año, se realizó la sesión solemne en el Auditorio "Javier Bustos Novoa", en la que estuvieron presentes las máximas autoridades de la Universidad Central y de la Facultad de Ciencias Químicas.

El coro de la Universidad Central entonó el Himno Nacional de la República del Ecuador

para dar inicio al acto conmemorativo, presentó un intermedio musical y finalizó con el Himno de la Universidad Central del Ecuador.

Se presentaron discursos y entregaron placas de reconocimiento por los 25 y 30 años de trabajo y dedicación a su labor administrativa, al personal que labora en la Facultad y a los docentes que han realizado su carrera con dedicación y responsabilidad al impartir su cátedra en una rama de las ciencias de la salud.

La Fundación Wiener Lab, cuya sede es la ciudad de Rosario en Argentina, cumpliendo uno de sus objetivos que es estimular la excelencia académica, otorgó medalla de oro y diploma de honor a la Srta. Paulina Alejandra Lucina Guerrero, por haber obtenido el mejor promedio en la carrera de Bioquímica Clínica 2015. La Entrega de los presentes lo realizó la Dra. María del Carmen Pasquel, Asesora Regional

*Article continued on next page*



Dr. Fernando Sempertegui,  
Dean of Clinical Science Faculty,  
Rector of Central University

Dr Fernando Sempertegui, Rector of the Central University, presented a moving speech in which he stressed the commitment of this institution to the signing of various agreements with those who work in the Central University with the National Government in support projects and research especially in the provinces of Manabi and Esmeraldas, affected by an earthquake on 16 March 2016. He expressed his congratulations on the exemplary work carried out by the Faculty of Clinical Chemistry.

Dr Isabel Fierro Waters, Dean of the Faculty of Chemical Sciences, was one of those honoured for 30 years of university teaching and began her speech with the José sentence by Ortega and Gasset:

*“You can grow when you think big, you can move when you look far-away”*

para el Ecuador de la Fundación Wiener Lab.

El Rector de la Universidad Central Dr. Fernando Sempertegui, presentó un emotivo discurso en el que destacó el compromiso de esta Institución en la firma de diferentes convenios con los que trabajará la Universidad Central con el Gobierno Nacional



Dra. Isabel Fierro

en los proyectos de apoyo e investigación especialmente en las Provincias de Manabí y Esmeraldas afectados por un terremoto el 16 de marzo pasado. Expreso su felicitación por el ejemplar trabajo que desarrolla la Facultad de Ciencias Químicas.

La Dra. Isabel Fierro Aguas, Decana de la Facultad de Ciencias Químicas, fue una de las homenajeadas por 30 años de docencia universitaria e inició su intervención con la frase:

**“SÓLO CABE PROGRESAR, CUANDO SE PIENSA EN GRANDE, SÓLO ES POSIBLE AVANZAR CUANDO SE MIRA LEJOS”**  
José Ortega y Gasset



Dra. Beatriz Vargas, Sub Decana de la Facultad de Ciencias Químicas; Srta. BIQ. Paulina Alejandra Lucina, mejor promedio 2015; Dra. María del Carmen Pasquel Asesora Regional de Ecuador de la Fundación Wiener Lab, Dr. Fernando Sempertegui, Rector de la Universidad Central del Ecuador; Dra. Isabel Fierro A. Decana de la Facultad de Ciencias Químicas; Dr. Silvio Toscano, Secretario General de Universidad Central del Ecuador.

She said that the School of Chemistry is an Academic Unit and since its creation in 1949, it has worked with scientific and academic rigour. Its prestige has been recognized in the various university authorities, and the institution can count on the commitment and dedication of all its members.

Manifestó que La Facultad de Ciencias Químicas es una Unidad Académica que desde su creación en el año 1949 ha trabajado con rigor científico y académico, y que su prestigio se ha reconocido en las distintas instancias universitarias y cuenta con el trabajo comprometido y digno, de todos sus miembros.



## The Spanish Society of Clinical Biochemistry and Molecular Pathology (SEQC) promotes residents' training

### La Sociedad Española de Bioquímica Clínica y Patología Molecular (SEQC) impulsa la formación de los residentes

# SEQC

The Spanish Society of Clinical Biochemistry and Molecular Pathology (SEQC), through its board of directors, promotes and gives new momentum to clinical laboratory specialists. To that end, the Society will increase the number of grants and double the amount granted, this year reaching €84,000.

**Dr Imma Caballé**, SEQC's president, explains that the Society is committed to residents, their future and their training. The SEQC "recognises how difficult it is to find a job once the residency has been completed and therefore we have decided to double the amount of grants and keep the residency period free of fees."

Dr Caballé adds that "our goal is to facilitate and contribute to the improvement of continued training through diverse activities, including seminars, lectures through the web, pre-congress courses, Scientific Committee sessions, the edition of monographs and documents with experts' recommendations, etc."

**Dr Dolors Balsells**, a member of SEQC's education committee and the secretary of Fundación José Luis Castaño, emphasizes the need for constant training efforts to maintain professional competencies in the clinical laboratory speciality since "scientific advances in methodology and diagnostic proceedings, instrumental techniques, robotics or information systems require that specialists in this field update their knowledge constantly."

La Sociedad Española de Bioquímica Clínica y Patología Molecular (SEQC), a través de su nueva Junta Directiva, fomenta y da un nuevo impulso a la formación de los especialistas en Laboratorio Clínico.

Para ello, aumenta el número de becas y duplica la cuantía subvencionada, alcanzando este año los 84.000 euros.

Según explica la Dra. Imma Caballé, futura presidenta de la SEQC, la Sociedad está comprometida con los residentes, su futuro y formación. *"Conscientes de la dificultad de encontrar trabajo al acabar la residencia, hemos decidido duplicar la cuantía de las becas y aumentar a todo el periodo de residencia la gratuidad de las cuotas"*.

