



**International Federation  
of Clinical Chemistry  
and Laboratory Medicine**

Advancing excellence in  
laboratory medicine for  
better healthcare worldwide

[www.ifcc.org](http://www.ifcc.org)

**Annual  
Report 2021**



**IFCC**

International Federation  
of Clinical Chemistry  
and Laboratory Medicine

# Highlights of the Year

- **IFCC virtual Conference: Critical Role of Clinical Laboratories in COVID-19 Pandemic**  
15-17 February 2021
- **IFCC Townhalls 2021**  
A new IFCC initiative aimed to significantly enhance internal communications within the IFCC organization, the IFCC Board, all IFCC member societies and Regional Federations.
  - [IFCC Townhall 2021 AFCCB - AFCC - EFLM - 15 September 2021](#)
  - [IFCC Townhall 2021 Corporate Members - 21 September 2021](#)
  - [IFCC Townhall 2021 APFCB - 20 October 2021](#)
  - [IFCC Townhall for COLABIOCLI and NAFCC – 8 November 2021](#)
- **IFCC live webinars – 2021 Series**  
<https://eacademy.ifcc.org/events/ifcc-live-webinar-series-2021/> (58 modules)
  - IFCC C-CB Appraisal of 2020 ESC Guidelines for the Management of Acute Coronary Syndromes in Patients Presenting Without Persistent ST-Segment Elevation: Getting Cardiac Troponin Right
  - Application of laboratory techniques in the diagnosis of Infectious Diseases (in English and in Chinese)
  - Risk Management in Clinical Laboratories
  - Clinical Applications of Thrombosis and Hemostasis (in English and in Chinese)
  - Quality in Clinical Laboratory
  - Point of Care Testing
  - Newborn Screening (in English and in Spanish)
  - Tumor Liquid Biopsy (in English and in Chinese)
  - Different Perspectives on Laboratory 4.0
  - Metrology and Clinical Laboratory (in English and in Spanish)
  - Evidence-based Laboratory Medicine
  - Quality management of medical test results during the pandemic
  - Ethical dilemmas in laboratory medicine during pandemic
  - Common laboratory measures of dysglycaemia; Their strengths and weaknesses
  - Alzheimer's disease therapeutics & biofluid tests: Current practice and future prospects
  - What is the position and recognition of our profession in Europe and what tools do we have to change/increase its visibility
  - Program designs and practical approaches for addressing unexpected result
- **New Task Forces** formed:
  - Taskforce on Outcome Studies in Laboratory Medicine (TF-OSLM)
  - Task Force on Global Reference Interval Database (TF-GRID)
- **New Working Groups** formed:
  - Artificial Intelligence and Genomic Diagnostics (WG-AIGD)
  - Single Cell and Spatial Transcriptomics (WG-SCST)
  - Metabolomics (WG-M)
  - Development of a Reference Measurement System for sustainable PT/INR Standardization (WG PT/INR)
- **IFCC-AACC Pearls, translation in Spanish**  
<https://eacademy.ifcc.org/topics/c%C3%A1psulas-de-la-medicina-de-laboratorio-pearls/>



- **e-Academy**, open educational resources (<http://eacademy.ifcc.org/>)
- **IFCC Flow cytometry courses**
  - 2021 - 2nd Course on Basics of Flow Cytometry in Cairo (EG)  
<https://www.ifcc.org/media/479227/2nd-ifcc-course-on-basics-of-flow-cytometry.pdf>
  - 2021 - FC Course in Leipzig (DE)  
<https://www.ifcc.org/media/479150/ifcc-wg-flow-cytometry-course.pdf>
  - 2021 - Autumn School of Cell Analysis in Immunology in Geneva (CH)  
<https://www.ifcc.org/media/479008/autumn-school-immuno-flyer-october-2021.pdf>
- **IFCC Expert Database** (<http://www.ifcc.org/ifcc-education-division/experts/>)
- **IFCC Handbook 2021 – 2023**  
<https://www.ifcc.org/media/479091/ifcc-handbook-2021-2023.pdf>
- **IFCC Milestone 2002-2020**  
<https://www.ifcc.org/executive-board-and-council/ifcc-milestones-2002-2020/>
- **IFCC Professional Scientific Programmes (PSEP)**
- **IFCC VLP programme supported by Abbott**  
(<http://www.ifcc.org/ifcc-education-division/emd-special-projects/>)
- Implement cooperation and agreements with **IFCC Regional Federations and International Organizations**
- **Yearly programmes on hold due to COVID-19 pandemic.**
  - **Roche/IFCC Travel Scholarships**
  - **IFCC FEN** - Foundation for Emerging Nations (<http://www.ifccfoundation.org/>)
  - **IFCC EMD C-CMBC Courses**

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# Message from the President of IFCC



IFCC has been incredibly active over the past year, despite the ongoing COVID-19 pandemic, and continues to work productively towards “advancing excellence in laboratory medicine for better healthcare worldwide”. Thanks to the adaptability of the IFCC community, we were able to shift our activities from in-person to virtual using various online platforms. This has allowed the Executive Board, Divisions, Task Forces, Committees, and Working Groups to meet regularly throughout the year and achieve the aims of the 2020-2023 Strategic Plan and has also facilitated successful virtual events.

Indeed, several new Task Forces were initiated in late 2021, including the Task Force on Outcome Studies in Laboratory Medicine (TF-OSLM) and the IFCC Task Force on Global Reference Interval Database (TF-GRID). Both the TF-OSLM and TF-GRID are now in the planning phase to address their goals of promoting the value of laboratory medicine with evidence-based findings and establishing a global reference interval database, respectively. Task Forces established in 2020 have also made significant progress, with programs already underway. For instance, the Task Force on Global Lab Quality (TF-GLQ) has recruited an external quality assurance (EQA) company (OneWorldAccuracy) to initiate a pilot program in which EQA samples will be sent to five laboratories in ten countries: Malawi, Zambia, Bosnia, Georgia, Serbia, Sri Lanka, Indonesia, Bolivia, Columbia, Peru. Eventually, the global quality program will be expanded to include other geographical regions and additional laboratory tests. Additionally, the Task Force on Global Newborn Screening (TF-NBS) has developed a questionnaire to better understand the state of newborn screening worldwide and identify partner regions, and the Task Force on COVID-19 published interim guidelines on rapid point-of-care antigen testing for SARS-CoV-2 detection in asymptomatic and symptomatic individuals. Finally, the Task Force on Global eLearning/eAcademy (TF-GEL) continues to coordinate the Live Webinar Series, globally broadcasting topics in Laboratory Medicine on a biweekly basis. These highly successful LIVE webinars are truly international

Alongside this excellent progress, IFCC hosted several virtual events, including the IFCC Global Conference on COVID-19, which brought together leading experts on a global virtual platform to present the latest advances in COVID-19 diagnostics and therapeutics as well as discuss the critical role of clinical laboratories in the COVID-19 pandemic. For the first-ever virtual IFCC conference, this global scientific event was a major success with thousands of attendees from over 95 countries around the world. IFCC also held the first-ever IFCC Annual Town Halls to bring the IFCC community together for the purpose of improving internal communication. In total, four Town Halls were held for 1) Corporate Members, 2) European (EFLM), African (AFCC), and Middle Eastern (AFCEB) regions, 3) Asia Pacific (AFPCB) region, and 4) North America (NAFCC) and Central/South America (COLABIOCLI) regions. As the COVID-19 pandemic eases, IFCC has planned several exciting events for 2022, including the XXIV IFCC-EFLM EuroMedLab in Munich (April 10-14) and XXIV IFCC WorldLab in Seoul (June 26-30). The 2022 IFCC General Conference is also scheduled for October 25-30 in Brussels, at which we will celebrate IFCC’s 70th anniversary.

Reflecting on 2021, I would like to thank the IFCC community for remaining engaged and focused on advancing the field of laboratory medicine, despite unique challenges posed by the COVID-19 pandemic. Thanks to all of our efforts, the IFCC made critical advancements towards our vision, which we will most certainly continue into 2022!

*Prof. Khosrow Adeli*

## **EXECUTIVE BOARD (EB)**

The COVID-19 pandemic continued to be a major obstacle to in-person meetings for the IFCC Executive Board during 2021, but regardless the EB was very productive, conducting seven virtual meetings, and we were able to hold one in-person meeting (Milan, Italy). All minutes of the meetings are available on the IFCC Website.

As noted elsewhere in this Annual Report, the IFCC Divisions, Committees, Working Groups and the Task Forces were also very active via virtual meetings and electronic communication. While the pandemic has all but curtailed in-person meetings, it has stimulated more regular communication among functional group members via virtual meetings. This is something that should continue, in addition to in-person meetings, once the pandemic is over. One again I extend my thanks to all of the IFCC volunteers serving on IFCC committees, working groups and task forces for their excellent work and their commitment to the IFCC, particularly during this difficult time.

The IFCC membership continues to grow, and as of December 31, 2021, included 95 Full Members, 19 Affiliate Members and 48 Corporate Members. During 2021, two Full Member Societies joined: the Libyan Association of Clinical Pathology, and the Asociación Médica Peruana de Patología Clínica-AMPPC - Peruvian Medical Association of Clinical Pathology; and two Affiliate Member Societies joined: the College of Chemical Pathologists of Sri Lanka, and the United Arab Emirates – Genetic Diseases Association. We also welcomed four new Corporate Members: Technogenetics, Perkin Elmer, Medix Biochemica, GenScript Biotech Corporation and Diagnostica Stago. A warm welcome to all the new members joining the IFCC family.

2021 was the first year of my second term as Secretary of the IFCC Executive Board and I would like to thank all the IFCC officers, members and colleagues who I have worked with for their cooperation and assistance. Again this year, the COVID pandemic prevented our in-person meetings/congresses and the opportunities to meet old friends and colleagues, and to make new ones. However, the IFCC responded by hosted many virtual meetings which were enthusiastically attended by delegates from around the world. However, I am sure you all join me in hoping that 2022 brings back the possibility of in-person meetings/conferences and personal exchange and networking with friends and colleagues.

Special thanks to the IFCC Office staff in Milan, Paola Bramati, Silvia Cardinale, Silvia Colli Lanzi, and to Smeralda Skenderaj (new to the IFCC Office) who have worked so hard to cope with the challenges of 2021 and help keep our many activities moving forward.

*David Kinniburgh - Executive Board Secretary*



## TREASURER REPORT

During the first year of my term as the IFCC treasurer, until the end of April along with the IFCC staff the annual dues of Full, Affiliate and Corporate Members were received, the adherence of IFCC operating units to their allocated budgeted were monitored and detailed records of all transactions were kept, reimbursements were processed immediately after the receipt of the claims from the IFCC office. Close collaboration was achieved with the IFCC investment bank (Credit Swiss) to optimise the financial return on IFCC investments. The annual accounts and financial actions will be reviewed by an external independent auditor in order to finalize the actual income and expenses at 31st December 2021. As IFCC expanded its world wide activities with new projects and took direct control of the events organized (WorldLabs, EuroMedLabs), in order to comply with various worldwide laws and tax regulations, we contracted, after a bid, an International experienced accounting partner to help us in this task.

### 1. COMPARISON OF 2021 PROPOSED BUDGET WITH ACTUALS AT 31<sup>st</sup> DECEMBER 2021

The 2021 budget was expected to be closed with a deficit of CHF -869.188,27. Instead, it was closed with a surplus of CHF 436.513,07 (Fig. 1). The main reasons for this difference were the decreased expenses (travel etc) during the pandemic as also as the profit from the IFCC webinars.

Summary	Budget 2021	Actual 2021
	CHF	CHF
Total Operational revenues & financial income	1,753,100.00	1,080,426.15
Total Operational costs & financial charges	2,622,288.27	643,913.08
<b>Profit (-loss) for the year</b>	<b>-869,188.27</b>	<b>436,513.07</b>

**Figure 1.** 2021 proposed budget versus to actual at 31<sup>st</sup> December 2021.

## 2. TOTAL OPERATIONAL REVENUES AND FINANCIAL INCOME

The actual total operational revenues and financial income were CHF 1.080.426,15 (Fig. 2).

REVENUES & INCOME		Budget 2021 CHF	Actual 2021 CHF
1 2:04:00	Full members (National Societies)	175.000,00	174.750,08
1 3:04:00	Corporate members	250.000,00	334.883,15
1 4:04:00	Affiliate members	4.500,00	4.023,93
1 6:02:01	Income from CLSI royalties	2.000,00	747,37
1 6:38:01	Revenue for ICHCLR secretarial support	4.500,00	4.478,72
1 6:39:01	Revenue for ICHCLR sub-account	0,00	1.387,20
1 7:02:24	WorldLab Congress Seoul 2022 (ex 2020)	0,00	0,00
1 7:03:24	EuroMedLab Congress Munich 2022	1.000.000,00	0,00
1 7:04:10	IFCC virtual Conference "Critical role of Clinical Lab in COVID-19 pandemic"	200.000,00	180.493,07
1 7:07:01	COLABIOCLI Congress Mexico-Leon 2022 share	0,00	0,00
1 7:07:03	EMD Symposium - WorldLab Seoul 2020 - Abbott	0,00	14.851,86
1 8:00:01	Income for Scientific Division (SD) JRC IRMM	40.000,00	55.755,67
1 9:02:10	IFCC-AACC Pearls	0,00	0,00
1 9:05:01	Abbott VLP sponsorship	23.000,00	23.030,80
1 10:00:01	Elsevier Support - AACC stand & royalties	3.000,00	0,00
1 10:00:02	Income from Com. Publ. div. (CPD) Elsevier endorsement - incl ADV	30.000,00	39.442,00
1 11:05:01	Michael Metz Award - ICPLM	0,00	521,20
1 11:05:02	ICPLM virtual Satellite Munich	0,00	0,00
1 12:01:01	Yashraj Dist Clinical Chemist Award	0,00	0,00
1 12:01:02	Siemens - Henry Wishinsky Award dist Intl services	0,00	0,00
1 12:01:03	Abbott Award for dist. contibution in education	0,00	0,00
1 12:01:04	Abbott Award for significant contribution to molecular diagnostics	0,00	0,00
1 12:01:05	Sekisui Award for Lab Med and Patient care	0,00	0,00
1 12:01:06	Award CLSI - NIST Seoul 2022 (ex 2020)	0,00	0,00
1 12:01:07	Young investigator Award - IFCC	0,00	0,00
1 12:01:08	Hyttest Award for contr to cardiovascular diagnostic	0,00	0,00
1 12:01:09	Gerard Siest- Biologie prospective Award	0,00	0,00
1 12:01:10	Yashraj Dist women scientist Award	0,00	0,00
1 12:02:00	Abbott Univants Project	0,00	0,00
1 13 01 21	Support to IFCC Live webinars	0,00	0,00
1 13 01 06	Support to IFCC TF-YS webianars	0,00	5.269,65
1 13:05:03	Income for Roche travel scholarships	21.000,00	0,00
1 18:00:00	FEN expenses re-imbursed	100,00	-307,29
1 18:01:02	Realized profits on investments	0,00	45.640,13
1 18:01:03	Unrealized profits on investments	0,00	178.683,39
1 19:80:02	Overhead on sponsorship projects	0,00	2.037,39
1 20:01:03	Profits on exchange	0,00	14.737,83
<b>TOTAL REVENUES &amp; INCOME</b>		<b>1.753.100,00</b>	<b>1.080.426,15</b>

Figure 2. The expected and actual INCOME at 31<sup>st</sup> December 2021.





### 3. IFCC MEMBERSHIP DUES

Below is a diagram showing the percentage of the major income of IFCC from the annual dues of Full, Affiliate and Corporate Members collected during 2021 (Fig. 3). Thanks all the member Societies and Corporate members that supported IFCC throughout the years. Their continuous contribution have made possible the accomplishment of numerous IFCC tasks and projects. IFCC is grateful to the IVD industry for their support and active participation in the IFCC scientific events and the endorsement of the new form of virtual events. We also thank the members for their loyalty and attention in paying dues at the start of the year, which helps the cash flow.

<b>Dues</b>	<b>CHF</b>
Full members	174.750,08
Corporate members	334.883,15
Affiliate members	4.023,93
<b>Total</b>	<b>513.657,16</b>

**Figure 3.** IFCC membership dues collected in 2021.

### 4. IFCC MEETINGS INCOME PARTITION

IFCC meetings' revenues are not a regular yearly income. The average yearly income of IFCC arising from the meetings can be calculated dividing the total revenue by the frequency of the event. The yearly income of IFCC from the recent meetings (EuroMedLab 2019 Barcelona, EuroMedLab 2017 Athens and WorldLab 2017 Durban and shares from the regional federations' meetings) subdivided per year is indicated below (Fig. 4).

<b>INCOME</b>	<b>PARTITION</b>	<b>YEAR AVAILABILITY</b>
WordLab 2017(Durban): CHF 189 429	3 years	CHF 63.143
EuroMedLab2017 (Athens): CHF 774 318 – 155 737 (EFLM share) = CHF 618 581	2 years	CHF 309.290
APFCB Jaipur 2019 share: CHF 12.300	2 years	CHF 6.150
COLABIOCLI Congress Punta del Este – 2017: CHF 2 200	2 years	CHF 1.100
EuroMedlab (Barcelona) 2019 CHF 2.262.277 – 569.425 (EFLM) = CHF 1.692.852	2 years	CHF 846.426
IFCC Covid virtual Conference 2021: CHF 180.493,07	2 years	CHF 90.246,53

**Figure 4.** IFCC meetings income.

There is no meeting income from WorlLab 2020 Seoul since it has been postponed to 2022. The income of IFCC from the membership dues and annual meetings income (excluding sponsorships and other revenues) in 2021:

**CHF 513.657,16 (dues) + CHF 90.246,53 (annual meeting income) = CHF 603.903,69**

## 5. SPONSORSHIP

Divisions and some Functional Units raise some sponsorships funds which give them a certain flexibility in conducting projects. These sponsorships are used for the specific projects in due time. The unspent sponsorship funds are carried over to the next years. The total amount of sponsorships available for specific projects at 31 December 2021 to be carried to 2022 is **CHF 901.705**.

### 6. TOTAL OPERATIONAL COSTS AND FINANCIAL CHARGES

The actual total operational costs and financial charges in 2021 were **CHF 643.913,08** (Fig.5).