*"Nuestro objetivo –añade– es facilitar y contribuir a la mejora de la formación continuada, mediante diversas actividades que incluyen desde seminarios, lecciones magistrales a través de la web, cursos precongresuales, jornadas del Comité Científico, edición de monografías y documentos con recomendaciones de expertos, etc."*

En este sentido, la **Dra. Dolors Balsells**, miembro del Comité de Educación de la SEQC y secretaria de la Fundación José Luis Castaño subraya la necesidad de realizar un constante esfuerzo en la formación para mantener las competencias profesionales en la especialidad de Laboratorio Clínico. *"Los avances científicos en la metodología y procedimientos diagnósticos, en técnicas instrumentales, en robótica o en los sistemas de información hacen necesario que los especialistas en este campo deban actualizar sus contenidos constantemente"*, apunta.

In order to support residents' and post-residents' training in the different areas of clinical laboratory, SEQC –through Fundación José Luis Castaño– has launched this year **seven post-residency grants**, twice as many as in previous editions (financed equally by Fundación and SEQC).

Por ello, para apoyar la formación de los residentes y post-residentes en las distintas áreas del Laboratorio Clínico, la SEQC -a través de la Fundación José Luis Castaño- convoca este año **siete becas post-residencia**, el doble que en ediciones anteriores (financiadas la mitad por la Fundación y la mitad por la SEQC).



## First EAS - EFLM consensus guideline on non-fasting lipid testing and reporting

by **Michel R. Langlois**

Chair, EFLM Task & Finish Group on Laboratory Testing for Dyslipidemia (TFG-LTD)

### EAS-EFLM Consensus Panel

#### **EFLM TFG-LTD members:**

Michel Langlois – Belgium (co-chair),

Hannsjörg Baum – Germany, Pulkki Kari – Finland, Christa Cobbaert – The Netherlands, Grazyna Sypniewska – Poland.

#### **EAS members:**

Børge Nordestgaard – Denmark (co-chair),

Jan Borén – Sweden, Olivier Descamps – Belgium, Arnold von Eckardstein – Switzerland, Olov Wiklund – Sweden.

**Invited experts:** Eric Bruckert – France, John Chapman – France, Pia Kamstrup – Denmark, Genovefa Kolovou – Greece, Florian Kronenberg – Austria, Anne Langsted – Denmark, Samia Mora – USA, Alan Remaley – USA, Nader Rifai – USA, Emilio Ros – Spain, Gerald Watts – Australia.

New recommendation of the *European Atherosclerosis Society (EAS)* and the *European Federation of Clinical Chemistry and Laboratory Medicine (EFLM)* Joint Consensus Panel suggests that fasting blood sampling is no longer necessary for lipid testing. Indeed, studies of the Consensus Panel suggest that postprandial effects do not weaken, and even may strengthen, the risk associations of lipids with cardiovascular disease.

New research from Denmark, Canada and the US involving more than 300,000 individuals showed that most lipid measurements differ minimally when performed non-fasting or fasting, with negligible changes

for HDL cholesterol, slight changes (up to 8 mg/dL) for total cholesterol, LDL cholesterol, and non-HDL cholesterol, and modest increases (up to 25 mg/dL) for triglycerides. These changes are clinically insignificant: large prospective studies over the past several decades have consistently found that non-fasting lipids show either similar – or sometimes even stronger – cardiovascular risk associations compared with fasting lipids.

Non-fasting cholesterol measurements include 'remnant cholesterol', a strong causal risk factor for developing atherosclerosis independent of LDL cholesterol. 'Remnant cholesterol' is the cholesterol in all triglyceride-rich lipoproteins: in the fasting state this is the cholesterol in VLDL particles and their remnants, in the non-fasting state this includes the cholesterol in chylomicron remnants. Postprandial accumulation of remnants contributes to the development of atherosclerosis because, like LDL particles, small remnant particles are easily trapped inside the arterial vascular wall. The atherosclerotic potential of remnants is underestimated in the traditional fasting lipid profile. Non-fasting lipid tests are therefore more relevant for the assessment of cardiovascular risk than fasting tests.

Remnant cholesterol is included in 'non-HDL cholesterol', calculated as total cholesterol – HDL cholesterol. Non-HDL-cholesterol (or apolipoprotein B, the molecule carried by non-HDL particles) is a comprehensive marker of all atherogenic lipoproteins – LDL, remnants, and Lp(a). Non-fasting lipid tests allow to

Test	Desirable value
Triglycerides	Fasting <1.7 mmol/L (150 mg/dL) Nonfasting <2 mmol/L (175 mg/dL)
Total cholesterol	<5 mmol/L (190 mg/dL)
LDL cholesterol	<3 mmol/L (115 mg/dL)
Non-HDL cholesterol	Fasting <3.8 mmol/L (145 mg/dL) Nonfasting <3.9 mmol/L (150 mg/dL)
HDL cholesterol	>1 mmol/L (40 mg/dL)
Apolipoprotein A1	>1.25 g/L (125 mg/dL)
Apolipoprotein B	<1.0 g/L (100 mg/dL)
Lipoprotein(a)	<50 mg/dL

assess the total spectrum of cholesterol: “the good (HDL), the bad (LDL), and the ugly (remnant) cholesterol”!

The 2016 EAS-EFLM Consensus Panel provided specific cutpoints for desirable fasting and non-fasting lipid concentrations to be reported by the laboratories (Table). The Panel defined elevated non-fasting triglycerides as  $\geq 175$  mg/dL ( $\geq 2$  mmol/L) and recommended repeat fasting measurement is necessary when non-fasting triglycerides are  $>400$  mg/dL. They recommend flagging of alert values for life-threatening conditions on the laboratory reports, such as triglycerides  $>880$  mg/dL (chylomicronemia syndrome with risk of acute pancreatitis) and LDL cholesterol  $>190$  mg/dL (Familial Hypercholesterolemia).