#### IFCC GENERAL EXPENES - 2021 Budget to 31<sup>st</sup> December 2021 Actuals

	Actual expenses including sponsorship
5. Organisations Affiliated w/ IFCC	37.990
6. IFCC Int/Reg Organisations	60.949
7. IFCC Congresses and Conferences Committee (C-CC)	734
8. IFCC Scientific Division (SD)	2.903
9. IFCC Education and Management Division (EMD)	14.590
10. IFCC Communication Publication Division (CPD)	33.576
11. IFCC Emerging Technologies Division (ETD)	1.205
13. IFCC Special Projects	34.722
14. IFCC Statutes & Rules	12.086
15. IFCC Financial Report	33.230
16. IFCC Organisational Matters	344.719
19. IFCC Executive Board (EB)	67.210
<b>GENERAL TOTAL</b>	<b>643.913</b>

Figure 5. IFCC GENERAL EXPENSES-2021

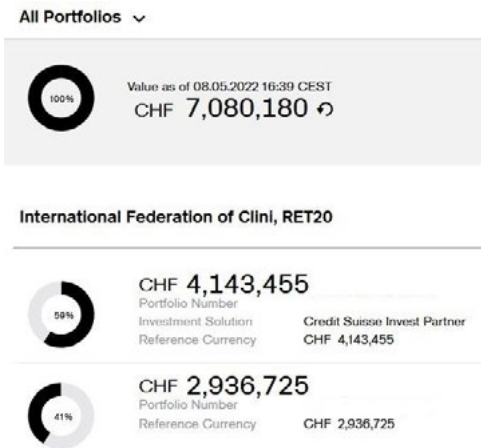


## 7. CASH BALANCE AT CREDIT SUISSE ON 31 DECEMBER 2020

Total amount of cash available on December 31<sup>st</sup>, 2020, when converted into CHF currency is **CHF 2.163.064.**

## 8. TOTAL BALANCE at CREDIT SUISSE on 8 May 2022

Total amount of funds available on May 8th, 2022, when converted into CHF currency is **CHF 7.080.180.**



**Figure 6.** Total Balance at Credit Suisse on May 8<sup>th</sup>, 2022.

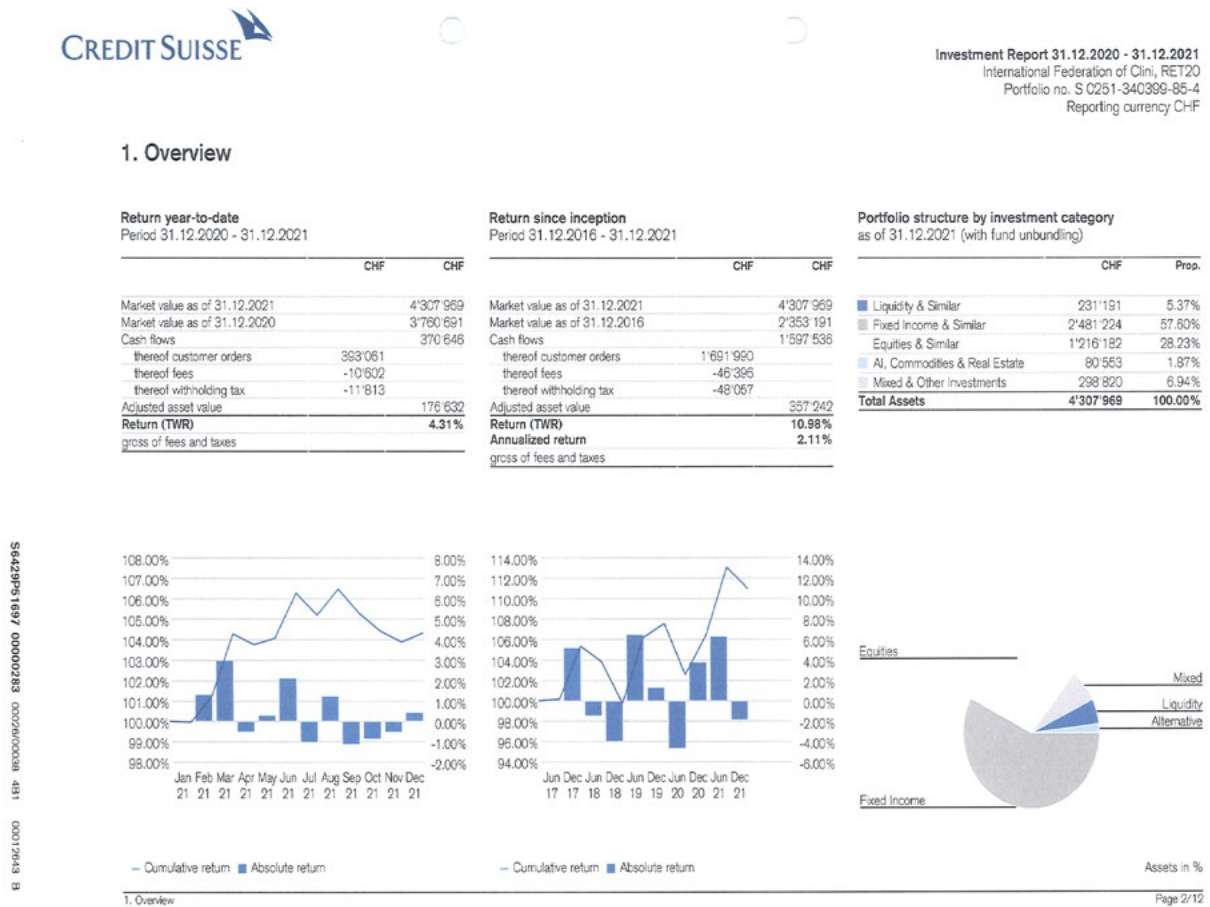
## 9. IFCC INVESTMENT AT CREDIT SUISSE IN 2021

The important issues of the agreement with Credit Swiss are outlined as below:

- Investment strategy: Income oriented
- Risk Profile: Moderate
- Risk Budget: Moderate
- Reporting currency: CHF (with investments in three currencies: CHF, EUR, USD)

**Ticket fee model: 0.20% for the safekeeping fee (no investment fee).**

Return of the IFCC investments at CS between 31.12.2019 to 31.12.2020 is shown in **Figure 7**.



**Figure 7.** Credit Suisse Investments between December 31th, 2020 and December 31th, 2021.

Return of the IFCC investments at Credit Suisse between 1.1.2017 to 8.5.2022 is shown in Figures 8 and 9.

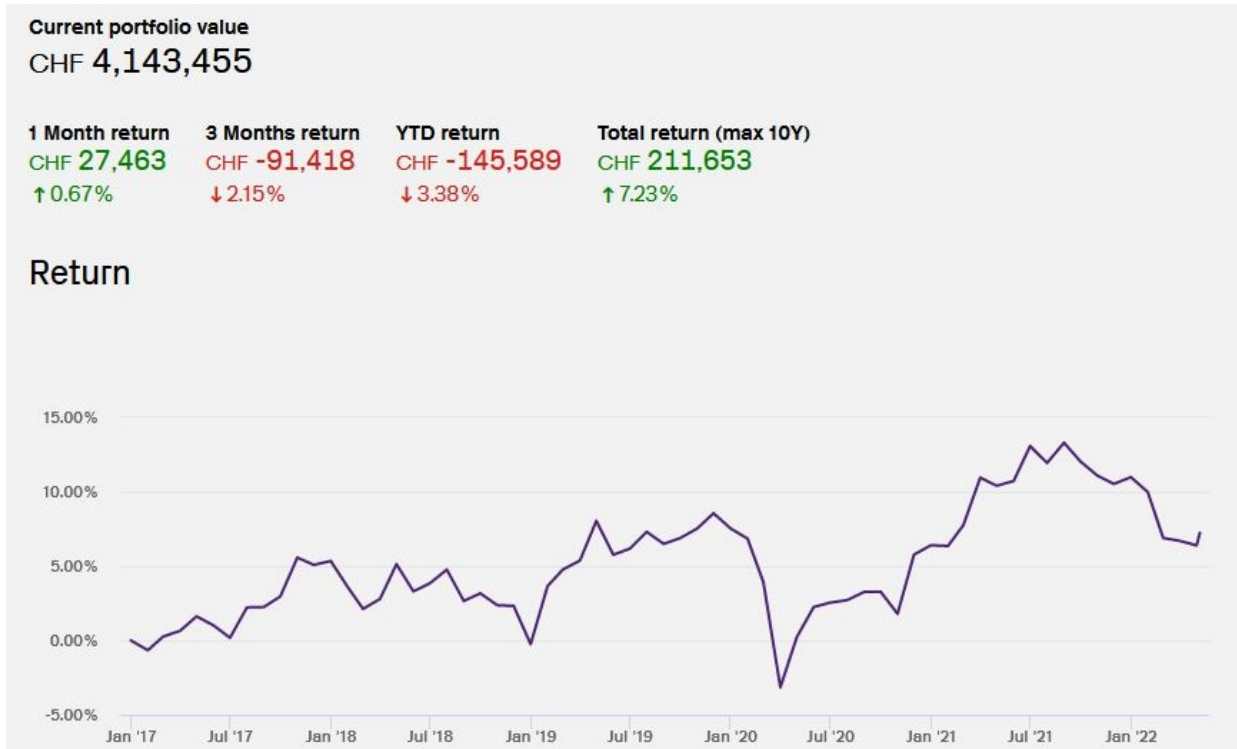


Figure 8. Credit Suisse Investments between January 1<sup>st</sup>, 2017 and May 8<sup>th</sup>, 2022.

Value as of 08.05.2022 16:37 CEST  
CHF 4,143,455  
Portfolio Number S 340399-85-4  
Investment Solution Credit Suisse Invest Partner

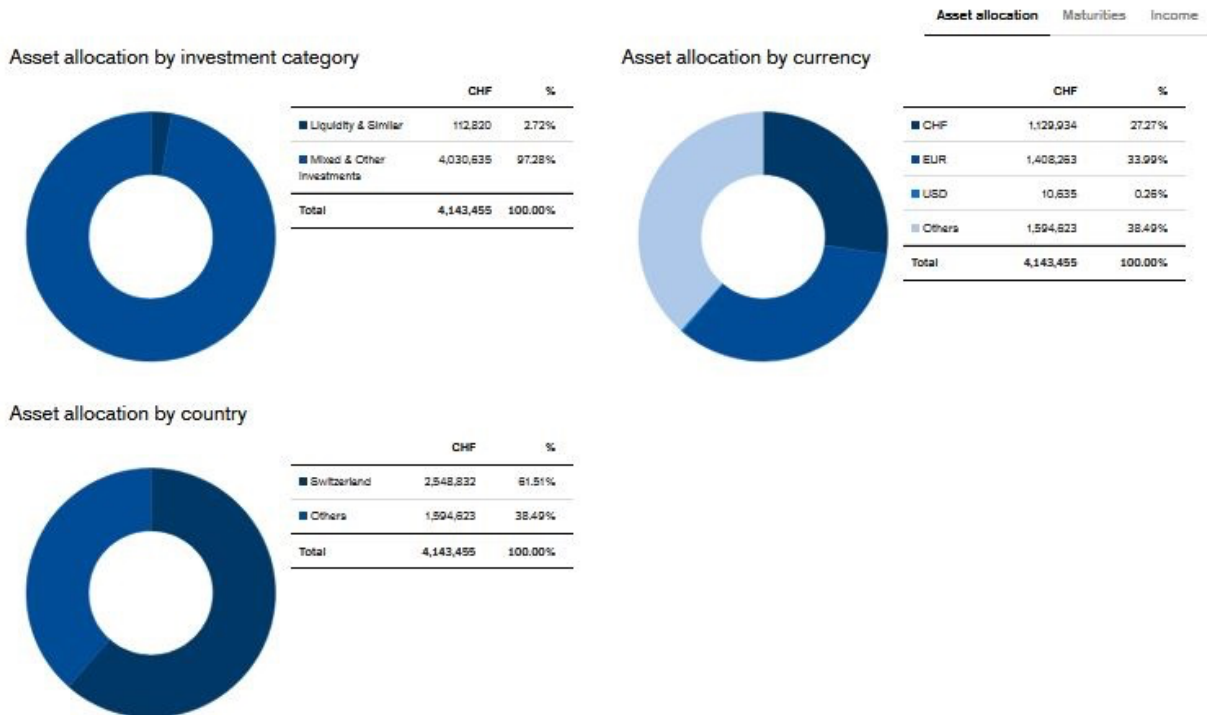


Figure 9. Credit Suisse Investments between analysis at May 8<sup>th</sup>, 2022. Alexander Haliassos - Treasurer

## CORPORATE MEMBERS' REPORT

In 2021 IFCC was pleased to welcome Technogenetics (Italy), PerkinElmer (Finland), Medix Biochemica (Finland), GenScript Biotech Corporation (Singapore) and Diagnostica Stago (France) as new Corporate Members. IFCC also welcomed Panasonic Healthcare EU (PHC-EU), formerly Mitsubishi Chemical Europe GmbH (Germany). Regrettably, in 2021 the following Corporate Members left IFCC: Agilent Technologies Inc. (United States), Beijing Dream Diagnostics Medicine (DDM) Technology Co. Ltd. (China), and Diatron (Hungary). By the end of 2021, the total number of IFCC's Corporate Members was 48. Interest in new IFCC Corporate Membership comes mainly from China (9 Corporate Members, followed by UK, 8 Corporate Members, USA, 6 Corporate Members, Germany, Japan and Finland, 4 Corporate Members each). Not all IFCC Corporate Members are manufacturers, but several are distributors. A hospital service provider (from Georgia) and a hospital (from Sri Lanka) are Corporate Members as well. In 2021, Corporate Members contributed with annual fees of ~300.000 CHF to approximately 50% of IFCC's total direct annual income from its members (which comprise National Societies and Affiliate Member Societies as well). On top of this, IFCC received sponsorship for scientific or educational projects, awards, travel of students and lecturers, and congresses (e.g. contribution to WorldLab 2022 so far is over 1.0 m CHF).

To enhance corporate membership, the Task Force Corporate Members (TF-CM), continues to be very active under the newly installed chair (Tricia Ravalico – Abbott). At the end of 2021, in addition to its 7 full members, the TF had 6 active corresponding members, representing 13 companies in total. The TF-CM is reported separately but in brief, it was established to ensure that Corporate Members' interests are better addressed within IFCC (i.e. better representation of Corporate Members, more efficient discussion among Corporate Members, identification of common topics and interaction with the direct report to the IFCC Executive Board) and to increase the engagement of Corporate Members in IFCC since many Corporate Members are not actively involved in IFCC activities. (See the respective website for details of the Task Force.)

The Corporate Members make additional important contributions to IFCC activities: Numerous delegates from Corporate Members are actively engaged in most of the Task Forces, Committees, and Working Groups in all IFCC divisions and in their Executive Committees, either as full members or as corresponding members, as well as in the Congresses & Conferences Committee.

The following are the contact information for Corporate Representatives who were / are members of the Executive Committees of IFCC's 4 divisions and the Congresses & Conferences Committee. Please feel free to reach out to them in case you have questions:

- **Scientific Division:** Michael Rottmann (Roche) (1st term Mar 2020-2022)
- **Emerging Technologies Division:** This division has two Corporate Representatives: Peng Yin (Abbott) (2nd term 2021-2023) and Markus Roessler (Roche) (2nd term 2021-2023)
- **Education & Management Division:** André Ziegler (Roche) (2nd term 2021-2023)
- **Communications & Publications Division:** Tricia Ravalico (Abbott) (2nd term 2021-2023).
- **Congresses & Conferences Committee:** Cheryl Jackson (Beckman Coulter) (2nd term 2021-2023).

The following persons are Corporate Members of the respective Congress Organizing Committees (COCs)

- IFCC / **WorldLab 2022, Seoul, South Korea:** Douglas Chung (Abbott) (postponed until June 2022 and now merged with the APFCB meeting which had been

- planned 3 months later in the same region)
- IFCC / **EuroMedLab 2021, Munich, Germany**: Abir Alhelou (Abbott)  
(postponed and now scheduled in April 2022)
  - **IFCC-EFLM WorldLab + EuroMedLab 2023, Rome, Italy**: Angel de la Fuente (Roche)

### **Conferences in 2021:**

As noted above, the COVID-19 pandemic required postponement of several IFCC conferences. According to the contracts between the professional conference organizer MZ Congressi and the exhibiting companies, the companies have to accept postponements and relocations (but not cancellations) of IFCC conferences and cannot renegotiate their participation. This should be carefully reconsidered before signing future sponsorship contracts.

On February 15-17, 2021, the IFCC conducted a virtual conference on the **Critical Role of Clinical Laboratories in the COVID-19 Pandemic**:

- Speakers came from Abbott, Ortho, Roche, and Siemens as presenters for a special Industry Panel: Technological Innovations for Today and Tomorrow.
- In addition to these companies, several others were sponsors and organized industry workshops at this conference.
- The conference and industry workshops were well attended and appreciated.

The next Corporate Members Meetings will be held during EuroMedLab in Munich on April 11, 2022. I would like to encourage all members to take part in the meeting. The respective meeting details will be communicated later.

Finally, I want to sincerely thank all Corporate Members and all IFCC officers for the engaged and constructive support that I have received. This is especially the case as this was my first year serving on the EB as Corporate Representative. I am looking forward to continuing our collaboration and moving forward the IFCC and its corporate member's interests.

*Joseph Passarelli, Corporate Member Representative*



## COMMITTEE ON CONGRESSES AND CONFERENCES (C-CC)

The thirty-eighth (38th) meeting of the IFCC Executive Board Committee on Congresses and Conferences was planned to be held on-site on November 28, 2021, in Munich, Germany in connection to the EuroMedLab. However, the congress was cancelled on November 23, 2021 due to worsening corona pandemic situation. The meeting will be re-scheduled for either EuroMedLab in Munich on April 10-14, 2022 or WorldLab Seoul on June 26-30, 2022.

The membership of the C-CC changed in the beginning of 2021. The members are the following:

Name	Position	Country	Term	Time in Office
P. Laitinen	Chair	FI	1st	2021 01 - 2023 12
M. Blanes Gonzales	Member	PY	2nd	2021 01 - 2023 12
A. Buño Soto	Member	ES	1st	2021 01 - 2023 12
C. Jackson	Corporate Member	US	2nd	2021 01 - 2023 12
J.Wesenberg	Consultant	CA		
A.Cano Huizar	Corr. Member	MX		
W.H. Fang	Corr. Member	TW		
J. Kumalawati	Corr. Member	ID		
H. Martin	Corr. Member	AU		
S. Robinson	Corr. Member	UK		
A. Sepici Dincel	Corr. Member	TR		
C. Tsatsanis	Corr. Member	GR		

## International Congresses of Clinical Chemistry & Laboratory Medicine (WorldLab)

### IFCC ICCCLM (WorldLab) Seoul, Korea 2020 (May 24-28) - Revised 2022 (June 26 - 30)

Congress President: Prof. Won-Ki Min; Congress Chair: Prof. Junghan Song

This Congress was postponed on account of the COVID-19 pandemic. Adjustments to the scientific program will be made as required.

The 24<sup>th</sup> ICCCLM will be held jointly with the 16th Asia-Pacific Congress of Clinical Biochemistry

### IFCC ICCCLM (WorldLab) Rome, Italy 2023 (May 21-25)

Congress Chair: Prof. Sergio Bernardini

The XXV IFCC WorldLab / XXV IFCC-EFLM EuroMedLab Rome 2023 will be held in Rome from 21 to 23 May 2023. The venue is already confirmed and booked: Roma Convention Center La Nuvola. The general timetable for the congress has been established. The COC and SPC are expected to meet when conditions allow.

### IFCC ICCCLM (WorldLab) 2024

The revised ICCCLM Congress Guidelines have been approved by EB at the end of 2021. Due to revision of the guidelines the schedule of WorldLab was changed to 2-year cycle. Thus, WorldLab will take place on even years (2022, 2024, 2026, 2028, 2030). EuroMedLab will take place on uneven years (2021, 2023, 2025, 2027, 2029, 2031).

The call for bids to host WorldLab 2024 has been distributed on October 1, 2021 with the deadline of November 25, 2021. The deadline was extended to December 15, 2021 on November 26, 2021.



Guidelines for IFCC ICCCLM (WorldLab) 2024 have been approved in September 2021

## **Regional Congresses of Clinical Chemistry & Laboratory Medicine**

### **APFCB, Sydney, Australia, 2022 (October 15-18) - Revised 2022 (June 26 - 30)**

Congress Chair: Helen Martin

The APFCB Congress 2022 will be held jointly with the ICCCLM Seoul 2022.

### **EuroMedLab, Munich, Germany, 2021 (May 16 – 20) – Revised 2021 (November 28 – December 2)**

Congress Chair: Dr. Karl Lackner

Planning for this congress continued as required despite the COVID-19 pandemic. The program is close to complete. Sponsorships and the Exhibition are well in line with expectations. Because of the COVID-19 pandemic, this Congress has been rescheduled to November 28 – December 2, 2021. On November 23, 2021 the congress was cancelled due to worsening corona situation. The new date is April 10-14, 2022.

### **EuroMedLab, Rome, Italy 2023 (May 21-25)**

See above - IFCC ICCCLM (WorldLab) Rome, Italy 2023 (May 21-25)

A separate EuroMedLab will not be held in 2023.

### **EuroMedLab, 2025**

The call for bids to host EuroMedLab 2025 has been postponed due to revision of EuroMedLab Congress Guidelines. The revised guidelines have been approved by EFLM and IFCC EBs in December 2021. Due to revision of the guidelines the schedule of EuroMedLabs and WorldLabs were changed to 2-year cycles. Thus, EuroMedLab will take place on uneven years (2021, 2023, 2025, 2027, 2029, 2031). WorldLab will take place on even years (2022, 2024, 2026, 2028, 2030).

### **COLABIOCLI, Leon, Mexico 2022 (March 30 – April 2)**

Congress Chair: Dr. Marie Jezebel Vite Casanova

COLABIOCLI Congress will be held in Leon, Mexico on March 23-April 2, 2022. The scientific program has been finalized.

### **IFCC Symposia are the following:**

IFCC Sustaining High Quality Clinical Laboratory Services in a Rapidly Changing World (C-CLM) EDUCATION

- Speakers: E Randell (UK) P Sharma (India) S Yenice (Turkey) and P Mitra (India)

IFCC Guidance for the Implementation of Custom-made Genomic Panels (ETD WG-GCP)

- Speakers: R Sussmano (USA) and C Davies (USA) Y Martei (Botswana) and J Morrisette (USA)

IFCC Committee on Mobile Health and Bioengineering in Laboratory Medicine

- Speakers: D Gruson (Belgium) and P Dabla (India) B Gouget (France) and J H. Nichols (USA)

### **AFCB, Beirut, Lebanon, 2021 (May 27 – 29) NEW DATE TO BE ANNOUNCED**

Congress Chair: Dr. Christian Haddad

Planning for the congress has been delayed on account of the recent events in Beirut (the explosion) and Lebanon (financial collapse). The congress location has not been decided. May 2021 has been cancelled due to COVID and political problems. The new date is still to be announced



## **AFCC, Lusaka, Zambia, 2021 (September 23 – 25)**

Congress Chair: Mr. Victor Daka

The congress has been postponed to 11-12 November and it has been changed to virtual meeting due to the corona pandemic situation. No report has been received.

The following IFCC symposia have been proposed and selected:

### **- IFCC Committee on Clinical Laboratory Management (IFCC C-CLM)**

**Symposium topic: Planning and structuring the stakeholder relations in the laboratory management.**

Strategies for effective conflict management in the workplace - Dr. Sedef Yenice

Becoming a skilled communicator in clinical laboratory management - Dr. Merve Sibel Gungoren

The impacts of Ethics and Value in laboratory medicine - Dr. Praveen Sharma

### **- IFCC Division Emerging Technologies**

**Symposium topic: Emerging Technologies in Clinical Laboratories**

Managing Big Data through Artificial Intelligence Tools – Professor Sergio Bernardini

Breaking down barriers in scaling digital health and virtual care in LMIC – Dr. Bernard Gouget

Genome, Exome, and Targeted Next-Generation Sequencing in Neonatal Diabetes – Ioannis Papassotiriou

### **- IFCC Committee on POCT**

**Symposium topic: Point-of-care-testing**

How to establish a Point of Care Testing training program - Julie Shaw

Use of Quality Indicators in monitoring a POCT Program -Paloma Oliver

How to analyse instrument validations - Adil Khan

How to troubleshoot inaccurate results - Adil Khan

POC COVID-19 Antigen Testing - Gerald Kost

## **IFCC Specialised Conferences**

### **IFCC Virtual Conference - February 15 – 17, 2021**

Critical Role of Clinical Laboratories in the COVID-19 Pandemic

This is the first of perhaps an ongoing series of IFCC virtual conferences.

### **Congress Guidelines and Other Documents**

Review with revisions as required must be completed every three years or earlier if required.

### **Auspices Guidelines and Application Forms**

Current versions May 2020 and January 2021

### **ICCCLM Congress Guidelines and Application Form**

Current versions September 2021

### **EuroMedLab Congress Guidelines and Application Form**

Current versions December 2021

### **Guidance for National and International Congresses**

Current version May 2019

### **ICCCLM and EuroMedLab Congress – Evaluation and Scores Template**

Current version September 2021

## **Scientific Program Guidelines for ICCCLM (WorldLab)**

Current version May 2019

## **Scientific Program Guidelines for EuroMedLab**

Current version August 2017

## **Satellite Meeting Guidelines for an IFCC-sponsored Congress / Conference**

Current version May 2019

## **IFCC Guidelines for Compliance with Applicable Codes of Ethical Business Practice**

Current version May 2019

## **IFCC General Conference**

14th IFCC General Conference will be held on October 27-31, 2022

## **Congresses with IFCC Auspices**

2014 – 40 events

2015 – 45 events

2016 – 70 events

2017 – 55 events

2018 – 76 events

2019 – 82 events

2020 – 52 events – decrease attributed to COVID-19

2021 – 59 events

The significant development in 2020 was the availability of IFCC auspices for IFCC Corporate Member events.

*Päivi H. Laitinen, C-CC Chair*



## SCIENTIFIC DIVISION (SD)

During 2021, the following members served on the SD Executive Committee:

**Chair:** Philippe Gillery (France)

**Vice-Chair:** Christa Cobbaert (the Netherlands)

**Secretary:** Garry John (United Kingdom)

**Members:** Barnali Das (India), Konstantinos Makris (Greece), Mario Plebani (Italy)

**Corporate representative:** Michael Rottmann (Germany).

**Invited Representatives of International Organizations:** Ian Young (ICHCLR), Heinz Schimmel (JRC), Karen Phinney (NIST), Chris Burns (NIBSC), Yang Zhen (NIFDC), Greg Miller (JCTLM), Ralf Josephs (BIPM), Liesbet Deprez (JRC).

Several virtual meetings were held during 2021/2 due to travel restrictions caused by the pandemic: June 9<sup>th</sup>, 2021, December 22<sup>nd</sup>, 2021 and January 12<sup>th</sup>, 2022.

Functional units' visioconferences were also held on April 20<sup>th</sup> with C-NPU, WG-ID, WG-CSF and C-MD.

### ***Relationship with International Organizations***

The SD continues to pursue the expansion of its activities to collaborate with international organizations to promote the implementation of the concept of traceability in laboratory medicine and the implementation of reference measurement systems.

### **Joint Committee on Traceability in Laboratory Medicine (JCTLM)**

There was a JCTLM Stakeholders meeting on 13<sup>th</sup> December 2021.

There was a IFCC/JCTLM/ICHCLR Workshop on "Overcoming challenges to global standardization of clinical laboratory testing: reference materials and regulations" (virtual, December 6<sup>th</sup>-December 10<sup>th</sup>, 2021).

The goal is to publish a workshop report with recommendations how to achieve globally standardized medical laboratory results. Below is the summary of the workshop:

#### **1. General observations**

- Effectiveness of test results for patient care is the primary goal for standardization and the guiding principle for optimized practices supporting standardization.
- Before starting a standardization project for a measurand, an assessment should be performed to determine the clinical impact of the current situation, and of the resources and total cost to complete standardization.
- Educational curricula for providers, laboratorians, IVD producers and regulators are needed to improve understanding of the standardization process and its value to promote safe and effective clinical laboratory tests.

#### **2. Fit-for purpose matrix-based certified reference materials**

- Definition of the measurand and the molecular structure actually measured by IVD devices is important.
- IVD manufacturers need an assured supply of a CRM with a backup supplier; excessive redundancy of suppliers is not the best use of limited resources.
- Prioritization of measurands for which new CRMs are needed should involve clinical laboratories, clinical practice groups, IVD manufacturers, NMIs and other producers.
- Commutability of matrix-based CRMs with clinical samples is an essential property that consumes a substantial fraction of the resources.
- Listing RMs known not to be commutable would be useful.

- Agreeing on a standard content and format for a CRM certificate or report would aid IVD manufacturers with regulatory submission documentation.

### 3. Meeting regulatory requirements in different countries

- Regulatory agencies promote safe and effective patient care. Regulations and requirements for data submission are different among regulatory agencies.
- Cost for regulatory submissions in multiple countries has made IVD manufacturers reluctant to adopt some newly developed standardization initiatives.
- Regulators promote a risk based assessment to determine how much new data is needed to review, on a case by case basis, the impact of recalibration. Standardized results promote reduced risk for erroneous medical decisions and should be part of the risk assessment.
- Agreeing on requirements for documentation when a calibration hierarchy is modified to achieve standardized results for clinical samples, and no other changes are made to an IVD device would make regulatory submission simpler.
- Including representatives from regulatory bodies along with clinical laboratories, clinical providers, RM producers and IVD manufacturers in standardization projects will help to clarify data requirements for regulatory submission that can be collected as part of the standardization activity.

Cooperation and collaboration among all stakeholders is essential to optimize standardization of clinical laboratory results in the best interests of the patients we all serve.

### 4. Next steps

- The organizing committee will prepare a manuscript with conference observations and recommendations.
- The manuscript will be posted to the JCTLM web site as a Google document for comment. Participants will be notified when posted.
- The final version will be submitted for publication.

JCTLM will roll out a new web site in April/May 2022. JCTLM recognises there is a need for training to submit to the website; educational material will be made available. Uncertainty data is probably one of the more difficult aspects in getting JCTLM approval in relation to ISO regulations. Current difficulties in finding relevant documents will hopefully be addressed in the new website

### Joint Committee for Guide in Metrology (JCGM)

There is discussion started by JCGM WG2 where Gunnar is the IFCC representative. There are 8 organisations in JCGM; which share the responsibility for the VIM.

VIM3 is a document in three sections. Devices for measurement, Measurement and Quantities and units In VIM4 these three sections are now arranged into six sections; the Measurement sections have been kept; the Devices for measurement chapter has been divided into three. And a sixth chapter added on Nominal Quantities. The new document was sent out for comment to JCGM stakeholders and 1500 comments were received; most comments were to the new chapters.

There are three types of “observations” in VIM. There is no name for “ratio quantity”. A substance concentration cannot have a value unless it is related to something. Quantity is not defined.

There is an argument that VIM should only cover measurements with values and units; but some think all should be covered; there is no right answer. What should an “observation” be called? In ISO 15189 “examination” covers all three types of observations. But this was not accepted by the WG so in VIM4 this is restricted to the third type of observation. Theoretically “measurement” or “examination” could apply to all three types of procedures.



Gunnar Nordin argued for the term “examination” but the arguments against is that the term may be thought to relate to examination (as in written examination). Another term being considered is “evaluation”. Examination is recognised by ISO 15189.

What is a value? One option is as an individual quantity, but there are strong objections to this. Gunnar Nordin argues strongly that value is a quantity. This is the historical position of IFCC.

The last point is the controversial question of what is “accuracy”? VIM refers to three different accuracy’s: accuracy of measurements, accuracy of results and accuracy of instruments. VIM4 has retained that generic definition of accuracy. But the definition has changed from comparing to a “true quantity value” to comparing to a “reference value”; so the accuracy can be known if the reference value is known; this is controversial. The next version on VIM should be clear on accuracy and bias.

What is “uncertainty”? Can this be expressed mathematically? VIM4 keeps the view that uncertainty is something that can be expressed mathematically.

## **Joint Research Center (JRC)**

### ***CRMs for auto immune disorders [IFCC Committee on Harmonization of Autoimmune Tests (C-HAT)]***

CRM for IgG anti-B2GP (antiphospholipid syndrome (APS)): ERM-DA477/IFCC. Report of the WHO drafted, still on track to submit the WHO as a candidate for the international standard in Spring 2022. If accepted the WHO will assign the arbitrary values. NIBSC has agreed to act as mediator and custodian of a part of the batch. JRC will take care of the distribution of the CRM to IVD manufacturers and clinical laboratories.

CRM for IgG and IgA anti tissue transglutaminase (anti-tTG) (Coeliac disease): EURM-487/IFCC The material has been processed. Homogeneity and stability studies planned for Jan 2022.

IgG anti-GBM (vasculitis): ERM-DA484/IFCC

Draft paper on the commutability study of the pilot batches prepared. Most suitable starting material was selected. Purchase of the large batch ongoing.

### ***CRMs for CSF proteins [IFCC Working Group on CSF proteins (WG-CSF)]***

CRM for A $\beta$ 1-40 in CSF: ERM-DA480/IFCC, ERM-DA481/IFCC, ERM-DA482/IFCC

Studies to evaluate if the existing CRMs (ERM-DA480/IFCC, ERM-DA481/IFCC and ERM-DA482/IFCC) can also be certified for A $\beta$ 1-40 are ongoing. Homogeneity, short and long-term stability have been tested and results are good.

A calibrant peptide has been selected and quantified with amino acid analysis (AAA) by LNE, LGC and JRC. Purity assessment is still ongoing in collaboration with LNE and LGC. The impurities have been identified, the final value assignment for beginning 2022.

Development of CRM for Tau and Neurofilament light (Nfl): on hold until new contract agent recruited, planned for Spring 2022.

### ***CRMs for Haemoglobin A2 [IFCC Working Group on Standardisation of Haemoglobin A2 (WG-HbA2)]: ERM-DA485/IFCC and ERM-DA486/IFCC***

For the matrix CRM: 2 lyophilised materials have been processed: 1 with normal HbA2 levels and 2 with elevated HbA2 levels. First checks with several commercial assays show good results. Homogeneity and short term stability studies planned for January 2022.

### ***CRMs for apolipoproteins [IFCC Working Group on apolipoproteins by Mass Spectrometry (WG-APO MS)]***

For the peptide calibrators for Lp(A): The JRC has produced the first batches of peptides calibrators that can be used to investigate the completeness of the digestion of apo(a) in the candidate RMP. The purity check and AAA measurement on the peptides calibrators will be done by the JRC and LNE.





For the serum CRM for Lp(a): several candidate RMs have been investigated in a commutability study. Results of this study indicate that CRM based on unspiked pools of human serums have the best commutability profile. Publication on the correlation/commutability study is prepared and submitted to the IFCC SD for review.

**Work on standardisation/harmonization faecal immunochemical testing [IFCC working group in Faecal Immunochemical Testing [WG-FIT]]**

The results of the correlation/commutability study are analysed. The results of 4 frequently used FIT methods correlated quite well but there is a significant bias. So using a common threshold for these 4 methods is currently not feasible. The 7 candidate RM were tested for their commutability and 2 of them had a good commutability profile. These 2 RM consist of Hb from human blood diluted in the specific buffers of each FIT method. Addition feasibility studies are needed to test if these RM can be produced in larger stable batches. The value assignment will also be difficult given the low Hb concentration: 1000 times lower than in blood.

**CRMs for enzymes [IFCC working Group on Pancreatic Enzymes (WG-PE)]**

The project for the production of a CRM for the catalytic activity of alkaline phosphatase (ALP) is started.

The CRM for the catalytic activity of aspartate aminotransferase (AST) will need to be replaced within 3 years so the search for suitable starting material has started.

**CRM for Estradiol in human serum**

The sales stocks of the CRMs BCR-576-578 are running low. These materials will be replaced with new batches which will be tested for their commutability for several IVD methods. Discussions ongoing to include these new materials in the upcoming CCQM study on estradiol in 2024-2025.

**National Institute of Standards and Technology (NIST)**

NIST’s lab activities remain limited because of the COVID-19 pandemic. Status information on RM/SRM projects that may be of interest is included in the table.

NIST Clinical Certified Reference Materials; November 2021 update reflecting changes within the last 12 months. RGTM is Research Grade Test Material.

Analyte	NIST Identifier	Release Date	Description
Glucose in Frozen Human Serum	SRM 965c	2022	<ul style="list-style-type: none"> <li>Renewal material</li> <li>Material acquisition in progress</li> </ul>
Creatinine in Frozen Human Serum – Low Level	SRM 967b	2023	<ul style="list-style-type: none"> <li>Renewal material</li> <li>Material acquisition in progress</li> </ul>
Bovine Serum Albumin (7% solution)	SRM 927f	June 2021	<ul style="list-style-type: none"> <li>Renewal of SRM 927e</li> </ul>
Human Cardiac Troponin Complex	SRM 2921a	Summer 2022	<ul style="list-style-type: none"> <li>Renewal of SRM 2921</li> </ul>
Vitamin D Metabolites in Frozen Human Serum (Total 25-Hydroxyvitamin D Low Level)	SRM 2969	August 2021	<ul style="list-style-type: none"> <li>Lower concentration of 25(OH)D than SRM 972a</li> </ul>
Vitamin D Metabolites in Frozen Human Serum (25-Hydroxyvitamin D2 High Level)	SRM 2970	August 2021	<ul style="list-style-type: none"> <li>Higher concentration of 25(OH)D2 than SRM 972a</li> </ul>



Analyte	NIST Identifier	Release Date	Description
Albumin and Creatinine in Frozen Human Urine	SRM 3666	Spring 2022	• Certification measurements in review
Homocysteine in Frozen Human Serum	SRM 1955a	2023	• Material acquisition in progress
Cardiac Troponin I in Frozen Human Plasma	RM 8121	2022	• Material acquisition in progress
Electrolytes in Frozen Human Serum	SRM 956e	2022	• Material acquisition
Bilirubin	SRM 916b	September 2021	• Renewal of SRM 916a
Glucose	SRM 917d	2022	• Renewal of SRM 917c • Procurement of material in progress
Tripalmitin	SRM 1595a	2022	• Renewal of SRM 1595 • Procurement of material in progress
JC Virus DNA Quantitative Standard	SRM 2367	Late 2021	• Documentation in review
COVID-19 Serology	RGTM 10196	Late 2021	• Candidate materials acquired

### European Federation of Clinical Chemistry and Laboratory Medicine (EFLM)

The EFLM Task Force on European Regulatory Affairs (ERA) and the IVDR are working closely together to guide the transition from IVD directive to IVD regulation. The TF has been trying to find out what the current situation is. It is obvious that the amount of work required that timings have been grossly underestimated. There are about 40,000 medical tests that need consideration. There is a risk based classification, but all tests have to go through the EU Regulatory procedure; scientific validity has to be documented depending on the intended use of the test, but in addition analytical quality has to be defined in terms of accuracy and sustainability. In April there was a workshop with the European Parliament and made it clear that we needed to know the real facts. About 25% of tests have been discontinued because manufacturers could not identify a notified body, they tried to apply and go through the process but the regulatory infrastructure was not there. Following the work of the TF the EU now recognise the amount of work required and the un-readiness of manufacturers due to the amount of work required. COVID has not helped the situation. Health ministers of all member states were alerted and about 17 of them raised concern at meetings; an amendment has been made on 14th October 2021. Legislation has not changed, but now there is a phased rollout for both commercial and in-house tests (more time to decide whether to continue or not). The recommendations have been voted on and passed. Specialist low volume tests need special consideration. There is now postponement until 2024 – 2028 depending on the risk; in-house tests will be the later date. Manufacturers have been working on these new requirements for the last two years. There appears to be a big difference in the understanding of the situation in different countries. The effect of this will extend to countries outside the EU.

### World Health Organization (WHO)

There has been no communication regarding IFCC attendance at the WHO Expert Committee on Biological Standardization. There has been little communication overall from WHO, this may be due to the primary focus of WHO at present remains the pandemic.