This is the first international recommendation for non-fasting lipid testing in routine clinical practice. In Denmark a non-fasting lipid profile has been the standard since 2009. It is well-known that fasting is not practical for patients, especially for patients with diabetes or other medical conditions that make it difficult to fast, and for children. Most patients are not fasting when they are initially evaluated by their doctors, meaning that patients often have to return on an alternate day for fasting blood sampling and

a repeat visit to the doctor is necessary. For the laboratories, requiring routine fasting samples reduces workflow efficiency due to the early morning congestion of blood samples. All these factors contribute to lack of efficiency in the healthcare system and to increased healthcare costs. These problems disappear by using non-fasting lipid tests.

This recommendation is the result of fruitful collaboration between the EAS and the EFLM *Task and Finish Group – Laboratory Testing for Dyslipidemia* (TFGLTD), involving 21 World medical experts from Europe, Australia, and the US.

### Reference

Nordestgaard BG, Langsted A, Mora S, Kolovou G, Baum H, Bruckert E, Watts GF, Sypniewska G, Wiklund O, Boren J, Chapman J, Cobbaert C, Descamps O, von Eckardstein A, Kamstrup PR, Pulkki K, Kronenberg F, Remaley AT, Rifai N, Ros E, Langlois M. Fasting is not routinely required for determination of a lipid profile: Clinical and laboratory implications including flagging at desirable concentration cut-points. A joint consensus statement from the EAS and EFLM. *Eur Heart J*. 2016 [Epub ahead of print] <http://eurheartj.oxfordjournals.org/lookup/doi/10.1093/eurheartj/ehw152>



## EFLM campaign for the harmonization of the units of measurement

by Ferruccio Ceriotti

EFLM WG-H Chair

on behalf of the EFLM WG-Harmonisation in Total Testing Process

Following last year's survey on Harmonisation activities, the EFLM WG-H intends to start a campaign for the harmonization of units of measurement.

The campaign is articulated in various steps and, to be effective without generating confusion among the patients and the clinicians, it should be coordinated within each country and, possibly, amongst countries. For this reason we are proposing a series of dates for the implementation of these changes and of suggestions on how to implement them effectively.

In the following document, you can find the first two steps proposed. A third one will be the promotion of the use of mmol/L for reporting electrolytes (Sodium, Potassium, Chloride, Calcium, Magnesium and Inorganic Phosphate), a specific document will be prepared and distributed afterwards.

The WG is closely working with EFLM National Societies to explore the feasibility of the project.

### HARMONISATION OF THE UNITS OF MEASUREMENT

#### Step 1: Change from mL to L as unit of volume

As indicated by Dybkaer and Jorgensen 50 years ago (1), the litre (or liter), symbolized "L", is the recommended unit of volume. Despite this clear recommendation, very frequently the millilitre "mL" is still used as unit of volume. Changing from mL to "L" is very easy, the numbers will not change. A single time warning to the clinicians and general practitioners "Please note the new units" will be sufficient.

Here below a non-exhaustive scheme of the requested changes.

From	To
mg/mL	g/L
µg/mL	mg/L

ng/mL	µg/L
pg/mL	ng/L
µU/mL	mU/L
mU/mL	U/L
AU/mL	KAU/L

(1) Dybkaer K, Jorgensen R. *Quantities and Units in Clinical Chemistry. Including Recommendation 1966 of Commission on Clinical Chemistry of IUPAC and IFCC.* København: Munksgaard, 1967

**By July 15 2016, all laboratories are asked to have in place this type of reporting.**

#### Step 2: Change to the litre for reporting protein concentration

In the same paper of 1967 (1) Dybkaer and Jorgensen indicated that the "decilitre" (dL) is not a recommended unit. All the laboratories that are still reporting **plasma proteins** in mg/dL or g/dL should change to **mg/L** or **g/L**. In fact the reporting of the same protein (e.g. C-reactive protein) in mg/dL by some laboratories and in mg/L by some others may induce wrong interpretations by the clinicians, posing the patient safety at risk. This change will introduce a 10 or 100-fold modification of the numbers and must be carefully prepared.

There are three groups of possible changes:

#### 1. From mg/dL to mg/L: results will increase 10 times

P- β2 Microglobulin
P-Haemoglobin
P-Free Kappa chain

Article continued on next page

P-Free Lambda chain

P-C-reactive protein

P-Transferrin, soluble Receptor

P-Cystatin C

## 2. From g/dL to g/L: results will increase 10 times

P-Albumin

P-Total protein

## 3. From mg/dL to g/L: results will decrease by 100-fold (x0.01)

P-Alpha1-Antitrypsin

P-Alpha1-acid glycoprotein

P-Alpha2 Macroglobulin

P-Apolipoprotein AI

P-Apolipoprotein B

P-Complement fraction C3

P-Complement fraction C4

P-Ceruloplasmin

P-Haptoglobin

P-Immunoglobulin A

P-Immunoglobulin G

P-Immunoglobulin G - Subclasses 1-4

P-Immunoglobulin M

P-Lipoprotein (a)

P-Prealbumin (P-Transthyretin)

P-Retinol binding protein

P-Transferrin

In order to minimize the possible confusion, WG-H recommends to performing the changes in two separate phases: those causing a 10-fold increase of the numerical results first, and those causing a 100-fold reduction in a second phase, however it may be considered more practical to do all the changes at the same time.

In any case the following plans and actions should be undertaken by all laboratories when changing level reporting to mg/L or g/L:

1. Synchronized adjustment of analyser and computer systems
2. Communication and liaison with all service users
3. Updating of all documentation and training materials

It is suggested that a standard comment is linked to every report sent out for a period of 12 months and the following wording is suggested: **“Please note new units and the change of the reference intervals”**. A message such as that below could be reported with every report for a period of time prior to the change to provide advance notification: **“Please note: From XX.XX.XX, [protein xyz] results will be reported in mg/L (or in g/L) instead of mg/dL in line with national and international guidelines.”** If deemed useful an example should be added: **“This means a [C-reactive protein] currently reported as 1.5 mg/dL will be reported as 15 mg/L”** or **“This means a [transferrin] currently reported as 300 mg/dL will be reported as 3.0 g/L”** or **“This means a total protein currently reported as 7.0 g/dL will be reported as 70 g/L”**.