## **Congresses (WorldLab, Regional and other congresses):**

### **EuroMedLab 2021, 24th IFCC-EFLM European Congress of Clinical Chemistry and Laboratory Medicine**

Munich, Germany

Postponed to: April 10-14th, 2022

<http://www.euromedlab2021munich.org/>

**The programme will be the same as the original programme**

### **WorldLab 2020, 24th International Congress of Clinical Chemistry and Laboratory Medicine**

Seoul, Korea

Postponed to: June 26-30, 2022

**Sessions will be as in original meeting.**

SD Symposium (to be confirmed with updated June program):

### **The future of standardization in Laboratory Medicine: challenges and opportunities**

**Chair: Philippe Gillery**

1. Standardization and harmonization of biological measurements: successes, pitfalls and challenges Philippe Gillery (FR)
2. Using a harmonization protocol to establish metrological traceability Greg Miller (US)
3. Challenges in test standardization: a manufacturer's perspective Harald Althaus (DE)
4. Proteoform analysis to fulfil unmet clinical needs Christa Cobbaert (NL)

### **Activities of Committees and Working Groups**

The Committees (Cs), which are theme-oriented, carry out much of the scientific and professional activities of the SD. Their work is often in close collaboration with other international organizations. For more specific tasks, the activities are usually accomplished through Working Groups (WGs).

## **Committees**

### **C-Nomenclature, Properties and Units (C-NPU);**

Chair: Young Bae Lee Hansen (DK)

**Term of Reference 1. To continuously provide advice for the management, updating and publishing of the NPU terminology.**

### **List 2021 accomplishments for this Term of Reference**

The NPU Steering Committee website continues to act as the main governance site (<http://www.npu-terminology.org>), while NPU codes can be searched from (<http://www.ifcc.org/ifcc-scientific-division/sd-committees/c-npu/npusearch/>).

Rules and principles of NPU terminology can be read at <https://labterminology.com>. (The homepage is still under development.)

C-NPU has held teleconferences meetings supporting, advising and resolving principle issues (terminological) that have been raised by national NPU Release Centres of Denmark (also international), Norway and Sweden.

The function of International NPU Release Centres is being maintained by the Danish NPU Release Centre.

The International NPU Release Centre (Danish Health Data Authority) is in a tender process of requiring a new database software for NPU codes that can administer and publish NPU codes.

### **List planned activities in 2022 for this Term of Reference:**

To continue regular teleconferences and face-to-face meetings of C-NPU.

To continue to develop the homepage: <https://labterminology.com>.

C-NPU continues its role as the authority of NPU terminology and is responsible for updating NPU terminology and supporting the NPU Release Centres.

The International NPU Release Centre continues to be the administrator of updating NPU terminology and provides the users with NPU codes according to C-NPU's decisions.

The National Release Centres of Denmark, Norway and Sweden provide national NPU support for those countries and are represented both on the SC NPU and C-NPU.

Danish Health Data Authority continues to function as the International NPU Release Centre.

International NPU Release Centre (Danish Health Data Authority) continues the work of requiring a new NPU database software.

To submit a draft of articles of association of SC-C-NPU (Joint committee of SC-CNPU (IUPAC) and C-NPU (IFCC)).

### **Term of Reference 2. To make recommendations on NPU for reporting clinical laboratory data that conform to or adapt current standards of authoritative organizations, and that will improve their utilization for health care.**

#### **List 2021 accomplishments for this Term of Reference**

It has been decided to use “%” or 10<sup>-2</sup> as units for counting haematological cells (see pending publication).

A project concerning Laboratory Information Model (standardizing and structuring laboratory reports) has started.

#### **List planned activities in 2022 for this Term of Reference**

To publish opinion letters about using a coherent system of units in different scientific journals.

To continue the project, Laboratory Information Model, and publish the results as opinion letters.

### **Term of Reference 3. To provide a connection with other organizations concerned with NPU such as the Bureau International des Poids et Mesures (BIPM), the European Committee for Standardization (CEN) and the International Organization for Standardization (ISO), and, by extension, clinical laboratory science societies such as the International Union of Pure and Applied Chemistry (IUPAC), and the in vitro diagnostics industry, to ensure that problems encountered by health care professionals in the area of NPU are considered by those organizations.**

#### **List 2021 accomplishments for this Term of Reference**

IHTSDO/SNOMED-CT has invited Steering Committee in first half of 2021 for talks about future close cooperation between NPU terminology and SNOMED-CT.

WHO invited representatives from Danish Health Data Authority to discussions about NPU terminology.

A C-NPU response to a report “Global Survey of Standards for quantities and units”, made by ISO TC 215/12, was submitted to ISO in early 2021. As a result, ISO TC 215/12 has invited IFCC to participate in future discussions about standardisations in quantities and units.

A draft of VIM4 has been submitted to stakeholders for hearings. C-NPU consultant Gunnar Nordin is deeply engaged in the work and has made presentations of Vocabulary of Nominal Property (VIN) to different stakeholders.

Titular member Koh Furuta (KF, JPN) participates in the work of revision of standard ISO 15189. Elective member Rebecca Ceder (Equalis, SWE) and C-NPU consultant Gunnar Nordin are engaged in an EU project “Electronic cross-border health services.” In that work, a mapping between NPU and LOINC codes are being explored in order to exchange laboratory results between EU countries.





### **List planned activities in 2022 for this Term of Reference**

C-NPU remains a joint committee with both IFCC and IUPAC representation.

Helle Johannessen and Ulla Magdal Petersen (DK) continue as IUPAC representatives in C-NPU.

To continue talks between IHTSDO/SNOMED-CT and Steering Committee.

Titular member Koh Furuta (KF, JPN) continues to participate in ISO TC 212.

C-NPU consultant Gunnar Nordin (SWE) continues participation in BIPM WG2.

IFCC Scientific Division has applied for participation as Liaison C and nominated C-NPU Chair Young Bae Hansen (DK) as an IFCC representative.

Elective member Rebecca Ceder (Equalis, SWE) and C-NPU consultant Gunnar Nordin continue in the EU project.

**Term of Reference 4. To act as a consultant group on NPU in clinical chemistry and, by extension, in the rest of clinical laboratory sciences to international scientific panels, regional and national clinical laboratory sciences organizations, editors of scientific journals, manufacturers of clinical laboratory instrumentation and products, and to individual clinical laboratory professionals and other health care professionals.**

### **List 2021 accomplishments for this Term of Reference**

- Chair and individual NPU members continue to be active with their societies, particularly in the informatics and terminology arenas
- NPU connected members are active as members of their respective national NPU release centres (NRCs)

### **List planned activities in 2022 for this Term of Reference**

*To participate in discussions to NPU terminology, health informatics and other related issues through journals.*

### **C-Molecular Diagnostics (C-MD);**

Chair: Parviz Ahmad-Nejad (DE)

### **Term of Reference 1. Provide reports about the current status quo in MDX**

#### **List 2021 accomplishments for this Term of Reference**

The committee has written a review article in a special issue of the journal Clin Chem Acta that addresses the current and future challenges of quality assurance in molecular diagnostics.

The publication was released in August 2021. Furthermore, two key initiatives on this topic were launched or conducted at the term of reference via the SurveyMonkey software platform. First, a survey on the current status quo of SARS-CoV2 diagnostics molecular genetics worldwide was initiated. Here, more than 270 laboratories participated in the survey and the results of the investigation/survey are currently being summarized and prepared for publication in Clin Chem Acta. In addition, there is already a second almost completed survey on the topic of status quo in molecular diagnostics of circulating tumour DNA. We are currently planning to initiate this survey at the end of January. Both surveys have been and will be shared in English and in Spanish.

#### **List planned activities in 2022 for this Term of Reference**

Publication of the results.

We will initiate a Survey covering the current status quo of SARS-CoV2 Sequencing und PCR Testing as an update.

We will update the EQA List on the IFCC C-MD website.

**Term of Reference 2. To produce guidelines on molecular techniques and their validation for routine diagnostics**

### **List 2021 accomplishments for this Term of Reference**

Due to the Corona pandemic and the additional partly massive workload in some laboratories of the committee members, nothing substantial could be achieved for this point.

### **List planned activities in 2022 for this Term of Reference**

For 2022 we are planning - possibly also in cooperation with the C\_CMBC - guidelines on how to perform e.g. PCR or how to design primers. The cooperation with the c-CMBC is charming because the documents can then be tested directly in practice.

### **Term of Reference 3. To create a network of locus-specific IFCC Molecular Diagnostics Centres**

#### **List 2021 accomplishments for this Term of Reference**

Due to the Corona pandemic and the additional partly massive workload in some laboratories of the committee members, nothing substantial could be achieved for this point.

#### **List planned activities in 2022 for this Term of Reference**

Over the past years, the so-called molecular diagnostic centers of the IFCC have been established. At the present time, it is unclear what function the expert laboratories will realistically assume. It is unclear whether the network functions at all and what it looks like in practice. Correspondingly, the centers should be asked about their claim. The generated data will be discussed with the Scientific division.

### **C-Traceability in Laboratory Medicine (C-TLM);**

Chair: Anja Kessler (DE)

### **Term of Reference 1. To support activities regarding Traceability in Laboratory Medicine, permitting IFCC to continue its international role in this area and providing an operating link between the SD and the WGs of the Joint Committee on Traceability in Laboratory Medicine (JCTLM), concerning identification of reference measurement procedures, reference materials and reference laboratories.**

#### **List 2021 accomplishments for this Term of Reference**

The chair of C-TLM participated in the (virtual) annual meeting of JCTLM DatabaseWG and JCTLM Executive Board. The results of the annual survey RELA for calibration laboratories are discussed and were among other factors responsible for the decision of listing nominated calibration laboratories in the JCTLM DataBase.

#### **List planned activities in 2022 for this Term of Reference**

C-TLM will contribute to the next JCTLM symposium "Traceability in laboratory medicine - vital for clinical value" at WorldLab2022 in Seoul which was postponed to June 2022. The title of the lecture will be "Traceability for Laboratory Medicine – the role of the national measurement institute" and will highlight the qualification of calibration laboratories and their impact on implementation of metrological traceability.

### **Term of Reference 2. To support reference laboratories in the context of complete reference systems (accepted reference measurement procedures of higher order, reference materials, and reference laboratories) by establishing an External Quality Assessment Scheme (EQAS) for reference laboratories in order to monitor their competence.**

#### **List 2021 accomplishments for this Term of Reference**

578 results of RELA 2021 were published in September (<http://www.dgkl-rfb.de:81>). C-TLM as advisory board of this IFCC survey has been discussed the results in detail at the annual meeting. The results were presented at the JCTLM Members & Stakeholders On-line Meeting on December 13, 2021.





The revision of the RELA procedure manual has been started and will be proceed in 2022. One subject of the revision is the discussion whether the limits of equivalence are adequate or have to be changed.

### **List planned activities in 2022 for this Term of Reference**

For RELA 743 orders (+8%) are registered, the dispatch of the samples is in progress. The evaluation will be published in June 2022.

Special focus will be on HbA1c. C-TLM organizes a joint project with C-EUDB and CCQM. The participants of RELA 2022 and 9 metrology institutes will analyse the same samples within the separate projects. After the deadline all results can be compare to each other. At the same time, the participants of RELA 2022 will get two additional lyophilized samples. These samples are prepared for the EurA1c study 2021. Similar to the comparison between RELA and CCQM, the results of the calibration laboratories participating in RELA2022 can be compare to those of the routine labs participating in the international survey EurA1c2021. Finally, we will demonstrate the current status of traceability between approx. 5000 routine labs, 20 calibration labs and candidate labs respectively, and 9 metrology institutes.

### **Term of Reference 3. To promote establishment and maintenance of IFCC reference laboratory networks for clinically relevant measurands (e.g. the IFCC HbA1c network).**

#### **List 2021 accomplishments for this Term of Reference**

##### **Report HbA1c Network**

Carla Siebelder, Network Coordinator, Eline van der Hagen, associate Network Coordinator  
As IFCC HbA1c Network two intercomparison studies are organised annually. However, in 2021 the collection of blood and therefore the study had to be postponed due to the COVID19 pandemic. For the study about 60 diabetic volunteers, vulnerable patients, are required to donate blood and it was unethical and also legally restricted to let them donate in the beginning of the year, in the heat of the pandemic. We were lucky to be able to organise the campaign in July, where most people were vaccinated. As a result, there was only one study this year. The approved network laboratories, candidate laboratories (Brazil and India) and the designated comparison method networks in the US and Japan participated. Due to the pandemic it was a challenge to get the samples shipped over the world.

The study is finished. All approved network laboratories kept their approval and the master equations between the IFCC RMP and the designated comparison methods were again confirmed. The 2 candidate laboratories didn't gain approval. We have 19 approved network laboratories.

Due to the postponement of EuroMedLab Munich the face-to-face meeting scheduled on 1 December is cancelled and the network will have a Zoom meeting instead.

For educational activities the network is part of the IFCC C-EUDB. Due to COVID there haven't been live congresses but some members gave Zoom lectures. In 2022 a symposium is scheduled at the IFCC WorldLab in Seoul.

EurA1c, the multinational project in which national EQA organisers share two samples, was organised for the fifth time in 2020. We have seen a yearly increase in participation. In 2020 we had 27 EQA organisers from 22 countries participating. The number of participating laboratories was more than 5000. Currently the 2021 trial is running.

##### **Report CDT Network**

Carla Siebelder, Network Coordinator, Eline van der Hagen, associate Network Coordinator  
The CDT network of reference laboratories organises an intercomparison study annually. In 2021 all 5 approved network laboratories and 1 candidate laboratory participated. A second candidate lab was not yet ready to participate. All approved labs kept their status of approval. The candidate was approved for the first time. According to the rules of the network this candidate has to pass in next year's study (two consecutive studies) to get the status of approved lab.

The network intended to meet at EuroMedLab Munich on Sunday 27 November but due to the postponement of the congress a Zoom meeting was held instead where the annual intercomparison study was discussed.

#### **List planned activities in 2022 for this Term of Reference**

The CDT network of reference laboratories organises an intercomparison study annually. Expansion of the network by recruitment of new reference laboratories was also discussed. Focus of the WG continues to be on global implementation of standardised results and promotion of the CDT test.

#### **C-Reference Intervals and Decision Limits (C-RIDL)**

Chair: Yesim Ozarda (TR), finished -2021; Thomas Streichert (DE) 2022-

#### **Term of Reference 1. To review current concepts of establishing reference intervals and decision limits and to prepare state-of-the-art position statements regarding new avenues**

##### **List 2021 accomplishments for this Term of Reference**

The study to compare direct and indirect approaches for the determination of reference intervals has been finished. Indirect reference intervals were calculated with the most used and popular methods (i.e. Bhattacharya, Hoffman, Arzideh methods) in the literature. The results of indirect reference intervals were compared with the direct reference intervals that are originated from Bursa, Turkey. The C-RIDL has worked on the writing of the study. The study has been published in CCA in 2021.

##### **List planned activities in 2022 for this Term of Reference**

As Thomas Streichert is now the Chair of CRIDL, I and he did a zoom a meeting to discuss about the planned activities: according to our discussion the indirect studies will continue as planned activities as following 1) data cleaning procedures before the indirect calculation 2) continues reference intervals 2) comparison of different direct and indirect methodologies.

#### **Term of Reference 2. To make available reference intervals and decision limits that respect the requirements of international directives such as the European IVD Directive 98/79, and relevant ISO standards**

##### **List 2021 accomplishments for this Term of Reference**

In 2021, the indirect reference interval study of the same biochemical parameters with the Global study has been initiated for the comparison and to make available reference intervals that respect the requirements of international directives such as the European IVD Directive 98/79.

##### **List planned activities in 2022 for this Term of Reference**

None planned.

#### **Term of Reference 3. To determine priority list of measurands (analytes) for which reference intervals and/or decision limits have to be developed, considering various factors, such as age, gender, ethnicity, and for which the greatest improvements in medical decision-making are anticipated**

##### **List 2021 accomplishments for this Term of Reference**

In the indirect reference intervals study to compare with the direct data obtained conducted in Turkey, the gender and age-related changes in the reference values were evaluated that is included in the comparison paper (direct vs indirect method comparison).

##### **List planned activities in 2022 for this Term of Reference**





None planned.

**Term of Reference 4. To monitor and evaluate currently proposed reference intervals for selected measurands (analytes) in the light of the concept of traceability and of the identification of the uncertainty**

**List 2021 accomplishments for this Term of Reference**

No action was taken on this Term of Reference.

**List planned activities in 2022 for this Term of Reference**

None planned.

**Term of Reference 5. To establish transferability protocols of reference intervals and decision limits, which take into consideration inter-routine laboratory method variations and achieve better applicability in clinical practice**

**List 2021 accomplishments for this Term of Reference**

No action was taken on this Term of Reference.

**List planned activities in 2022 for this Term of Reference**

None planned.

**Term of Reference 6. To collaborate with other organizations and/or to undertake the establishment of reference intervals or decision limits for measurands (analytes) identified as a priority**

**List 2021 accomplishments for this Term of Reference**

No action was taken on this Term of Reference.

**List planned activities in 2022 for this Term of Reference**

None planned.

**Term of Reference 7. To work in close collaboration with other Cs and WGs of SD and other IFCC Divisions for the development and appropriate clinical utilization of reference intervals and decision limits**

**List 2021 accomplishments for this Term of Reference**

As CRIDL works as the liaison with the Task Force on Global Reference Interval Database (TF-GRID), as the Chair of CRIDL in 2022, Yesim Ozarda attended two meetings of TF-GRIDL.

**List planned activities in 2022 for this Term of Reference**

The work with TF-GRIDL will continue in 2022.

### **C-Standardisation of Thyroid Function Tests (C-STFT)**

Chair: Hubert Vesper (US)

**Term of Reference 1.**

- A. **Establish a system to maintain traceability of free thyroid hormone and TSH measurements.**
- B. **Coordinate programs to evaluate free thyroid and TSH assays with regards to their analytical performance.**
- C. **Develop reference intervals for free thyroid hormones and TSH.**
- D. **Liaise with key stakeholders to promote the use of the standardized assays in routine clinical practice and public health, to ensure analytical performance requirements meet clinical needs, and to help with developing and establishing reference intervals.**

## List 2021 accomplishments for this Term of Reference

### **A1:** Maintaining the reference system for fT4:

A network of reference laboratories was established and an interlaboratory comparison study among network laboratories was successfully conducted. Laboratories meet requirements for reference measurement procedures and are traceable according to ISO 17511:2020.

Most of these laboratories are now active providing reference measurements to national standardization efforts, EQA providers and manufacturers. The reference laboratories are located at: Ref4U (Belgium), CDC Clinical Reference Laboratories (USA), Radboud University Medical Center of Nijmegen (The Netherlands), and Reference Material Institute for Clinical Chemistry Standards (Japan).

The Network collaborated with the NIST (USA) to characterize serum-based materials.

### **A2:** Maintaining the reference system for TSH:

The study design to create and characterize the next TSH harmonization panel according to ISO 21151 was completed, Ethics approval at UGhent was obtained, and Material Transfer Agreements for collecting and processing sera are in place. Specimen collection is initiated in Belgium, Croatia, Japan, Norway and Belgium.

TSH harmonization based on the IFCC C-STFT reference system is, as of this year, officially implemented in Japan and assay manufacturers are now using the harmonization panel to adjust assay calibration, as stated in a publication by one manufacturer.

Established collaboration with NIBSC to characterize new TSH reference material to maintain the IU system. Characterization will be conducted together with the characterization of the new TSH harmonization panel.

**A3:** Successfully completed a 36 months stability study for serum-based reference materials for fT4 and TSH that is based on single-donor patient samples. CDC (USA) collaborated on the statistical analysis. No analyte degradation was identified. Data suggest that slight sample concentration may occurred and alternate storage containers are now being explored.

**B1:** CDC Clinical Standardization Programs launched in 2021 a new program to standardize fT4 measurements. CDC ensures that the program is linked to the IFCC C-STFT by being a successful member of the reference laboratory network.