4. Communication to hospital users and General Practitioners
  - The appropriate committees and staff within your Clinical Governance structure should be informed of your intention to change units of measurement.
  - General Practitioners should be communicated with either directly by a letter or by use of a Newsletter.

***By 31 October 2016, all laboratories are asked to have in place this type of reporting.***



## Focus on the activity of the EFLM Task-and-Finish Group on Standardization of the Colour Coding for blood collection tube closures

by **Ana-Maria Simundic**  
Chair, EFLM TFG-STCC

The European Federation of Clinical Chemistry and Laboratory Medicine (EFLM) has recently established a Task-and-Finish Group (TFG) under the title: Standardization of the colour coding for blood

collection tube closures (STCC). Representatives of all manufacturers of blood collections systems were invited to appoint their members in the new TFG.

### TFG-STCC members

<i>Chair</i> <b>Ana-Maria Simundic</b>	Department for Medical Laboratory Diagnostics Clinical Hospital "Sveti Duh", Zagreb, Croatia
<i>Member</i> <b>Nuria Barba Meseguer</b>	CATLAB Viladecavalls - Spain
<i>Member</i> <b>Michael Cornes</b>	The Royal Hospitals NHS Trust New Cross Hospital, Wolverhampton – UK
<i>Member</i> <b>Alberto Dolci</b>	Clinical Pathology Laboratory University Hospital "Luigi Sacco", Milano, Italy
<i>Member</i> <b>Edmee van Dongen-Lases</b>	Dept. of Clinical Chemistry Academic Medical Center Amsterdam - The Netherlands
<i>Company Representative</i> <b>Stephen Church</b>	Becton Dickinson
<i>Company Representative</i> <b>Helene Ivanov</b>	Greiner-Bio
<i>Company Representative</i> <b>Christa Seipelt</b>	Sarstedt

The aim of this TFG is to initiate and manage a dialogue between interested parties in order to achieve the world-wide harmonization of the colour coding for blood collection tube closures and labels.

Proper sampling and sample additives are essential and may substantially affect the quality of the sample. Tubes and additives are identified not only in writing on the tubes but also by the colour of the tube closures. Unfortunately these colours have not been standardized. The background of the problem and possible solution have recently been described in details in the EFLM Opinion paper published in CCLM (Simundic AM, et al. Colour coding for blood collection tube closures – A call for harmonization. Clin Chem Lab Med. 2015;53(3):371-6).

TFG-STCC has had its first meeting during the EuroMedLab 2015 conference in Paris, where a preliminary agreement was reached between manufacturers and laboratory professionals and operational plan of the project was drafted.

Furthermore, TFG-STCC has recently started a close collaboration with the ISO TC76/WG1 on 'Transfusion, infusion and injection, and blood processing



Ana-Maria Simundic

Article continued on next page



equipment for medical and pharmaceutical use', which is currently working on the revision of the ISO 6710 standard: 'Single-use containers for venous blood specimen collection'. This revision of ISO 6710 would also replace the current European standard EN 14820. TFG-STCC and ISO TC76/WG1 have agreed to include (as an Informative Annex) a colour code based on the Swedish standard in the new incoming version of the ISO 6710. This is already a first encouraging result.

In order to identify barriers and obstacles which could put this important project at risk of full implementation, TFG-STCC has recently set up a short survey in

order to learn whether EFLM National Societies would be willing to accept an EFLM proposal for the colour coding of the blood tube caps as the European standard. Moreover, if there are institutions, laboratories or individuals which are not in favour of such standardization we would be very interested to understand possible reasons for this.

The outcome of this survey is very important and will guide TFG-STCC in their efforts to identify the best solution for all stakeholders and achieve our goal, the world-wide harmonization of the colour coding for blood collection tube closures and labels.



## EFLM TFG-STCC Proposal for the color coding standard of the blood tube closures

Specimen type	Additive	ISO 4822 (1981) †	BS 4851 (1982)	ISO 6710 (1995)	CLSI H1-A5 (2003)	CLSI GP41-A6* (2007)	Swedish standard SS-872805 (2011)	EFLM proposal (color)
Serum	Clot activator	Z (no additive)	White (no additive)	Red	Red	Red	Red	
Serum with gel	Gel, clot activator	NA	NA	NA	NA	Red	Yellow	
Plasma	Li-Heparin	LH (Li- heparin)	Orange (Li-heparin)	Green	Green	Green	Dark green	
Plasma with gel	Gel, Li-heparin	NA	NA	NA	NA	Green	Light green	
Plasma	Citrate (1:9)	9 NC	Indigo	Light blue	Blue	Blue	Light blue	
Whole blood	Citrate (1:4)	4 NC	Mauve	Black	Black	NA	Black	
Whole blood	EDTA	KE (K salt) LE (Lithium salt) NE (Sodium salt)	Pink	Lavender	Lavender	Lavender or Pearl	Lavender	
Plasma EDTA with gel	Gel, EDTA	NA	NA	NA	NA	Lavender or Pearl	White or pearl	
Plasma	Glycolytic inhibitor	FX	Yellow	Grey	Grey	Grey	Grey	

† - ISO 4822 standard had suggested a letter coding for different anticoagulants (the standard did not contain color coding proposal)

\* - (former H03-A6)

Foundation for Emerging Nations



## News from the IFCC Website

### Foundation for Emerging Nations

IFCC is pleased to announce the Foundation for Emerging Nations (FEN), a non-profit Charitable Trust devoted to supporting programmes that help to improve the quality and delivery of laboratory medicine services, particularly in emerging nations.

[Read more](#)

*by Ian D. Watson*

*Chair, EFLM Working Group on Patient Focused Laboratory Medicine*



Ian D. Watson

The term Patient Focused Laboratory Medicine (PFLM) was coined by me for a presentation I was invited to give in Reykjavik at the 33rd Nordic Congress on Clinical Biochemistry in June 2012. My premise is, that patients are increasingly engaged with their own health and well-being, but access and understanding of laboratory investigations was limited. Internet sites vary in quality from excellent to misleading. In addition there were service, legal and patient specific factors that had to be considered should one wish to enable patients to make best use of any laboratory information provided to them.

The theme was further developed by me in other presentations in Europe and the audiences were encouraging in their responses, leading to the decision to form a Working Group within EFLM on PFLM. I was particularly delighted to share thoughts with Wytze Oosterhuis as he had similar views and had been

trying to investigate options for his own hospital. So what are the issues we think are important?

PFLM is recognised through a range on international projects recognizing the key role of Information Technology (IT) in medicine, such as: the Digital Agenda for Europe; ITFoM (IT Future of Medicine). Patients can have their DNA checked for disease risk with no referral through a physician, yet it is often impossible for patients to access commonly utilized disease markers e.g. thyroid function HbA1c for diagnosis and monitoring purposes, etc: Why?

Patients are only vaguely aware of the laboratory, they get their information from their physician; feedback may be poor; patients being told e.g. "the results are normal" but not the what and why of investigations being performed.

Patients are increasingly being given right of access to their results; in this "Age of Information" they want to know what the tests are for and what they mean, they can access general information through e.g. LabTests Online. The better informed patient will be better capable to take up an active role in the decision making process and be empowered to do so. The term "shared decision making" has been introduced for this aspect. As this becomes more widespread, could patient's physician cope with demand: maybe there is a role for the Specialist in Laboratory Medicine?

Use of internet, phone apps, increases access, but only for patients able and willing to use these approaches. Dr Amir Hannan in Manchester, has a current uptake of around 25% of his patients. However there are other issues; some patients have an 'I don't want to know' approach to their results (1), yet for others, even when they have been told their results and what they mean, their recall is poor though they express satisfaction with their treatment (2). Decision aids help retention, but the effect last around 12 months and worsens with time (3).

Numeracy and literacy are significant factors: the way numeric data is expressed can confuse, so of: 1 in 100, 10 in 1000 and 1%, percentage was significantly better understood whether innumerate, numerate or highly numerate (4), better yet was to provide information pictorially (5), particularly so for elderly (>75y) patients. Health literacy is impaired particularly in those for whom the native language is their second language, but issues of culture, gender, and age all come in to play in different ways (6).

Patients must recognize that errors can occur, so all involved with collection, analysis and interpretation make every effort to minimize errors of any kind and to act promptly when they are detected. It should be noted that it has been shown that patients themselves can play an important role in the detection and mitigation of errors (7).

So, patients receive their results, but may not be reassured by them, nor understand them, indeed may have negative emotional responses to them. There is clearly a complex issue to address and limited resource; can Specialists in Laboratory Medicine address this? The EFLM Working Group on Patient Focused Laboratory Medicine sought the views of European professionals: the majority were in favour of providing support to patient's understanding of their results. A recent survey by the same group of patients views in several European countries demonstrated that patients too were in favour of the proposition that Specialists in Laboratory Medicine provided them with support.

There is no doubt that such a change in role will be fundamental and challenging, yet in the information age where knowledge is key this is the direction

Laboratory Medicine must go if it is to remain relevant to the patient experience.

For this to happen requires your active engagement!

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## Turkish Biochemical Society (TBS) reaches out to three different cities with three symposia

by Aylin Sepici Dinçel

TBS Executive Board Member

Turkish Biochemical Society (TBS) organized 3 symposia in April & May, 2016.

The first one, First Kahramanmaraş Thalassaemia Symposium (7-9 April 2016) was in the south east of Turkey, at Kahramanmaraş. The symposium included a 1 day workshop titled 'Haemoglobin Disorders'.

The second Symposium, 'Bone Metabolism: Clinics and Laboratory' was held in the capital, Ankara. This half day symposium, covered the laboratory and clinics of metabolic bone disease from the cellular side to laboratory and clinical practice with 5 speakers from various universities, government and private hospitals (Assoc. Prof. Aylin Sepici Dinçel, Assoc. Prof. Mustafa Altay, Prof. Mustafa Serteser, Assoc. Prof. Metin Yıldırımkaaya and Prof. Taner Özgürtaş).

The last, but not least of the symposia was the 'Pre-analytical Phase Symposium' which was held on 19-20 May 2016 at Adana. 19 May is a Turkish National Holiday, both for the commemoration of Atatürk (the founder of the Turkish Republic) and the Turkish Youth

(Atatürk awarded a holiday specific for the youth, therefore the holiday is called 'Youth & Sports Day').

This symposium was organized by cooperation of TBS and its Adana Branch. The meeting started with a half-day course titled 'Biological Variation: Calculations and Applications', given by Abdurrahman Coskun, the EFLM representative of TBS and TBS' member of the EFLM WG-BV. Prof. Coskun rationally questioned quality specifications in clinical laboratories and addressed to the hot topic of biological variation. The parallel half day training course was based on the Phlebotomy Guideline published by TBS in 2015. The TBS Preanalytic Phase working group is led by the treasurer of TBS, Assoc. Prof. Mehmet Şenes and is a very effective

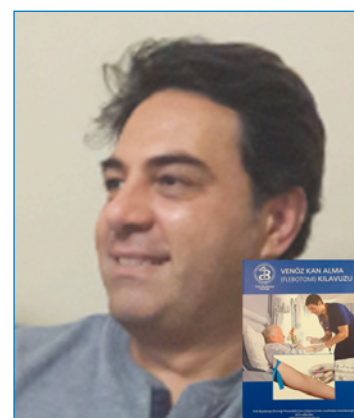


Fig 1a. Mehmet Şenes (Preanalytic Phase Working Group Leader)



Fig 1b. End of the course for phlebotomists.