The TSH harmonization in Japan is linked to the IFCC C-STFT harmonization panel.

**B2:** Reference material providers such as NIBSC (UK) and NIST (USA) collaborate with the IFCC C-STFT reference system for reference material characterization.

**B3:** Accuracy-based EQA providers in the Netherlands and the U.S. use the IFCC C-STFT reference laboratory network for fT4 for target value assignments.

**C1:** The reference intervals established in Japan as part of TSH harmonization are as of 2021 officially been used.

While C-STFT successfully reached out to EUThyroid, CDC (USA) and to groups in Croatia and France, little progress was achieved in 2021 due to the lack of available standardized fT4 assays and harmonized TSH routine assays in these countries or regions.

Furthermore, new studies and data collections are hampered by the COVID-19 pandemic, which prevents collection of specimens from volunteers.

**D1:** The website C-STFT is currently under revision, it is the intention to revise and make it more accessible for a broader type of readers. Progress was delayed due to COVID-19 changes in priorities. Revisions is planned to be finalized in 2022.

**D2:** Paper about the work of the committee was published for publication.

**D3:** We conducted a workshop at the annual AACC meeting, September 19-23 2022.

**D4:** Katleen Van Uytfanghe represents the C-STFT in a ATA working group that prepares a manuscript that will give an update of current practices on thyroid hormone measurements

**D6:** Using the information available from C-STFT, committee members promote standardization to the C-STFT reference system with the local/regional stakeholders.

## List planned activities in 2022 for this Term of Reference







**A:** Formalize the operational rules for the fT4 network of reference laboratories. This includes network protocols and ISO compliant SOPs . The individual laboratories will publish their candidate reference measurement procedures, and the network will publish the method comparison study.

Complete specimen collection and characterization of the harmonization panel for the new TSH harmonization panel, with a link to the IU units established with the NIBSC reference materials. Continue sample collection of TSH specimens.

**B:** Ensure, national/regional standardization efforts are linked to the IFCC C-STFT reference system through participation in the fT4 reference laboratory network, calibration of TSH assays using the C-STFT harmonization panel.

**C:** Coordinate with principal investigators to ensure reference interval studies and epidemiological studies are conducted with standardized and harmonized assays where available.

Develop statistical and operational approaches/protocols to align ongoing reference interval activities to the IFCC reference system as interim until assays are standardized/harmonized.

Provide technical assistance to national efforts developing reference intervals or conducting studies that may be used for developing reference intervals.

**D1:** Publish C-STFT work:

Reference laboratory network study

Reference measurement procedures conducted by network members

Preamalytical considerations for fT4 measurements

TSH harmonization panel

NIBSC reference material characterization

**D2:** Share C-STFT work and findings through presentations at scientific meetings such as the World Lab conference in Seoul and the AACC meeting in Chicago. Give one educational IFCC webinar on work and progress achieved by C-STFT in second part of 2022

**D3:** Conduct 2 C-STFT meetings for members and stakeholders.

**D4:** Update website to better communicate changes associated with fT4 standardizing and TSH harmonization.

**D5:** Represent C-STFT work through participation with stakeholders such as the ATA working group.

### **C-Harmonization of Autoantibody Test (C-HAT)**

Chair: Joanna Sheldon (UK)

**Term of Reference 1. To evaluate what are the main causes of variability for a number of diagnostically critical autoantibodies.**

**List 2021 accomplishments for this Term of Reference**

No further progress

**Term of Reference 2. To identify autoantibodies where a common calibrator could reduce the inter-assay variability**

**List 2021 accomplishments for this Term of Reference**

The first commutability study for IgG anti glomerular basement membrane has been completed and a candidate material identified. Prof Pusey from Imperial School of Medicine has provided the materials for a second commutability study. The reagent kits and the patient samples are already in the JRC. The antibodies for value assignment have been purified. There will be an e-meeting with Prof. Pusey in January 2022.

EURM-487/IFCC material for antibodies in coeliac disease has been put into vials and the homogeneity and short-term stability studies are planned for January 2022. There is just over 1600 vials of this material.

There has been little change in the use of the reference materials for IgG anti myeloperoxidase (ERM DA476: 2489 vials remain) and IgG anti proteinase 3 (ERM DA483: 3165 vials remain). The report for the proposal for the WHO 1st International Standard for anti- $\beta$ 2 glycoprotein 1 is being submitted to the WHO imminently.

**Term of Reference 3. To identify or produce commutable materials that could be used as calibration material for autoantibody assays.**

**List 2021 accomplishments for this Term of Reference**

Progress on the IgG and IgA anti TTG materials is slow due to the pandemic but once normal working resumes, we will explore other antigens on this material e.g., antibodies to deamidated gliadin.

**List planned activities in 2022 for this Term of Reference**

**FDA and CE.** There remains significant reluctance by companies in adopting the reference materials for IgG anti MPO and IgG anti PR3 and the pandemic has given companies another reason not to change anything. However, personal communication with some companies suggests that they may look to the CRMs when developing new versions of the IgG anti MPO and IgG anti PR3 methods.

**EQA**

No further progress

**Communication**

The interaction with the FDA is central to being able to promote the use of the new CRMs and this must be the focus of our activities. Until we have the use of ERM-DA476/IFCC and ERM DA 483/IFCC embedded into the kit documentation, further communication with other bodies will be difficult.

**Further projects**

Anti GBM antibodies and Anti TTG antibodies are both in progress.

**Term of Reference 4. To produce well-characterised pure antibody preparations with known concentration and identity and use these to transfer values to a matrix preparation.**

**List 2021 accomplishments for this Term of Reference**

The preparation of pure antibody preparations with known concentration is embedded in the value assignment process.

**Term of Reference 5. To evaluate the impact of new reference material on the variability of autoantibody tests and identify areas where further harmonisation would improve diagnostic accuracy.**

**List 2021 accomplishments for this Term of Reference**

EQA providers have been diverted from normal operations towards the EQA schemes for COVID antibodies however, we continue discussion with UKNEQAS and the Royal College of Pathologists of Australasia Quality Assurance Programs but the progress depends on some co-operation from companies to enable us to use values based on ERM DA 476/IFCC and ERM DA 483/IFCC.

**C-Bone Metabolism (C-BM);**

Chair: Etienne Cavalier (BE)

**Term of Reference 1. PTH standardization**

**List 2021 accomplishments for this Term of Reference**

Cathie Sturgeon has sent pools to EC's lab by the end of May for the commutability study. EC's team will perform the study in June 2021.

Samples are currently being run and results will be provided to Vincent Delatour. Results should





be presented during the meeting of the Committee during EuroMedLab in Munich. Samples are currently run and results will be provided to Vincent Delatour. Results should be presented during the meeting of the Committee during EuroMedLab in Munich.

#### **RMP for PTH:**

CS has published with HV and the Mayo clinic a paper in Clinical Chemistry on the identification of circulating PTH fragments by HR/MSMS. This work was not in the frame of the Committee, but shows that things are moving in the right direction. Other teams are probably working on a LCMS/MS determination of PTH worldwide.

An abstract on a LCMS/MS method for 1-84 PTH quantification has been submitted by E. Cavalier's team to EuroMedLab. The method will be used to assign the value of the pools of the commutability study.

#### **Liaison with other societies:**

Contacts have been made with the Protein Analysis Working group (PAWG) from the International Committee for Weights and Measures (CIPM). This Group is interested in PTH. Collaboration **between C-BM and them would definitely be an added value.**

#### **List planned activities in 2022 for this Term of Reference**

Achieve and finalize the commutability study

Go on working on PTH RMP

Contacts with CIPM.

#### **Term of Reference 2. Bone markers assays**

##### **- PINP**

#### **List 2021 accomplishments for this Term of Reference**

EC and VD have designed a commutability study by enriching various matrices with PINP provided by IDS. Methodology is the same as the one used for PTH (see above). The Roche Universal Diluent has been found to be commutable for IDS, Roche and Orion PINP assays. Results will be presented to the Committee by VD during the virtual meeting of June 29th.

Results of the commutability study have been presented and a new set of samples have been prepared. The good commutability level of materials prepared by diluting IDS-Orion top dose with Roche Universal diluents were not confirmed when Roche top dose was diluted with Roche universal diluents.

The CVs obtained in EC's team hands with Orion RIA were far too elevated, which does not allow formal statistical analysis and leads to too high rate of inconclusive levels

**Conclusions of the PINP commutability study: IDS–Orion top dose diluted in Roche sample diluents is commutable with all the 3 assays. This should be used by manufacturers to harmonize the kits.**

#### **List accomplishments for PINP**

A manuscript has been accepted in CCLM

An equation allowing harmonization has been proposed

A commutability study is ongoing

A study on biological variation of PINP and other markers on remaining samples from EuBIVAS has been performed, and a paper has been published.

An Editorial on PINP has been written.

A commutable calibrator has been defined.

#### **List planned activities in 2022-2023 for PINP**

Evaluate the opportunity to develop a RMP for PINP

Prepare commutable standard to calibrate the assays (with the help of the LNE)

##### **- CTX**

### List 2021 accomplishments for this Term of Reference

A manuscript on the multicentre study has been published in *Calcified Tissue International* 2021 Jun;108(6):825-826. doi: 10.1007/s00223-021-00839-y. Epub 2021 Apr 17

### List accomplishments for CTX

Exchange samples between 2 centres: data presented in Paris

A study on biological variation of CTX on remaining samples from EuBIVAS has been performed and the paper has been published in *Osteoporosis International*.

Multicentre study results are completed

### List planned activities in 2022-23 for CTX

Manufacturers should work to improve the issues we observed on the multicentre study. This is mandatory for the future of the marker

#### - Other bone biomarkers

Total alkaline phosphatase: a study aiming at establishing the correct standardization of the assays should be undertaken

#### Vitamin K?

#### TRAP-5b?

#### - Nomenclature standardization:

An update on the nomenclature of BTM (Delmas, 2001) will be proposed by NRJ, GL and RP in December 2021.

### Term of Reference 3. Vitamin D metabolites assay standardization

#### List 2021 accomplishments for this Term of Reference

*A manuscript "Analytical Performance specifications for 25(OH)D examinations" has been accepted in Nutrients 2021 Jan 28;13(2);431*

*EC is working on a paper on the application of MU on NIST samples*

*EC is working on a paper on APS for 24,25(OH)2D*

*Collection of samples from pregnant women is ongoing*

*The manuscript "Analytical Performance specifications for 25(OH)D examinations" has received the EFLM Award for Excellence in Performance Specifications Research"*

*EC is working on a paper on the application of MU on NIST samples*

*EC is working on a paper on APS for 24,25(OH)2D*

*Collection of samples from pregnant women is ongoing*

#### List 2022 planned activities for vitamin D

*Complete the study on VTD in pregnant women.*

*Propose a study on Covid 19 patients to see the impact on the assays?*

### Working Group

#### WG-Standardization of Hemoglobin A<sub>2</sub> (WG-SHbA<sub>2</sub>)

Chair: Andrea Mosca (IT)

**Term of Reference. To promote the standardisation of hemoglobin A2 measurement through the definition of an international reference system, including a reference measurement procedure and primary and secondary reference materials.**

#### List 2021 accomplishments for this Term of Reference

1. A lyophilized with normal level of HbA<sub>2</sub> and another one with elevated level of HbA<sub>2</sub> have been



prepared by the EU-JRC on separate times to prevent mix-up, just before the end of July 2021. The raw materials came from 5-6 units of whole blood provided from Milano. Approximately 3000 vials per level have been produced (photos available on request).

2. A few vials have been shipped to Milano for a preliminary evaluation. The lyophilized material was dissolved in 300 ml distilled water and measured on the HPLC (BioRad and Tosoh). Total Hb concentration and MetHb concentration were measured as well, and found to be within the physiological range. Moreover, the HPLC patterns obtained were from the BioRad Variant II Dual kit. The chromatograms before lyophilization and after look identical, thus indicating that after lyophilization no degradation has occurred. The percentages HbA2 were the same, both for the normal level (2.5%) as for the elevated level of HbA2 (5.4%).

3. A set of 5 vials for each level have been shipped (October 2021) to the participating manufacturers (Arkray, BioRad, Helena, Menarini, Sebia, Tosoh, Trinity), as proposed at the JCTLM meeting in Paris (December 2019) and discussed in the Roadmap paper.

4. The stock solutions of the recombinant hemoglobins to be used for calibration have been shipped to JRC for distribution to the four reference laboratories (2 in China and 2 in Germany). The JRC has endorsed a third party for the preparation of the documentation to be shipped to the Chinese customs.

5. A short term stability study is under way (JRC and Milano), to test the stability of the CRMs at +18, +4 and -20 °C, by an isochronous study, keeping -70 °C as reference temperature.

#### **List planned activities in 2022 for this Term of Reference**

1. The reference measurement procedure for HbA2 will be finalized in order to complete some technical points (as suggested by the IFCC SD back in 2018, 62nd meeting, Budapest), in order to propose it for a ballot and publication as an official IFCC RMP on Clin Chim Acta.

2. A commutability study on the CRMs will be performed, as previously described (Paleari R, Ceriotti F, Harteveld CL, Stollo M, Bakker-Verweij G, ter Huurne J, Bisoen S, Mosca A. Calibration by commutable control materials is able to reduce inter-method differences of current high-performance methods for HbA2. Clin Chim Acta 2018;477:60-5). This will be an inter-laboratory exercise by using splitted aliquots of the same whole blood specimens.

3. Value assignment by the reference laboratories using the LC-MS/MS method. This is planned in the first months of 2022, or as soon as the stability studies will be finished (point 6, as above).

#### **WG-Standardization of Carbohydrate-Deficient Transferrin (WG-CDT)**

Chair: Jean Deenmamode (UK)

#### **Term of Reference 1. Promoting the use of the HPLC reference measurement procedure (RMP) as the accuracy base for CDT test standardisation**

##### **List 2021 accomplishments for this Term of Reference**

Ongoing situation with the pandemic has limited the execution of plans during this year also. Candidate Italian laboratory successfully passed the first round of the 2021 CDT study cycle and working towards full approval as network laboratory.

##### **List planned activities in 2022 for this Term of Reference**

All active members of the CDT WG will contact local QA organisers, as well as distributors and HPLC manufacturers operating in the diagnostics environment to seek potential interested laboratories from different countries.

The WG members intend to meet with such interested parties via Zoom or, if permitted, face to face.

## **Term of Reference 2. Maintaining sustainability of an international network of laboratories**

### **List 2021 accomplishments for this Term of Reference**

Sustainability and performance of network laboratories and participating commercial manufacturers are assessed by the yearly distribution of IFCC calibrators, controls and blind samples from the MCA Winterswijk NL laboratory overseen by the IFCC network coordinator, Carla Siebelder.

Laboratory performance is assessed on a pass/fail criterion and HPLC RMP performance is also further assessed by Drs Wiolders and Schellenberg.

The 2021 Cycle took place during the first quarter of this year with participants' results submitted by end May. Performance and participation were presented and discussed during the WG's annual meeting via Zoom on 28Nov21.

JW and FS reviewed chromatographic patterns submitted.

There were five successful IFCC networked laboratories this year, with one candidate improving in performance and one manufacturer who has yet to pass the blind study.

Manufacturers' contribution towards this study do not form part of the CDT WG's funds.

### **List planned activities in 2022 for this Term of Reference**

Cycle of blind IFCC samples will take place during late spring / early summer 2022, following prior requests which will be sent to all prospective participants (network labs and manufacturers). Results will be presented and discussed during the WG CDT meeting anticipated in early September 2022.

## **Term of Reference 3. Supporting the worldwide standardisation of commercial methods against the RMP**

### **List 2021 accomplishments for this Term of Reference**

Most participating commercial CDT manufacturers have achieved positive results towards CDTIFCC and have launched respective assays.

A further CDT manufacturer participated in the standardisation process and passed this year's blind study.

While WG members have been in discussion with another manufacturer towards reviewing their approach to improve alignment closer to CDTIFCC.

### **List planned activities in 2022 for this Term of Reference**

Continue to assist the remaining commercial participants in successfully achieving the CDTIFCC goal. Monitor performance and adherence.

The WG will endeavour to support the definitive transition from classical CDT to CDTIFCC.

## **Term of Reference 4. Offering consultation concerning use of biomarkers of alcoholism towards national and international agencies.**

### **List 2021 accomplishments for this Term of Reference**

Generally, a local or extended activity initiated primarily by a member of the WG. The process has been in place with better success in Sweden and the Netherlands. Similar efforts are progress in the UK with certain agencies, aviation Medicine and government advisors abroad.

### **List planned activities in 2022 for this Term of Reference**

To maintain the above activities ongoing in other countries

## **WG-Standardization of Pregnancy-associated Plasma Protein A (WG-PAPP A)**

Chair: Saara Wittfooth (FI) (Lennart Friis-Hansen new Chair 2022-)

## **Term of Reference 1. To develop a reference system for standardisation of PAPP-A measurement employed as marker for prenatal screening**





### **List 2021 accomplishments for this Term of Reference**

The COVID-19 situations has slowed down the activities in 2021. The protocol for testing of NIST SRM 1949 with the company assays and assignment of PAPP-A value for this material was finalized with the members. The practical arrangements were started.

### **List planned activities in 2022 for this Term of Reference**

Testing of NIST SRM 1949 with the company assays and assignment of PAPP-A value for this material.

Reporting of the results.

## **WG – Standardization of Albumin Assay in Urine (WG-SAU)**

Chair: Jesse Seegmiller (US)

### **Terms of Reference 1.**

**The project objectives are to:**

- 1.) Develop a candidate reference measurement procedure suitable to analyze native patient urine specimens.**
- 2.) Use and apply Standard Reference Material in the candidate reference measurement procedure to value assign the calibration of the candidate reference measurement procedure.**

### **List 2021 accomplishments for this Term of Reference**

Reference Materials for urine albumin.

Standard Reference Material SRM 2925 Pure Albumin became available for purchase from the National Institute of Standards and Technology (NIST) in 2020. SRM 3666 in Frozen Human Urine is in preparation.

Value assignment of the candidate reference measurement procedure calibrators was accomplished at the University of Minnesota Advanced Research and Diagnostics Laboratory.

### **List planned activities in 2022 for this Term of Reference**

None noted.

**Terms of Reference 2. Perform comparison studies on 40 urine specimens for urine albumin using the reference measurement procedures from Mayo Clinic (LC-MS/MS), NIST (LC-MS/MS), Singapore (LC-MS/MS) and the University of Minnesota Advanced Research and Diagnostic Laboratory (LC-MS/MS).**

### **List 2021 accomplishments for this Term of Reference**

The comparison study plan was agreed upon by the LWG. This consisted of disseminating 40 urine specimens amongst the different laboratories to analyse and compare results.

### **List planned activities in 2022 for this Term of Reference**

Comparison studies continue to be halted due to the SARS-CoV-2 pandemic

**Term of Reference 3. Validation metrics needed for a liquid chromatography tandem mass spectrometry (LC-MS/MS) candidate reference measurement procedure.**

### **List 2021 accomplishments for this Term of Reference**

Validation of the University of Minnesota's LC-MS/MS candidate reference measurement procedure was performed. This measurement procedure examines 6 human serum albumin peptides and evaluates two MS/MS MRM transitions per peptide after proteolysis treatment with trypsin. In addition, the corresponding 15N internal standard peptides were monitored using MRM. The validation encompassed the following experiments: Intra-assay imprecision, inter-

assay imprecision (N=21 days), recovery, carryover, stability (Day 0-28 at room temperature, 4-80C, 200C and -800C), sample comparison, interference and specificity studies.

Each peptide was validated independently over a period of 21 separate days, where the imprecision was determined to be between 4-8 %CV throughout the calibration range of 3-200 mg/L. Three quality control urine specimens were also examined.

Given the findings from this validation study it was agreed upon through consensus by the NIDDK-LWG it would be necessary to perform replication to improve imprecision < 5 %CV. This was an empirical determination and the group decided the RMP final validation would require N=4 replicates to meet the imprecision requirements for a JCTLM certified measurement procedure.

Moving forward with this particular candidate reference measurement procedure will involve 4 replicates of all calibrators, quality controls and specimens.

Validation studies surrounding 4 replicate analyses for the reference measurement procedure have been completed at the University of Minnesota Advanced Research and Diagnostics Laboratory and other laboratories are currently working through final validations.

#### **List planned activities in 2022 for this Term of Reference**

Once all laboratories have their validated methods online the comparison studies will take place.

### **WG-Growth Hormone (WG-hGH)**

Chair: Michel Vos (NL)

#### **Terms of Reference 1. Defining the accuracy base for hGH standardization in order to establish a complete and sustainable Reference Measurement System.**

##### **List 2021 accomplishments for this Term of Reference**

1. Mass spec application (ID-LC-MS/MS) for hGH published in 2014 will be used as basis for reference measurement procedure.
2. As 3-4 calibration laboratories are required running the RMP, CCQM members part of the hGH working group are asked to participate.
3. Focus on GH 22kDa isoform.

##### **List planned activities in 2022 for this Term of Reference**

Meeting with CCQM representatives to discuss possibilities regarding RMP sites.

#### **Terms of Reference 2. Developing an MS-based Reference Measurement Procedure for the measurement of hGH which allows an operational definition of the relevant measurand.**

##### **List 2021 accomplishments for this Term of Reference**

ID-LC-MS/MS based application for GH is available which could be implemented as RMP. However, not suitable for high throughput analysis.

##### **List planned activities in 2022 for this Term of Reference**

Key comparison of GH measurement (one pool and 22 kDa-GH reference material (WHO IS 98/574, NIBSC, UK)) between CCQM laboratories all running ID-LC-MS/MS GH application. In addition, samples will be analysed with immunoassays and an high throughput immunocapture-LC-MS/MS application for comparison (also part of TOR 4).

#### **Term of reference 3. Establish the suitability of recombinant human growth hormone preparations as primary reference material with appropriate properties.**

##### **List 2021 accomplishments for this Term of Reference**

No actions undertaken in 2021.

##### **List planned activities in 2022 for this Term of Reference**





None stated.

**Terms of Reference 4. Establish the performance of commercially available hGH assays compared to the MS-based RMP.**

**List 2021 accomplishments for this Term of Reference**

1. Meeting with Katleen Van Uytffanghe (FT4 standardization) for advice regarding trimmed mean method in case of problems with standardization of commercially available immunoassays due to differences in recognition of GH isoforms and post-translational modifications.
2. Preliminary comparison with immuno-assays showed ~10% difference between results.
3. Start with collection of GH patient samples for new comparison of immune-assays with GH LC-MS/MS as reference. Sample collection requires assessment form Medical Research Ethics Committee.

**List planned activities in 2022 for this Term of Reference**

1. Collection and measurement immunoassay / LC-MS/MS. Based on these results options for standardization will be explored.

**WG-Standardization of Insulin Assays (WG-SIA)**

Chair: Jesse Seegmiller (US) and Michael Steffes (US)

**Term of reference 1. Establish an MS method for insulin at the University of Minnesota**

**List 2021 accomplishments for this Term of Reference**

Completed with a manuscript in process.

**List planned activities in 2022 for this Term of Reference**

Manuscript in process leading to publication

**Term of reference 2. Review accomplishments of other investigators in the Working Group**

**List 2021 accomplishments for this Term of Reference**

Anecdotal interactions

March, 2021 Interaction among all groups by a virtual meeting, reviewing accomplishments in each laboratory establishing an MS method.

**List planned activities in 2022 for this Term of Reference**

Another virtual meeting and possibly an in-person meeting at AACC.

**Term of reference 3. WHO Reference Material for Insulin**

**List 2021 accomplishments for this Term of Reference**

During virtual meeting status of latest/current Reference Material: Provided by Gwen Wark

**WG-Standardization of Troponin I (WG-TNI)**

Chair: Robert H. Christenson (US)

**Terms of reference 1. Design RM 8122, which will be a set of four (4) commutable cTnI-containing samples with concentrations: (i) between the Limit of Detection and Female 99th percentile upper reference limit (URL); (ii) +20% above the male cTnI 99th percentile URL; (iii) 5-fold higher than the male 99th percentile URL; and (iv) 100-fold higher cTnI concentration of the male 99th percentile URL. This design was a collaborative design between NIST, the International Federation for Clinical Chemistry and Laboratory Medicine.**



**List 2021 accomplishments for this Term of Reference**

Accomplished

**List planned activities in 2022 for this Term of Reference**

Utilize this design to produce NIST RM 8122.

**Terms of reference 2. Applied for a NIST-Funded Grant for pay for formulating a commutable cTnI RM. This request was approved by NIST and the funds granted.**

**List 2021 accomplishments for this Term of Reference**

Accomplished

**List planned activities in 2022 for this Term of Reference**

Utilize these grant funds to produce materials for and creation of RM 8122.

**Terms of reference 3. Collect blood from MI patients containing high concentrations of cTnI under an Institutional Review Board (IRB) protocol approved by both the University of Maryland Baltimore IRB and the NIST Ethics committee. All samples tested for Hepatitis A, B, C and HIV. No infectious samples will be included in RM 8122.**

**List 2021 accomplishments for this Term of Reference**

Accomplished

**List planned activities in 2022 for this Term of Reference**

Use these samples for creating NIST RM 8122

**Terms of reference 4. Collect blood from normal healthy individuals sufficient for blending with the elevated MI patient samples to produce RM 8122, under a protocol approved by both the University of Maryland Baltimore IRB and the NIST Ethics committee. All samples tested for Hepatitis A, B, C and HIV. No infectious samples included in NIST RM 8122.**

**List 2021 accomplishments for this Term of Reference**

Accomplished

**List planned activities in 2022 for this Term of Reference**

Use these samples for creating NIST RM 8122.

**Terms of reference 5. Collect sufficient amounts of samples listed in Terms of Reference #3 and #4 above to produce between 2500 to 3500 four-vial sets, each vial having 0.7 mL a level of RM 8122 as noted in Terms of reference 1.**

**List 2021 accomplishments for this Term of Reference**

Accomplished

**List planned activities in 2022 for this Term of Reference**

Use these materials to produce RM 8122.

**Terms of reference 6. Work with NIST leader Dr. Mark Lowenthal to develop a Request for Proposal (RFP) for blending, aliquoting and labeling 2500 to 3500 four-vial sets that will be NIST 8122. Work with NIST to evaluate responses to RFP. Assist in contract with the most appropriate vendor for logistics of producing four-vial sets of RM 8122.**

**List 2021 accomplishments for this Term of Reference**

Accomplished, i.e. An Appropriate vendor has been contracted by NIST.

**List planned activities in 2022 for this Term of Reference**

Work with the commercial vendor to properly produce RM 8122.

**Terms of reference 7. Develop a protocol for assessing recovery of cTnI from each of the**





**normal collections to be used in blending RM 8122. (See attached protocol).**

**List 2021 accomplishments for this Term of Reference**

Accomplished

**List planned activities in 2022 for this Term of Reference**

The recovery experiment outlined in the protocol for Terms of reference 7 will be conducted at University of Maryland School of Medicine in collaboration with NIST and consultant Dr. Robert Payne.

**Terms of reference 8. After assessing recovery of normal donations to be used for blending, work with NIST and Vendor that will blend samples to produce 4-vial sets of RM 8122**

**List 2021 accomplishments for this Term of Reference-**

Protocol written; the next step is to conduct the recovery experiments.

**List planned activities in 2022 for this Term of Reference**

Conduct the recovery experiments.

**Term of reference 9. Work with NIST personnel and stakeholders to design the process for assignment of high sensitivity (hs) cTnI values to each of the four vials comprising RM 8122. Disseminate message about availability of the RM 8122 material and values.**

**List 2021 accomplishments for this Term of Reference-** this Term of Reference is under development.

**List planned activities in 2022 for this Term of Reference**

Fully develop this term of reference, contact all relevant stakeholders and supply them with RM 8122 for measurement on their systems.

**Term of reference 10. Through the coordinating efforts of Prof Christa Cobbaert, a meeting was held with Dr Claudia Swart, PTB who leads the German CardioMet program. Drs Christenson invited Dr Swart to join WG-TNI as a member, and the two groups have agreed to work collaboratively with toward cTnI harmonization/standardization. The WG-TNI considers this collaboration to be extremely valuable and look forward to productive interactions. We are grateful to Prof Cobbaert for being the catalyst in initiating this important collaborative relationship.**

**List 2021 accomplishments for this Term of Reference**

- this Term of Reference is developing.

**List planned activities in 2022 for this Term of Reference**

Jesse Seegmiller will send an invitation to Dr. Swart shortly inviting her to be join the WG-TNI as a member and become fully engaged with standardization/harmonization activities.

**Term of reference 11. Work with NIST personnel and stakeholders to implement process for assigning high sensitivity (hs) cTnI values to each of the four vials comprising RM 8122. Disseminate message about the availability of RM 8122 and its values.**

**List 2021 accomplishments for this Term of Reference-** this Term of Reference is under development.

**List planned activities in 2022 for this Term of Reference**

Fully develop this term of reference; work all stakeholders, supply them with RM 8122 for measurement on their systems collate data.

**Term of reference 12. Disseminate findings of RM 8122 formulation and availability worldwide in appropriate media, i.e. peer review publications, magazines, pod casts, meeting presentations, etc.**

**List 2021 accomplishments for this Term of Reference**

This effort is currently under development.

**List planned activities in 2022 for this Term of Reference**

Develop plan for disseminating results.

**Additional Information**

The WG-TNI standardization had hoped to use the HyTest method for assessing recovery of cTnl in the normal human samples collected for blending. The samples were shipped to and received by HyTest in Finland. However, after seven months they have been unable to assess these samples, or be given a date for this assessment. This has caused a delay in our project process. For this reason, it has been necessary for the WG-TNI to implement Terms of Reference 7 and 8. We are implementing this recovery strategy currently. The WG-TNI is grateful to HyTest for kindly agreeing to assist our efforts, and regret that we must go in a different in the interest of timely completion of this important project.

**WG-CSF Proteins (WG-CSF)**

Chair: Johan Gobom (SE)

**Term of reference 1. Development of reference method procedures and reference material for neurofilament light polypeptide in CSF and blood.**

**List 2021 accomplishments for this Term of Reference**

First commutability study for measurement of neurofilament light polypeptide (Nfl) in plasma and serum: Plasma- and serum- Nfl in patient samples were measured on five assay platforms in seven laboratories. All assays showed good correlations. The study pointed to the feasibility to use serum or plasma spiked with CSF as CRM. Currently, a publication of the results is being written up.

**List planned activities in 2022 for this Term of Reference**

A second commutability study of plasma/serum-Nfl is planned. The aim of this study is to verify the ability to use plasma/serum spiked with CSF as CRM, to determine whether to use plasma or serum for the CRM, to test stability of candidate CRM, and to test the performance of pooled samples for a CRM.

**Term of reference 2. Development of reference method procedures and reference material for CSF Tau.**

**List 2021 accomplishments for this Term of Reference**

Completion of a pilot round-robin study to compare three different MS-based methods for measurement of tTau in CSF. The assays showed good correlation, but strongly varying concentrations.

**List planned activities in 2022 for this Term of Reference**

A second round-robin study is being planned, with analysis of individual CSF samples and evaluation of calibrators.

**Term of reference 3. Development of reference method procedures for measurement of amyloid beta 1-40 in CSF.**

**List 2021 accomplishments for this Term of Reference**

An MS-based candidate reference method for measurement of CSF amyloid beta (Pannee et





al. J. Neurochem., 2016) has been submitted to JCTLM. A follow-up study including stability measurements, is being prepared for submission, before final submission to JCTLM.

#### **List planned activities in 2022 for this Term of Reference**

Completion of RMP and characterization of CRM.

#### **WG – Commutability in Metrological Traceability (WG-CMT)**

Chair: Greg Miller (US)

**Term of reference 1. Advise IFCC Committees and Working Groups on how to assess the commutability of materials on which they are working.**

#### **List 2021 accomplishments for this Term of Reference**

No requests for advice were received in 2021.

#### **List planned activities in 2022 for this Term of Reference**

None unless a request is received.

**Term of reference 2. Establish procedures to use commutable reference materials, and to correct for non-commutability bias, in a metrological traceability hierarchy.**

#### **List planned activities in 2022 for this Term of Reference**

None; completed. Please remove this ToR.

**Term of reference 3. Establish how to define the criterion for acceptable commutability that is required for a given reference material, taking into account its intended use in a metrological traceability hierarchy or for surveillance of harmonization/standardization status of results from different measurement procedures.**

#### **List planned activities in 2022 for this Term of Reference.**

Two manuscripts are in later stages of preparation; anticipate submitting for publication in early 2022.

1. Criteria for assessing commutability of Certified Reference Materials
2. Commutability assessment and criteria for EQAM

**Term of reference 4. Provide recommendations on verifying commutability for replacement batches of a reference material.**

#### **List 2021 accomplishments for this Term of Reference**

Not started

#### **List planned activities in 2022 for this Term of Reference**

None planned; will follow completion of ToR 3.

#### **WG - Immunosuppressive Drugs (WG-ID)**

Chair: Christoph Seger (CH)

#### **WP “Establishment of reference methods”**

The method of Taibon et al. (2020) is now JCTLM listed. The WG agrees that this method should be followed for reference measurement service establishment.

#### **WP “Regulatory framework for submission of methods and materials to JCTLM”**

The WP is fulfilled with the publication of the Taibon method.

#### **WP “Measurement comparison initiative”**

To launch this initiative a project group will be established.

#### **WP “Establishment of reference procedures”**

None of the WG member has the financial or operational freedom to establish a reference method without further ado. Fundraising is necessary.

#### **WP” Production of reference materials”**

The production of primary / secondary reference materials is understood as the realm of MNIs. The WGID will not produce such materials. However, the WGID supports the qNMR based approach for primary reference material characterization.

### **WG - Apolipoproteins by Mass Spectrometry (WG-APO MS)**

Chair: Christa Cobbaert (NL)

**Term of reference 1. To achieve standardization of a panel of clinically relevant serum apolipoproteins (apo) A-I, B, C-I, C-II, C-III, E and apo (a) (including qualitative phenotyping where needed). Standardization is done in such a way that measurement results are traceable to SI as outlined in ISO 17511. Other traceability chains will be used in cases where traceability to SI cannot be achieved.**

#### **2021 accomplishments for this Term of Reference**

Reference measurement procedure.

The reference measurement procedure was further evaluated to fulfil assessment of all criteria required for publication of the cRMP. Moreover, now that the peptide LFLEPTQADIALLK was distributed to the LUMC, the equimolarity assessment has been initiated. However, in the first experiments similar behavior of this peptide to peptides in native samples cannot be proven, whereas this is proven for the other four apo(a) peptides. Further work is ongoing to assess which step is causing this variation. Once this is resolved, the equimolarity experiments will be resumed.

The cRMP laboratories were involved in the commutability assessment of the candidate secondary Reference Materials for apo(a). The LUMC measured two parts, while UKL and CDC provided measurements of the first part. Results from the clinical samples of the commutability study can also be used for the assessment of the current level of harmonization of the cRMP labs. The results from all three laboratories have now been reported, and are compared to assess the actual level of harmonization before the end of Nov 2021.

Reference materials.

The first test batch of primary calibrators for apoA-I, B, Cs and E has been prepared and was assessed preliminarily for purity by LNE. All peptides have sufficient purity. Therefore, a larger batch of peptide based primary calibrators for apoA-I, B, Cs and E has been ordered. Of this batch, 28 of 30 peptides have now been delivered at LUMC and of these 12 have been sent to LNE for the preparation of reference materials and assessment of their quantity and purity. The other peptides will be sent once all peptides have been delivered at LUMC. The remaining two peptides contain cysteines and in these samples dimerization is observed in solution. LNE and LUMC are working to assess the suitability of these samples to serve as qualitative reference materials for apoE phenotyping.

Four of the five selected peptides for apo(a) have been prepared and are currently undergoing stability assessment. Importantly. The apo(a) peptide LFLEPTQADIALLK did not dissolve well initially and required additional optimization. This has now been resolved and this peptide now undergoes amino acid analysis to provide a concentration and measurement uncertainty to the material.

A commutability study for apo(a) was performed in two parts to assess the suitability of three types of candidate secondary reference materials. These materials were 1. Transgenic pig purified apo(a), 2. Recombinant apo(a) of various kringle sizes and 3. Native pooled serum samples. In



a second part, the transgenic pig apo(a) was further assessed at higher concentrations. Based on the commutability study data for apo(a), it is now clear that native serum based secondary reference materials are the preferred candidate RMs and have to be produced. JRC is working on the procurement of such materials.

### Planned activities in 2021/2022 for this Term of Reference

The planned activities are summarized in the Table below.

item	topic	activity	who	Deadline
1	Commutability study apo(a)	write manuscript	JRC	01/12/2021
2		submit manuscript	JRC	01/01/2022
3	reference measurement procedure development	write manuscript	LUMC	01/12/2021
4		submit manuscript	LUMC	01/01/2022
5	reference measurement procedure transferability	provide results commutability assessment to LUMC	UKL/CDC	01/11/2021
6		organize 3rd harmonization study	LUMC	01/12/2022
7		measurement of sample and reporting of results	LUMC/UKL/ CDC	01/03/2022
8		write manuscript transferability/level of harmonization	LUMC/UKL/ CDC	01/07/2022
9	Equimolarity assessment	procure primary peptides	LUMC	01/11/2021
10		initial purity assessment and AAA apos A-I and B	LNE	01/06/2022
11		provide peptides A-I, B to labs	LNE	01/02/2022
12		initial purity assessment and AAA apo Cs and E	LNE	01/12/2022
13		provide peptides Cs and E to labs	LNE	01/07/2022
14		Procure protein material A-I, B, Cs and E	LUMC	01/12/2021
15		perform AAA on protein materials	JRC	01/06/2022
16		AAA of rec apo(a) Dr. Angles-Cano	JRC	01/11/2021
17		perform equimolarity assessment apo(a)	LUMC	01/01/2022
18		perform equimolarity assessment apo A1 & B	LUMC, UKL	01/07/2022
19		perform equimolarity assessment apo Cs and E	LUMC, CDC	31/12/2022
20	Effect analysis peptide based calibration	effects of peptide-based calibration apo(a)	LUMC, UKL, CDC	01/04/2022
21		effects of peptide-based calibration apos A-I and B	LUMC, UKL, CDC	01/10/2022
22		effects of peptide-based calibration apos C and E	LUMC, UKL, CDC	30/04/2022
23	primary reference materials	apo(a) peptides	JRC	30/06/2022
		Apo A-I and B peptides	LNE	31/12/2022
24		Apo Cs and E peptides	LNE	30/06/2023
25	secondary reference materials apo(a)	selection and procurement of materials	JRC	31/01/2022
26		stability assessment	JRC	30/06/2022
27		value assignment	LUMC, UKL, CDC	30/06/2022
28	secondary reference materials apos A-I and B	selection and procurement of materials	JRC	31/03/2022
29		commutability assessment	JRC	30/06/2022
30		stability assessment	JRC	31/12/2022
31		value assignment	LUMC, UKL, CDC	31/12/2022



item	topic	activity	who	Deadline
32	secondary reference materials apos C and E	selection and procurement of materials	JRC	31/12/2022
33		stability assessment	JRC	30/06/2022
34		value assignment	LUMC, UKL, CDC	30/06/2023
35	standard taking	evaluation of recalibration on the results of IA's	TBD	

**Term of reference 2. To evaluate clinical performance and clinical utility of serum apolipoprotein panel(s) for CVD risk stratification and treatment, in comparison to or together with contemporary blood lipids.**

#### **List 2021 accomplishments for this Term of Reference**

The chair has set up a research collaboration for biomarker analyses with the investigators of a large RCT with documented cardiovascular outcomes. Biomarker projects have been written and subsidies have been generated to profile apolipoproteins in about 23.500 samples of individuals at risk for CVD. Follow-up of the individuals with respect to cardiovascular outcome is available. Apolipoprotein profiling is currently ongoing at the LUMC. Thus far, the infrastructure to perform such a large study with bottom-up proteomics for apo profiling is now mostly in place, including sufficient liquid handlers and LC-MS analysers, as well as a data structure based on the FAIR principles and semi-automated generation of data reports. The first 1000 samples have been measured and reported to the LIMS so that alle apo data and IQC data are traceable and generated under the KCL/LUMC ISO 15189 accreditation.