The interesting and provocative talk titled "Conflicts", given by TBS Adana Branch President Prof. Levent Kayrın.

Article continued on next page

working group (Fig 1a) whose recent product was 'The Handbook of the Guidelines for Venous Blood Collection (phlebotomy)' The course ended with an interesting and provocative talk titled "Conflicts", given by TBS Adana Branch President Prof. Levent Kayrın (Fig. 1b). After these half day courses, the symposium started with the opening ceremony and speech given by the President of TBS, Assoc. Prof. Doğan Yücel (Fig. 2). Dilek Tarhan from the Department of Quality and Accreditation in Health of Turkish Ministry of Health, Director of General for Health Services updated the participants on the recent advances in preanalytical phase quality management. All together there were 7 oral presentations, 45 posters and 19 lectures.

During the courses and symposium, a total of 200 participants gathered for the chance to practice and discuss a variety topics from laboratory to clinical practice including principles and practice of biological variations, quality for preanalytical phase, sources of preanalytical errors in molecular diagnostic tests as well as in point-of-care testing, paediatric, geriatric

and oncology patients. Other factors such as centrifugation, transport, compatibility of various samples were specifically addressed by the different conferences. Educational approaches to reduce the errors in the preanalytical phase by collaboration of different stakeholders in health services was also discussed. Other interesting and current topics were the importance of preanalytical phase in therapeutic drug monitoring and ethanol analysis.

The president of the IFCC Committee on Reference Intervals and Decision Limits (C-RIDL), Prof. Yeşim Özarda informed the participants of the standardization of preanalytical phase for multicenter trials and Prof. Pınar Eker talked about the EFLM-PA-WG missions. At the end of the symposium, 3 poster awards were announced by Prof. Levent Kayrın and the closing ceremony was completed with many thanks to Becton Dickinson for their invaluable educational and financial support to the symposium and best wishes with hopes for the next symposium by TBS president of the Adana Branch.



**Fig 2. The Executive Board of Turkish Biochemical Society with the Preanalytical Phase Symposium Participants.**  
*Left to right standing:* Aylin Halgör, İmge Ergüder, Yeşim Özarda, Mehmet Şeneş, Oytun Portakal, Suat Küçük, Nurzen Sezgin, Pınar Eker, Fehime Benli Aksungar, Günnur Dikmen, Ali Ünlü  
*Left to right sitting:* Aylin Sepici Dinçel, Ferhan Sağın, Doğan Yücel



## 9th International and 14th National Congress on Quality Improvement (IQC14) in Clinical Laboratories Tehran, Iran – 19-22 May 2016

by M. Reza Bakhtiari

*Iranian Association of Clinical Laboratory Doctors National Representative*

As the executive of the quality improvement congress, the Iranian Association of Clinical Laboratory Doctors (IACLD) annually brings together the big family of laboratorial sciences at the same time with the national day of clinical laboratory and birth of the prominent Iranian scientist, Hakim Jorjani in Tehran.

The main objective of this congress was tied to the slogan "Quality Has No Finish Line!"

This great medical event is a sign of convergence of clinical laboratory experts and those who work hard in the field of clinical laboratory sciences in the country and region. In this congress, different laboratory groups from all over the country participate and share their points of view and opinions about the results of other scientists and researcher's efforts in all basic, specialty, clinical, management and professional behavior fields, in an intimate space.

The Ninth international congress and fourteenth national congress have also been held on 19-22 April 2016 with the aim of exchanging experiences, ideas and scientific findings of researchers, scholars, students and those interested in the areas of laboratory science by over 4000 participants from Iran and other countries including USA, Sweden, Jordan, Australia, UK, France, Germany, Turkey, Japan, Italy, Poland, India, Spain, etc.

We proudly announce that the prestigious international institutions such as the International Federation of Clinical Chemistry and Laboratory medicine (IFCC) and the European Federation of Laboratory medicine (EFLM) and also 44 academic and research centers and scientific and professional associations have announced their support to the congress and have added the congress to their annual calendar.

Regarding the large number of participants, there is a need for an innovation in scientific and executive domains each year, otherwise audiences will lose their interest in participating in congress sessions.

Therefore, this congress tries to get improve practically each year in all aspects by proposing fascinating and challenging topics of health in the domain of medical laboratory sciences and by considering the need for increasing the health level of the society. Continual dynamism in the selection of subjects and pivots of the congress and targeted planning in selecting the main speeches and speakers to address the day needs of the health system and progressive increment in the quality of laboratories of the country is one of the topics that have been considered every year.

During the period of IQC14, a systematic effort was made to detect all issues related to the vital and serious role of laboratories in the health system and increasing the quality of laboratories.

For this reason, the direction of the IQC14 had a fresh look at scientific, functional as well as clinical subjects. The twenty-two scientific axes of the congress included the laboratory and: chronic kidney diseases, immunodeficiency diseases, immunology-serology research, biochemistry research, microbiology research, laboratory and haematology research, point-of-care testing (POCT), transfusion medicine, reproductive medicine, viral opportunist infections, non-communicable diseases surveillance system, communicable diseases



Audience at IQC14 plenary session

Article continued on next page



Crowded exhibition area at IQC14

surveillance system, training of laboratory science: security of technical officer; Futurology of clinical laboratories; ethics and law in the clinical laboratory; clinical laboratory accreditation; the economy and development of laboratory services; laboratory challenges in adrenal gland disorders (hyper and hypocortisolism); risk management in the laboratory; technology management of laboratory diagnostic (IVD) and the role of leadership and middle management in the laboratory.

Twenty-one scientific and professional workshops were also held alongside the congress and included: management of biological risks in the clinical laboratory, various methods of Immunoassay, principles of determining the permissible error in the laboratory, quality assurance in ELISA tests and management of challenges in interpreting thyroid function tests.

The secretariat received 471 research articles; case reports and reviews, amongst them 121 articles were accepted for oral presentation and 254 for poster presentation.

In addition to the abovementioned, IQC14 held one of the most thriving exhibitions of laboratory-related products and equipment. This exhibition is probably unparalleled in terms of its type, volume and the scale of holding, even in other countries of the region. The exhibition of the congress presented the latest technology achievements in the fields, related to laboratory medicine. Participations from over 210 manufacturing, equipment and laboratory service companies introduced and offered their products and services.

The satellite events of the congress were as follows:

- Every year, the festival of Hakim Jorjan – the prominent Iranian scientist – is held simultaneously with the congress of quality improvement, in the field of laboratory medicine with topics including the best paper, top laboratory staffs/ supervisors/ superior technical director, and the best products, equipment and services company.

The aim of holding this festival alongside the congress was to improve the quality of knowledge and awareness of the staff of medical laboratories and manufacturers.

- Appreciation of intelligent high school students interested in research in the field of laboratory medicine:

- Congress of quality improvement is honoured to be the host of researcher and scholar students interested in the domain of laboratory sciences from Farzanegan high school so that can be introduced to inventions and obtain guidance from seniors.

- Appreciation of the premier providers of congress posters:

- This was done with the aim of motivating presenters of research articles and also help improve the quality of presentations with awards being presented after judgment by the scientific committee.

- Appreciation of the lab manufacturing and equipment companies that provide superior services.

- From two years ago, that the secretariat of IQC has been showing appreciation to high performing companies by judging the exhibitions.
- In IQC14, the best companies were selected from local manufacturing companies, active service and distribution companies in the field of laboratory, medical publications and young startup companies.

In conclusion, all professors, students and active people in the field of science and technology are invited to participate in the tenth international and fifteenth national congress of quality improvement (IQC15) which will be held in April 2017 in Tehran to exchange knowledge and worthy experience in laboratory sciences.



## Recognition of Specialists in Laboratory Medicine at the EU Commission

*by Gilbert Wieringa*

*EFLM Profession Committee Chair*

*EC4 Foundation Board chair*

### IMPORTANT INFORMATION NEEDED

#### To whom it may concern:

As you may be aware, EU Directive 2013/55/EU (The recognition of professional qualifications) was transposed into EU member states national laws on 18th January 2016. As well as allowing free professional migration across EU borders, it affords opportunities for "specialist" practice to be recognised under Common Training Frameworks. For Specialists in Laboratory Medicine the opportunity arises to present a Common Training Framework that has been developed by our colleagues in EC4 (the European Register of Specialists in Laboratory Medicine) and EFLM's Profession Committee but it needs to have the support of at least one third of EU member states.

EU Member States are now supposed to have completely updated their national legislations to the provisions of the said Directive. Some of the governments are issuing guides, organising conferences or meetings in order to inform stakeholders on the changes the application of 2013/55 brings.

If this has happened already in your Country, could you kindly share the documents/information with the EFLM Office ([eflm@eflm.eu](mailto:eflm@eflm.eu))?

This information has been requested by the European Council of the Liberal Professions (CEPLIS) who are leading on our behalf in presenting the case for recognition of Specialists in Laboratory Medicine at the EU Commission.

With thanks and best regards,  
*Gilbert Wieringa*

## IFCC'S CALENDAR OF CONGRESSES, CONFERENCES & EVENTS

### Calendar of IFCC Congresses/Conferences and Regional Federations' Congresses

Nov 26 - 29, 2016	 <p><i>14th Asia-Pacific Federation for Clinical Biochemistry and Laboratory Medicine Congress</i></p>	Taipei, TW
Jun 11 - 15, 2017	 <p><i>IFCC-EFLM EuroMedLab 2017</i></p>	Athens, GR

*Calendar continued on next page*



Sep 17 - 20, 2017		<i>XXIII COLABIOCLI Congress 2017</i>	Punta del Este, UY
Oct 22 - 25, 2017		<i>XXIII IFCC WorldLab 2017</i>	Durban, ZA
May 19 - 23, 2019		<i>IFCC-EFLM EuroMedLab 2019</i>	Barcelona, ES
May 24 - 28, 2020		<i>XXIV IFCC WorldLab 2020 Seoul</i>	Seoul, KR

### Calendar of events with IFCC auspices

Jun 04 - Jul 17, 2016	<i>High Speciality QC Training</i>	Mexico City, MX
Jun 14 - 17, 2016	<i>35th Nordic Congress of Clinical Chemistry 2016</i>	Odense, DK
Jun 15 - 18, 2016	<i>XXV European Congress of Perinatal Medicine</i>	Maastricht, NL
Jun 16 - 17, 2016	<i>14th ZACBLab Med Annual Workshop</i>	Harare, ZW
Jun 18 - 22, 2016	<i>MGCC 2016 - Joint Conference of the Canadian College of Medical Geneticists (CCMG-CCGM) and the Canadian Society of Clinical Chemists (CSCC-SCCC)</i>	Edmonton, CA
Aug 11 - 13, 2016	<i>9th Palestinian Conference of Laboratory Medicine</i>	Ramallah, Palestine
Aug 25 - 27, 2016	<i>58th National Conference of the Hungarian Society of Laboratory Medicine</i>	Szeged, HU
Sept 3 - 8, 2016	<i>41st FEBS Congress/FEBS 2016</i>	Kusadasi/ Ephesus, TR
Sept 13 - 15, 2016	<i>AACB AIMS 2016 Combined Scientific Meeting</i>	Brisbane, AU