#### **List planned activities in 2021 for this Term of Reference**

Measurement of the samples is planned to take 1 year and was started with a stepwise approach in Q3 2021 at the LUMC. With a throughput capacity of ~500 samples/week, the apo profiling will be continued. Once all results are reported, the data will be merged with outcome data to assess the value of apolipoprotein profiling in CVD risk assessment, beyond other conventional and emerging biomarkers

### **WG – Pancreatic Enzymes (WG-PE)**

Chair: Denis Grote-Koska (DE)

**Term of reference 1. Development of a primary reference method for pancreatic amylase in serum**

#### **List 2021 accomplishments for this Term of Reference**

In the end of 2020/2021 an interlaboratory comparison between reference laboratories was performed investigating materials of different origin:

- Two human serum pools prepared/provided by the Calibration laboratory in Hannover (Grote-Koska)
- Two processed materials prepared/provided by MCA Lab (Weykamp)
- Essential reagents were provided by Roche Diagnostics (Weber).
- Materials and reagents were distributed and an Interlaboratory comparison was performed to check for the status quo of the reference system.
- Four reference laboratories were involved:
  - RfB-Calibration Laboratory 2 (Denis Grote-Koska, Germany),
  - Laboratori de Referència d'Enzimologia Clínica (Francesca Canalias Reverter, Spain),
  - LabWest – HagaZiekenhuis (Marjan Veuger, Netherlands),
  - Roche Diagnostics (Friederike Weber, Germany).
- In 2021 the evaluation of the results was performed. An online meeting was held and the





- results were considered to be convincing.
- Next steps were defined as:
  - finding reference material containing both isoenzymes
  - method comparison with two routine platforms
  - stability investigation of reagent solutions
  - investigation of measurement range
  - estimation of measurement uncertainty

International survey:

Additionally, an international survey was initiated to figure out, what is the focus in pancreatic lab tests concerned to different countries – total amylase, lipase or pancreatic lipase.

The survey is almost finished and will be evaluated in the end of 2021.

#### **List planned activities in 2022 for this Term of Reference**

The WG defined some open tasks, before establishment of the reference procedure for pancreas amylase. Investigations of reagent stabilities, measurement range, and the estimation of uncertainty. Furthermore, method comparisons against two routine platforms shall be performed.

#### **Term of reference 2. Development of a primary reference method for pancreatic Lipase in Serum**

No further activity is planned prior to finalization of Term of Reference 1.

#### **Term of reference 3. Support EC-JRC (Joint Research Centre, Directorate F – Health, Consumers and Reference Materials, formerly IRMM) in studies and certification of reference materials for enzymes**

##### **List 2021 accomplishments for this Term of Reference**

In 2021 stability studies of the new ERM reference material ERM AD456/IFCC of pancreatic amylase were supported in the RfB calibration laboratory in Hannover for EC-JRC (Grote-Koska)

##### **List planned activities in 2022 for this Term of Reference**

Activities are depending on the needs of the JRC. So far no plans were communicated.

#### **WG - Faecal Immunochemical Testing (WG-FIT)**

Chair: Sally Claire Benton (UK)

#### **Term of reference 1. To harmonise and/or standardise analysis of haemoglobin in faecal samples by immunochemistry (FIT)**

##### **List 2021 accomplishments for this Term of Reference**

The analytical work and data analysis has all been completed for the harmonisation/commutability study. The work was carried out by a small sub-group of the IFCC FIT WG. A report has been compiled and was sent to the four manufacturers of the FIT systems included in the study in October 2021. Individual meetings are being held with each company if requested. A summary of the results will be presented to the IFCC FIT-WG members at the next meeting in November 2021 in Munich.

##### **List planned activities in 2021 for this Term of Reference**

The next stages of this study will be discussed at the IFCC FIT WG in November.

#### **Term of reference 2. To establish EQA and 3rd party IQC programmes**

##### **List 2021 accomplishments for this Term of Reference**

No progress made in 2021

## List planned activities in 2021 for this Term of Reference

The FIT-WG will aim to engage with EQA companies to obtain guidance on requirements in terms of EQA to help inform the recommendations formed from the group

### WG - Cell free DNA and related circulating biomarkers (WG-cfDNA)

Chair: Ron HN van Schaik (NL)

**Term of reference 1. To identify and provide guidance on pre-analytical and analytical aspects for obtaining good and reproducible results for cfDNA and related circulating biomarkers for clinical use, and to guide the correct clinical implementation of these biomarkers**

#### List 2021 accomplishments for this Term of Reference

##### Projects:

- a) Defining pre-analytical aspects / drafting guideline → completed
- b) Defining minimal analytical performance
- c) Setting up proficiency testing for cfDNA → others did, not needed anymore
- d) Organizing international workshops → hampered by COVID.
- e) Defining grant proposals addressing points a) and b)

#### List planned activities in 2022 for this Term of Reference

- a) Re-evaluate the terms of reference and projects
- b) Organize 2 cfDNA symposia (One will be June 17, Houten, The Netherlands)
- c) Extend the collaboration with the European Liquid Biopsy Society
- d) Extend the collaboration with EFLM on this topic
- e) Identify and report on the different cfDNA quality programs
- f) Write a paper on minimal analytical performance for cfDNA analysis
- g) Update membership WG-cfDNA group

### WG - Standardization of Procalcitonin assays (WG-PCT)

Chair: Vincent Delatour (FR)

**Term of reference 1. Develop and validate a reference measurement procedure for PCT absolute quantification by Stable Isotope Dilution Mass Spectrometry**

#### List 2021 accomplishments for this Term of Reference

Validation of a candidate reference measurement procedure for PCT absolute quantification by Stable Isotope Dilution Mass Spectrometry is now completed.

Different primary calibrators (peptides and recombinant protein) were produced. Their purity was characterized by High-Resolution Mass Spectrometry, and PCT concentration in calibration solutions was determined by Amino Acid Analysis (AAA).

In order to improve method's sensitivity, sample preparation was thoroughly optimized through development of different separation methods to extract PCT from the other proteins. The limit of quantification is now 0.25 ng/mL. Method validation is now completed and is the subject to 5 scientific publications. The first paper was published in analytical and bioanalytical chemistry in May 2021 (Anal Bioanal Chem. 2021;413(19):4707-4725). All WG members are identified as collaborators. This publication was subject to a letter to the editor by Fresenius University (Prof Schneider, who is a member of IFCC WG-PCT) and a reply from LNE. The letter and the reply were submitted in May 2021. They are now both accepted and published (Anal Bioanal Chem. 2021;413(19):4917-4919 & Anal Bioanal Chem. 2021;413(19):4921-4922). The fifth publication describing the candidate reference method with protein-based calibration was submitted to anal chem in 2021 and is under revision.





### **List planned activities for 2022 for this Term of Reference**

- Finalize publication of the candidate reference method
- Submit the candidate reference method to JCTLM database
- Investigate possible approaches to improve the limit of detection

### **Term of reference 2. Document and understand the variability of results provided by the different commercially available PCT assays**

#### **List 2021 accomplishments for this Term of Reference:**

Ten external quality assessment scheme (EQAS) providers from eight different countries were approached to share results of their PCT EQAS: ANSM in France, CSCQ in Switzerland, Equalis in Sweden, Instand and RfB in Germany, Labquality in Finland, Probioqual in France, RCPA in Australia, SKML in The Netherlands and WEQAS in the UK. Between 2014 to 2020, 2220 routine laboratories conducted 27500 PCT measurements using 137 EQA materials which PCT concentration ranged from 0.05 ng/mL to 43.66 ng/mL (median 3.02 ng/mL). Different types of serum-based EQA materials were used : fresh pools not spiked with exogenous PCT, frozen materials with and without spiking with exogenous PCT, lyophilized materials with and without spiking with exogenous PCT. The need to improve comparability of PCT measurements was evaluated according to between-lab CV%. The mean between lab CV% is 15.6% but greatly varied across EQA Schemes. In the best cases, a between lab CV of 6-8% was observed, suggesting that comparability of PCT results is quite satisfactory but in other surveys, between lab CVs of 20-25% were observed, suggesting that comparability of PCT results is poor and must be improved. As commutability of EQA materials was not evaluated, it can be speculated that differences in estimates of between lab agreement is (at least partially) due to variable commutability levels of the EQA materials. This confirms the need to evaluate commutability of EQA materials before a conclusion can be made regarding the need to improve comparability of PCT assays. A publication was submitted to clinical chemistry but got rejected. It was then resubmitted to CCLM. The publication is now accepted and published (Clin Chem Lab Med. 2021;59(10):1610-1622)

Collection of large single donations needed for the commutability study is progressing slowly in the lab of Prof Tsatsanis. This problem is expected to be solved before / during summer 2021 thanks to partners of EMPIR project SEPTIMET. In parallel, small single donations (leftovers) are collected with the objective to prepare pools that will be used as EQA materials which commutability will be evaluated : samples are still being collected in the lab of Prof Tsatsanis and in the lab of Dr Dupuy.

#### **List planned activities in 2022 for this Term of Reference:**

Agreement and correlation between the different PCT assays will be evaluated through an interlaboratory comparison involving the most popular PCT assays and relying on samples of proven commutability.

- The design of the study will be finalized with a focus on the following points:
- Confirm that frozen samples can be used instead of fresh clinical specimens
- Establish a list of know interfering substances with the objective to exclude clinical specimens with abnormal / elevated concentration of these compounds
- Determination of the volume needed by each routine assay to conduct measurements
- Determination of assays precision to determine the number of replicates needed to minimize uncertainties and the rate of inconclusive results
- Determine in what labs measurements will be conducted
- Invite EQA providers sharing their materials to include these in the study

### **Term of reference 3. Evaluate the need for standardization of PCT assays**

#### **List 2021 accomplishments for this Term of Reference:**

EQA data were gathered (see ToR #2) and a review of all published correlation studies was conducted.

The ICHCLR identified PCT standardization as high priority with high clinical impact Consultation of IVD manufacturers was initiated and reveals that the need and demand for standardization of PCT assays differs in the two following situations:

- BRAHMS licensed assays are all calibrated with the Kryptor method. Assay manufacturers feel that recalibration of BRAHMS PCT assays is not a priority and possibly appears undesirable because introducing a new reference system based on IDMS could potentially result in the need to revise clinical decision limits, which could create confusion in the clinical community. However, using an IDMS RMP as stable anchor reference method would be helpful point would be beneficial to monitor stability of the Kryptor method
- For PCT assays other than BRAHMS PCT assays, there is currently no internationally agreed reference system and there is a need for assay standardization.

All WG members agree that commutable EQA materials are needed to accurately estimate between-method agreement.

**List planned activities in 2022 for this Term of Reference:**

- Organize a commutability study coupled with a correlation study (October 2022?)
- Pursue stakeholder consultation
- Maintain and extend manufacturers' involvement

**Term of reference 4. Evaluate the feasibility for standardization of PCT assays**

**List 2021 accomplishments for this Term of Reference:**

Feasibility for standardization of PCT assays will be evaluated after activities planned within ToR 1 and 2 have been completed

**List planned activities in 2022 for this Term of Reference:**

Evaluate if the candidate reference method by mass spectrometry is sufficiently robust at PCT concentration of interest and enables to properly establish results traceability to the SI Units with sufficiently low measurements uncertainty.

Evaluate the correlation between the different commercially available PCT assays and the candidate reference method by mass spectrometry.

Seek for manufacturers' involvement and willingness to implement a new traceability chain.

**Term of reference 5. Perform standardization of PCT assays, if needed and feasible.**

**List 2021 accomplishments for this Term of Reference:**

The need and feasibility for standardization of PCT assays first need to be evaluated.

**List planned activities in 2022 for this Term of Reference:**

PCT assays will be standardized:

If the IDMS method meets the necessary performance specifications,

If the variability of results provided by the different commercially available PCT assays is considered unacceptable and can be improved through common calibration with commutable secondary calibrators

If correlation between the IDMS method and routine assays is sufficient

If most assay manufacturers agree recalibrating their assays

**WG - Continuous Glucose Monitoring (WG-CGM)**

Chair: Guido Freckmann (DE)

**Term of Reference 1. Work package 1 (WP 1): Establish a Traceability Chain to a Defined Measurand**

**List 2021 accomplishments for this Term of Reference**





Performance of two conference calls and an e-mail conversation with discussions about background information and the methods. Establishment of a final consensus document for WP-1 and finalization of this Term of Reference. Publication of summarized results in Clinica Chimica Acta (doi: 10.1016/j.cca.2020.12.025)

#### **List planned activities in 2022 for this Term of Reference**

None / completed.

#### **Term of Reference 2.**

##### **Work package 2 (WP 2): CGM Analytical Performance: Procedures & Metrics**

- 1. Establish procedures suitable for assessment of analytical performance of CGM systems,**
- 2. Establish metrics and corresponding minimum acceptance criteria for the analytical performance of CGM systems.**

#### **List 2021 accomplishments for this Term of Reference**

Performance of four conference calls and an on-going e-mail conversation with discussions about background information, methods and the next steps. Creation and start of WP-2 supporting projects:

Project 1: Acceptance Criteria and Measurement Procedures for Comparison Measurements

Project 2: Distribution of Glucose Concentration and Glucose Rate of Change (ROC)

Project 3: Graphical Display of Accuracy

The work on WP-2 will be continued and finalized after further feedback has been received and data from WP-2 Supporting Projects are available.

A discussion of the first project results is planned as hybrid meeting during EuroMedLab Congress in Munich.

#### **List planned activities in 2022 for this Term of Reference**

Further discussions and input to this work package via conference calls and via e-mail. Next virtual meeting will take place at the beginning of 2022. A consensus document of WP-2 will be prepared and this Term of Reference will be finalized.

#### **Term of Reference 3. Work package 3 (WP 3): Work with ISO on a New CGM Guideline.**

**Establishment of standardized procedures and acceptance criteria for CGM systems, covering mechanical and electromagnetic safety, analytical performance, and ease of use (analogous to ISO 15197 for blood glucose monitoring systems).**

Cooperation with ISO should be aimed for, if the International Organization for Standardization (ISO) is interested:

The working group is intended to cooperate with ISO to define acceptable procedures and acceptance criteria used to assess analytical performance criteria of CGM systems, with similar scope as that of ISO 15197, which defines procedures and acceptance criteria for systems for self-monitoring of blood glucose. In the future, CGM will also play a role in hospitals. Criteria for the use in in-clinic settings need to be established as well.

#### **List 2021 accomplishments for this Term of Reference**

Not started yet.

#### **List planned activities in 2022 for this Term of Reference**

Planned contact and cooperation with the International Organization for Standardization (ISO).

#### **WG-Development of a Reference Measurement System For Sustainable Pt/Inr Standardization (WG- Pt/Inr)**

Chair: Christa Cobbaert (NL)

#### **Term of reference 1. To develop a harmonized reference measurement procedure based on**

**the WHO Manual Tilt Tube (MTT) technique as well as a complete reference measurement system for global standardization of the PT/INR test. An entire reference measurement system is essential to anchor PT/INR test results to the International Standards for thromboplastin to assure longitudinal accuracy of PT/INR-test results in time and space**

#### **List planned activities in 2021 for this Term of Reference**

Expanding the IFCC WG including ISTH/WHO representatives, calibration labs, clinician and corporate representatives from industry.

The working group on PT/INR RMS development will work in parallel along two lines:

1. Development of a harmonized MTT as a Candidate Measurement Procedure in a network of WHO calibration labs (see Term of reference # 4).
2. Selecting and defining a suitable candidate Reference Material as part of the metrological traceability chain to be set up for the development of a sustainable Reference Measurement System that allows global PT/INR standardization.

**Term of reference 2. To review the agreed WHO procedure for calculating ISI of new international standards as the procedure should not lead to deterioration of the traceability of PT/INR test results with every replacement of international standards.**

#### **List of planned activities in 2021 for this Term of Reference**

Reconsideration of the agreed WHO procedure for ISI assignment to primary thromboplastin reference materials based on averaging, as well as the necessity of the co-existence of two primary reference materials.

The effect is shown and discussed that the ISI for each new international standard for human recombinant thromboplastin obtained with the agreed procedure is higher than the ISI obtained from “like vs. like” calibration. This will be continued this year until mid-2022

**Term of reference 3. To evaluate alternatives for the co-existence of conventional human recombinant and rabbit thromboplastin reference materials and the ISI averaging procedure, leading to metrological discontinuity in PT/INR standardization.**

#### **List of planned activities in 2021 for this Term of Reference**

Requirements of a suitable candidate Reference Material for PT/INR standardization are presented explained by a historical point of view.

A single primary International Standard is required (from metrological point of view) and all secondary standards should be calibrated against the primary standard.

Discussion paper on replacement of International standards for thromboplastins will be a main topic on November 23rd IFCC-ISTH virtual meeting. Input and support from the IVD-industry and all ISTH-stakeholders is essential!

**Term of reference 4. To establish a network of at least three calibration labs running the harmonized MTT method for certifying the calibration of commercial thromboplastins from IVD-manufacturers.**

#### **List planned activities in 2021 for this Term of Reference**

Established a network including four calibration labs

Two step approach: first harmonization of the MTT before standardization the MTT.

Distribution of Ring trial 2021-01 September 1st virtual meeting calibration labs to discuss ring trial 2021 results.

Distribution of a Test Survey September 1st November: Organization of a physical workshop on location Leiden for the members of the four calibration labs, to refine and harmonize all the details of the Manual Tilt Tube technique (MTT).

Criterion: reducing interoperator variability to CVa of ~1.5% or less, so that end-users test





results are fit-for-clinical purpose.

Setting up Analytical Performance Specifications (APS) for the PT/INR Reference Measurement System and for the total traceability chain.

In response to the successful workshop in November 2021 where consensus has been reached on all procedural details of the MTT, more ring trials (or test surveys) will be organized in 2022 for further harmonizing the MTT procedure among the four calibration labs and its operators.

The MTT-procedural refinements and details which were agreed among the participants of the workshop, will be described in the SOP and ideally published as an addendum to the already published MTT procedure.

### ***Publications by Committees and Working Groups:***

#### **C-NPU:**

There has not been a publication in 2021.