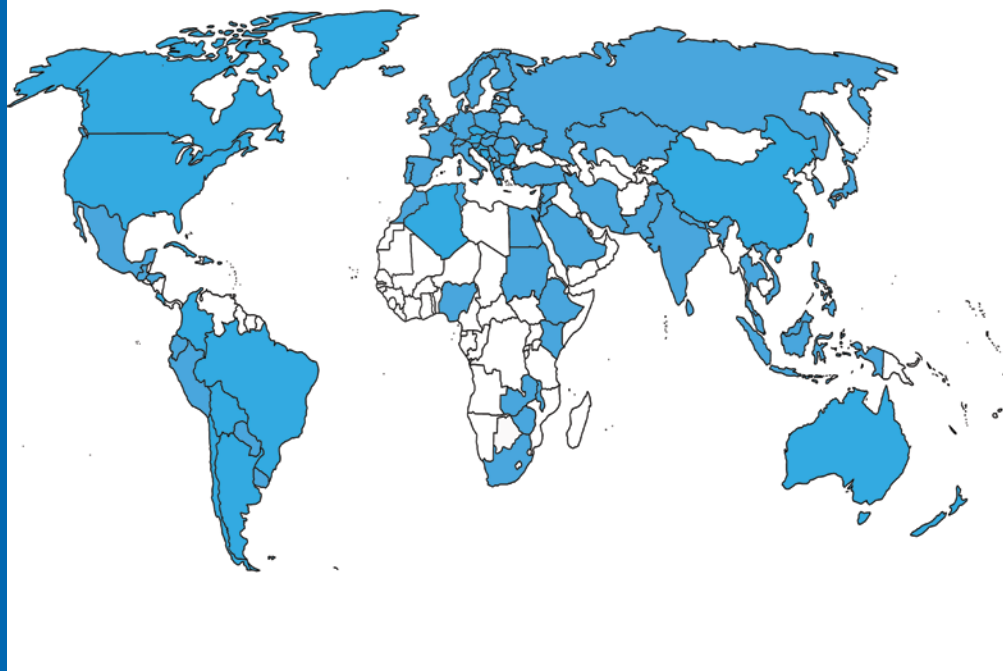
Calendar continued on next page

Sept 16, 2016	<i>AACB Chromatography Mass Spectrometry Satellite Meeting</i>	Brisbane, AU
Sept 21 - 24, 2016	<i>4th Joint EFLM-UEMS Congress: "Laboratory Medicine at the Clinical Interface"</i>	Warsaw, PL
Sept 21 - 24, 2016	<i>26th International CPOCT Symposium: the Benefits and Challenges of Point-of-Care Testing across the Clinical Spectrum</i>	Copenhagen, DK
Sept 28 - 30, 2016	<i>2nd German Congress on Laboratory Medicine DKLM 2016 and 13th Annual Congress of the German Society for Clinical Chemistry and Laboratory Medicine e.V.</i>	Mannheim, DE
Sept 29, 2016	<i>SBPC/ML&amp;IFCC Joint Symposium</i>	Rio de Janeiro, BR
Sept 28 - Oct 1, 2016	<i>5th Slovenian Congress of Clinical Chemistry and Laboratory Medicine</i>	Portoroz, SI
Oct 4 - 6, 2016	<i>2nd SIPMeL National Congress</i>	Montesilvano, IT
Oct 4 - 8, 2016	<i>First Scientific and Professional Congress of Biochemistry 2016</i>	Cordoba, AR
Oct 4 - 6, 2016	<i>2nd SIPMeL National Congress</i>	Montesilvano, IT
Oct 12 - 14, 2016	<i>2016 Conference of the Association of Clinical Chemists of Nigeria</i>	Ikeja, Lagos, NG
Oct 12 - 20, 2016	<i>48th National SIBioC Congress - Laboratory Medicine The Patient's Central Role between Laboratory and Clinical Practice</i>	Torino, IT
Oct 19 - 21, 2016	<i>X National Congress of Clinical Laboratory</i>	Zaragoza, ES
Oct 20 - 22, 2016	<i>Joint Meeting of the "3rd Congress on Controversies in Thrombosis &amp; Hemostasis" together with the "8th Russian Conference on Clinical Hemostasiology and Hemorheology"</i>	Moscow, RU
Oct 22, 2016	<i>5th International Conference on Neonatal and Pediatric Laboratory Medicine</i>	Cagliari, IT
Oct 26 - 28, 2016	<i>IFCC Flow Cytometry Workshop "From Science to Clinic"</i>	St. Petersburg, RU
Oct 26 - 28, 2016	<i>LMCE 2016 &amp; KSLM 57th Annual Meeting</i>	Seoul, KR
Oct 27, 2016	<i>International Conference on Laboratory Medicine "Towards performance specifications for the extra-analytical phases of laboratory testing"</i>	Padova, IT
Nov 4, 2016	<i>XVI Congreso Internacional del Colegio Nacional de Bacteriología</i>	Bogotá, CO
Nov 9 - 11, 2016	<i>EFLM Course: "Developing medical tests that improve patient outcomes"</i>	Leiden, NL
Nov 17 - 18, 2016	<i>10th International Scientific Meeting of the Centre of Metrological Traceability in Laboratory Medicine (CIRME) "Ten years after"</i>	Milan, IT
Dec 2 - 3, 2016	<i>Journée de Biologie Praticienne 50</i>	Paris, FR
Oct 20 - 22, 2017	<i>XIV International Congress of Paediatric Laboratory Medicine</i>	Durban, ZA

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Spain: Asociación Española de Farmacéuticos Analistas (AEFA)
Turkey: Society of Clinical Biochemistry Specialists (KBUD)
Ukraine: Association of Clinical Chemistry & Laboratory Medicine of Ukraine (ACCLMU)

## Regional Federations

Arab Federation of Clinical Biology (AFCB)
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