- PROPERTIES AND UNITS IN THE CLINICAL LABORATORY SCIENCES PART XXVI Piloting NPU-SNOMED CT Mapping, publishing in IUPAC's Pure and Applied Chemistry (PAC)
- NPU codes for characterizing subpopulations of the hematopoietic lineage, described from their Clusters of Differentiation (CD) markers, publishing in IUPAC's Pure and Applied Chemistry (PAC)
- PROPERTIES AND UNITS IN THE CLINICAL LABORATORY SCIENCES PART XXVII Online Dynamic NPU Manual, publishing in IUPAC's Pure and Applied Chemistry (PAC)
- PROPERTIES AND UNITS IN THE CLINICAL LABORATORY SCIENCES PART XXV Guidelines for the basic vocabulary of the NPU Terminology – the NPU Element Terms

#### **C-MD:**

- Clin Chim Acta. 2021 Aug;519:239-246. doi: 10.1016/j.cca.2021.05.004. Epub 2021 May 8. Current and future challenges in quality assurance in molecular diagnostics. Parviz Ahmad-Nejad, Tester Ashavaid, Aldo Vacaflores Salinas, Jim Huggett, Kathryn Harris, Mark W Linder, Katarina Baluchova, Werner Steimer, Deborah A Payne, IFCC Committee for Molecular Diagnostics (C-MD)

#### **C-TLM**

The results of RELA2021 are published on the website (<http://www.dgkl-rfb.de:81>).

#### **C-STFT**

##### **Accepted**

- Vesper HW, Van Uytvanghe K, Hishinuma A, Raverot V, Patru MM, Danilenko U, van Herwaarden T, Shimizu E Implementing reference systems for thyroid function tests – A collaborative effort. Clin Chim Acta 2021;519:183-186

##### **In preparation**

- Ribera A, Zhang L, Dabbs-Brown A, Sugahara O, Poynter K, Van Uytvanghe K, Shimizu E, van Herwaarden T, Botelho JC, Danilenko U, Vesper HW. Development of equilibrium dialysis ID-UPLC-MS/MS candidate reference measurement procedure for free thyroxine in human serum. (in preparation)
- Standard Operating Procedure “Reference Measurement Procedure for Determination of Free Thyroxine in Human Serum by Equilibrium Dialysis Isotope Dilution-liquid chromatography tandem mass spectrometry (ID LC-MS/MS) “.

- Ribera A, Ribeiro CMB, Poynter K, Botelho JC, Van Uytfanghe K, Danilenko U, Vesper HW. Preanalytical considerations for free thyroxine and triiodothyronine assays. (in preparation)

## C-BM

- [Analytical Performance Specifications for 25-Hydroxyvitamin D Examinations](#)
- Etienne Cavalier, Callum G. Fraser, Harjit P. Bhattoa, Annemieke C. Heijboer, Konstantinos Makris, Candice Z. Ulmer, Hubert W. Vesper, Samuel Vasikaran, Pierre Lukas, Pierre Delanaye, Anna Carobene, on behalf of the IFCC-IOF Committee for Bone Metabolism Nutrients. 2021 Feb; 13(2): 431. Published online 2021 Jan 28. doi: 10.3390/nu1302043
- [Recommendations on the measurement and the clinical use of vitamin D metabolites and vitamin D binding protein - A position paper from the IFCC Committee on bone metabolism.](#) Makris K, Bhattoa HP, Cavalier E, Phinney K, Sempos CT, Ulmer CZ, Vasikaran SD, Vesper H, Heijboer AC. Clin Chim Acta. 2021 Jun;517:171-197. doi: 10.1016/j.cca.2021.03.002. Epub 2021 Mar 10. PMID: 33713690
- [A Multicenter Study to Evaluate Harmonization of Assays for C-Terminal Telopeptides of Type I Collagen \(ss-CTX\): A Report from the IFCC-IOF Committee for Bone Metabolism \(C-BM\).](#) Cavalier E, Eastell R, Jørgensen NR, Makris K, Tournis S, Vasikaran S, Kanis JA, Cooper C, Pottel H, Morris HA; IFCC-IOF Committee for Bone Metabolism (C-BM). Calcif Tissue Int. 2021 Jun;108(6):785-797. doi: 10.1007/s00223-021-00816-5. Epub 2021 Mar 4
- [The path to the standardization of PTH: Is this a realistic possibility? a position paper of the IFCC C-BM.](#) Cavalier E, Vasikaran S, Bhattoa HP, Heijboer AC, Makris K, Ulmer CZ. Clin Chim Acta. 2021 Apr;515:44-51. doi: 10.1016/j.cca.2020.12.022. Epub 2021 Jan 4. PMID: 33412144
- [Analytical considerations and plans to standardize or harmonize assays for the reference bone turnover markers PINP and  \$\beta\$ -CTX in blood.](#) Bhattoa HP, Cavalier E, Eastell R, Heijboer AC, Jørgensen NR, Makris K, Ulmer CZ, Kanis JA, Cooper C, Silverman SL, Vasikaran SD; IFCC-IOF Committee for Bone Metabolism. Clin Chim Acta. 2021 Apr;515:16-20. doi: 10.1016/j.cca.2020.12.023. Epub 2020 Dec 28. PMID: 33382995
- [European Biological Variation Study \(EuBIVAS\): within- and between-subject biological variation estimates of  \$\beta\$ -CTX, PINP, osteocalcin, intact-FGF 23 and uCuP-MGP - a cooperation between the EFLM Working Group on Biological Variation and the International Osteoporosis Foundation-International Federation of Clinical Chemistry Committee on Bone Metabolism.](#) Cavalier E, Lukas P, Bottani M, Aarsand AK, Ceriotti F, Coşkun A, Díaz-Garzón J, Fernández-Calle P, Guerra E, Locatelli M, Sandberg S, Carobene A; European Federation of Clinical Chemistry and Laboratory Medicine Working Group on Biological Variation and IOF-IFCC Committee on Bone Metabolism Osteoporos Int. 2020 Aug;31(8):1461-1470. doi: 10.1007/s00198-020-05362-8. Epub 2020 Apr 8. PMID: 32270253
- [Harmonization of commercial assays for PINP; the way forward.](#) Vasikaran SD, Bhattoa HP, Eastell R, Heijboer AC, Jørgensen NR, Makris K, Ulmer C, Kanis JA, Cooper C, Silverman S, Cavalier E. Osteoporos Int. 2020 Mar;31(3):409-412. doi: 10.1007/s00198-020-05310-6.
- [A multicenter study to evaluate harmonization of assays for N-terminal propeptide of type I procollagen \(PINP\): a report from the IFCC-IOF Joint Committee for Bone Metabolism.](#) Cavalier E, Eastell R, Rye Jørgensen N, Makris K, Tournis S, Vasikaran S, Kanis JA, Cooper C, Pottel H, Morris HA; IFCC-IOF Joint Committee for Bone Metabolism (C-BM). Clin Chem Lab Med. 2019 Sep 25;57(10):1546-1555. doi: 10.1515/cclm-2019-0174

## WG-SHbA2

The roadmap as published (Mosca A, Paleari R, Harteveld CL, on behalf of the IFCC ICSH Joint







Working Group for standardization of HbA2. A roadmap for the standardization of hemoglobin A2. Clin Chim Acta 2021;512:185-90), is leading the activities of this WG for this year and for the next years.

#### **WG-CMT**

- Miller WG, Greenberg N, Budd J, Delatour V, for the IFCC Working Group on Commutability. The evolving role of commutability in metrological traceability. Clin Chim Acta 2021;514:84-9

#### **WG-ID**

There has not been a publication in 2021.

#### **WG-APO MS**

A manuscript on the establishment of an SI-traceable Reference Measurement System for apolipoproteins as envisioned by our WG was published in Clin Chem:

Cobbaert, C., Althaus, H., Begcevic, I., Ceglarek, U., Coassin, S., Delatour, V., Deprez, L., Dikaïos, I., Dittrich, L., Hoofnagle, A., Kostner, G., Kronenberg, F., Kuklennyik, Z., Prinzing, U., Vesper, H., Zegers, I. and Ruhaak, L.R., Towards an SI-traceable Reference Measurement System for seven Serum Apolipoproteins using bottom-up Quantitative Proteomics: Conceptual Approach enabled by Cross-Disciplinary/Cross-Sector Collaboration, CLINICAL CHEMISTRY, ISSN 0009-9147, 67 (3), 2021, p. 478-489.

This publication is accompanied by an AACC podcast: <https://www.aacc.org/science-and-research/clinical-chemistry/clinical-chemistry-podcasts/2021/si-traceable-reference-measurement-system-for-seven-serum-apolipoproteins>

Based on the publication, the chair was invited by A Hoofnagle to contribute to a Q&A on the topic of higher order protein measurements by LC-MS. Hoofnagle AN, Cobbaert CM, Delatour V, Kelleher NL, Lowenthal MS, Shuford CM. Should LC-MS/MS Be the Reference Measurement Procedure to Determine Protein Concentrations in Human Samples? Clin Chem. 2021 Mar 1;67(3):466-471. doi: 10.1093/clinchem/hvaa256. PMID: 33279988; PMCID: PMC7935753.

A supportive editorial by Brian Rappold in the same Clin Chem issue valued the importance of the IFCC WG APO-MS efforts on establishing an SI-traceable RMS for apolipoproteins! Brian A Rappold Clinical Chemistry, Volume 67, Issue 3, March 2021, Pages 461-462, <https://doi.org/10.1093/clinchem/hvaa335>

A transition letter and infographic have been prepared and published on the IFCC website to guide IVD-manufacturers in their transition from old to new RMS for apo AI, B and (a).

[https://www.ifcc.org/media/478995/210519\\_cdc\\_update\\_who-ifcc\\_apomaterials\\_def.pdf](https://www.ifcc.org/media/478995/210519_cdc_update_who-ifcc_apomaterials_def.pdf)

[https://www.ifcc.org/media/479001/210514\\_ifcc-apo-traceability\\_infographic\\_def.pdf](https://www.ifcc.org/media/479001/210514_ifcc-apo-traceability_infographic_def.pdf)

Two manuscripts are in preparation:

One manuscript describes the results of the commutability study for apo(a), in which also the suitability of the currently used approach for commutability assessment is assessed.

A second manuscript describes **the development and provisional validation of the candidate LC-MS based reference method.**

#### **WG-FIT**

The following paper has been published in Clinica Chimica Acta journal.

- Faecal Immunochemical Tests for Haemoglobin: Analytical Challenges and Potential Solutions Sally C Benton<sup>1</sup> (0000-0001-9230-9088) Erin Symonds<sup>2,3</sup> (0000-0003-2451-

0358), Natasha Djedovic<sup>4</sup>, Samantha Jones<sup>5</sup>, Liesbet Deprez<sup>6</sup> (0000-0002-6895-0382), Petr Kocna<sup>7</sup> (0000-0002-7509-2734), Josep Maria Auge<sup>8</sup> (0000-0001-6383-7308) on behalf of the International Federation of Clinical Chemistry Faecal Immunochemical Test Working Group (IFCC FIT-WG)

### WG-cfDNA

- Danesi R, Lo YMD, Oellerich M, Beck J, Galbiati S, Del Re M, Lianidou E, Neumaier M, van Schaik RHN. "What do we need to obtain high quality circulating tumor DNA (ctDNA) for routine diagnostic test in Oncology? – Considerations on pre-analytical aspects by the IFCC workgroup cfDNA". Clin Chim Acta (2021) Sep;520:168-171. PMID 34081934

### WG-PCT

- Activities conducted by IFCC WG-PCT are described in a paper that was accepted early January 2021 for publication in the IFCC SD Special issue of CCA (Clin Chim Acta. 2021;515:111-121)
- Results of the PCT EQA schemes and an analysis of all published correlation studies are subject to a publication that was published in CCLM (Clin Chem Lab Med. 2021;59(10):1610-1622)
- An article describing optimization of the sample preparation of the candidate reference method was published in analytical and bioanalytical chemistry in May 2021 (Anal Bioanal Chem. 2021;413(19):4707-4725). All WG members are identified as collaborators.
- This publication was recently subject to a letter to the editor submitted by Fresenius University (Prof Schneider, who is a member of IFCC WG-PCT) and a reply from LNE that were published (Anal Bioanal Chem. 2021;413(19):4917-4919 & Anal Bioanal Chem. 2021;413(19):4921-4922).
- The fifth publication describing the candidate reference method with protein-based calibration was submitted to anal chem in 2021 and is under revision.

### WG-CGM

Standardization process of continuous glucose monitoring: traceability and performance. Published in Clinica Chimica Acta, 2021. <https://doi.org/10.1016/j.cca.2020.12.025>

Continuous Glucose Monitoring – What should be optimized and considered in the future? Scientific short, published online at American Association for Clinical Chemistry (AACC), 2021. <https://www.aacc.org/science-and-research/scientific-shorts/2021/continuous-glucose-monitoring-what-should-be-optimized-and-considered-in-the-future>.

### WG-CDT

Clin Lab International - CDT: a truly traceable and specific biomarker for chronic alcohol misuse. JD. Feb/Mar21,18-19.

### WG-PT INR

- Antonius M. H. P. van den Besselaar, Claudia J. J. van Rijn, Charmane F. Abdoel, Veena Chantarangkul, Erica Scalabrino, Steve Kitchen, Armando Tripodi, Anita M. Woolley, Lidia Padovan and Christa M. Cobbaert. [Paving the way for establishing a reference measurement system for standardization of plasma prothrombin time: Harmonizing the manual tilt tube method.](#) DOI:10.1111/jth.14873 J Thromb Haemost. 2020;18:1986–1994.
- [Antonius M H P van den Besselaar, Claudia J J van Rijn, Charmane F Abdoel, Christa M Cobbaert.](#) Bias and uncertainty of the International Normalized Ratio determined with a

whole blood point-of-care prothrombin time test device by comparison to a new International Standard for thromboplastin. doi: 10.1016/j.thromres.2021.02.018. Thrombosis Research 202 (2021) 1–7.

- Antonius M. H. P. Van Den Besselaar and Christa M. Cobbaert. Effect of the reaction temperature on the prothrombin time and the apparent International Normalized Ratio determined with International Standards for thromboplastins. Int J Lab Hematol 2021;00:1–6.



#### **WG-CSF**

Validation of the LUMIPULSE automated immunoassay for the measurement of core AD biomarkers in cerebrospinal fluid Clin Chem Lab Med. 2021 Nov 15;60(2):207-219.

*Philippe Gillery, SD Chair and Joseph Passarelli, SD Secretary*

## EDUCATION AND MANAGEMENT DIVISION (EMD)

Prof. Nader Rifai's first term as the new Chair started on 1st January 2021.

The EMD EC met 4 times in 2021 via Zoom:

- Wednesday, January 27th,
- Wednesday, May 12th,
- Wednesday, June 9th, and
- Monday, Nov 29th. This meeting was held as a Zoom substitute for the postponed EuroMedLab 2021 Munich meeting.

Meetings with the chairs:

- During the two meetings of May and June appointments were also held with Chairs of EMD Committees, Working Groups, and Special Projects.

Opening/Closing of the functional groups:

- Working Group on Harmonisation of Interpretive Comments EQA (WG-ICQA) was terminated in agreement with the IFCC Executive Board.
- Working Group on Personal Support (WG-PS) will be terminated in agreement with the IFCC Executive Board

COVID-19 pandemic impact:

- Many of the on-site activities planned for 2021 by the EMD functional groups that involved face-to-face meetings/workshops and symposia were either postponed, canceled, or held virtually. This was in particular the case for the VLP program. Nevertheless, the functional groups did great efforts to keep most of their working plan fulfilled, and they met mostly via online meetings.

### *Activities of the functional groups in 2021 in detail.*

#### **9.02.04 Clinical Molecular Biology Curriculum (C-CMBC)**

Chair: Verena Haselmann

1. The annual meeting of the C-CMBC Committee team took place in March 2021 as a web-based meeting. We agreed on nominating Prof. Russomando as a new member of the C-CMBC and decided to postpone our courses until the current health care situation improves.
2. The first C-CMBC Advanced Course was evaluated by the chair and the evaluation was provided to all committee members. We have been in contact with Prof. Aylin Sepici Dincel from Turkey and she is interested in hosting the next basic and advanced course in Turkey. She would be willing to host the advanced course in January 2022 and the committee agreed to discuss with IFCC whether this can be considered as a postponed 2021 course.
3. We have summarized all in-silico training and assay validation as a training/homework book for the Advanced Molecular Genetics Course. This activity is ongoing.
4. Unfortunately, until now it was not possible to conduct the 2nd C-CMBC advanced course. As mentioned under Activity 2, we are in contact with Turkey to host this course in January as a postponed 2021 course in case IFCC agrees.
5. We identified Turkey as the next hosting society for the C-CMBC beginner's course in 2022. The homework book, experiments, and on-site training book were revised. The pre-course needed to be postponed to 2022.
6. Due to the health care situation, it was unfortunately not possible to conduct the course in 2021, and thus the next course has to take place in 2022.



7. As it will not be possible to completely transform these (partly web lab and mainly in-silico onsite training/course) into an online format, we have identified the one-day pre-course part of the C-CMBC beginner's course as a potential online-format suitable training unit. Thus, we will provide the basics of molecular genetics including the structure and function of nucleic acids, the principle of transcription and translation as well as the principle of PCR as online tutorials. This is still a work in progress.
8. As a result of the beginner's course in La Paz, Bolivia, our junior member Dr. Rodrigo Pessoa Rejas has extended his specialization in Genetics by undertaking a six-month hospitation at the Institute of Clinical Chemistry of the University Hospital in Mannheim, Germany. He finished this in August 2021. A report was written and published in IFCC eNews.

### **9.02.07 Evidence-Based Laboratory Medicine (C-EBLM)**

Chair: Annalise Zemlin

#### **1. Submission of Talks to IFCC eAcademy.**

Proposed for 2021:

All members of the committee to submit at least one talk each in 2021. Need to find out who will be evaluating talks as the Education Committee has been discontinued.

Outcome 2021:

Talks submitted previous years loaded to eAcademy

SB and RK submitted talks – talks by SB evaluated by Prof Langman and approved

Need to confirm who will be taking over from Education Committee – talks not yet uploaded

#### **2. EBLM Questionnaire and Survey**

Proposed for 2021:

The original survey has been translated from Spanish and after input from all committee members, will be submitted for publication.

Abstract comparing surveys will be prepared and submitted for IFCC Congress in Munich 2021.

Outcome 2021:

NG lost all files when moved to a new position. Attempted to write abstract but realized that not possible with lost data. Activity had to be terminated.

#### **3. Guideline Review**

Proposed 2021:

Committee to be trained on the use of AGREE tool

Guideline appraisal

Outcome 2021:

Guideline appraisal project postponed due to pandemic and workloads

#### **4. Congress Attendance**

Proposed 2021:

IFCC Virtual Congress on COVID-19 (February 2021) – AEZ invited speaker

Munich 2021 – committee to submit abstracts for a poster presentation.

Seoul 2022 – SB invited speaker in EBLM symposium

Kolkata 2021 – possible symposium if not canceled due to COVID-19

COLABIOCLI 2022 – Application submitted for funding to present a symposium (AEZ, NG, SB, RK)

Outcome 2021:

a. AZ presented at IFCC Virtual Congress on COVID-19 - Biochemical Lab tests in

## COVID-19

Could not submit to Munich as survey data was lost and the project had to be terminated  
Seoul postponed to 2022 - SB  
Kolkata canceled due to COVID-19  
Application to COLABIOCLI unsuccessful  
AACC 2022/23 – possible University Day being discussed

### **5. Possible publications 2021**

Proposed 2021

The committee has been approached by the editor of Clinical Biochemistry to participate in a special edition – committee to submit 2-4 manuscripts

Outcome 2021

Not successful due to pandemic and workload

### **6. IFCC Webinars**

Proposed 2021

Committee to present one webinar in 2021

Outcome 2021

Successful webinar 8 September 2021

Title – Evidence-based laboratory medicine - Chair AEZ

Speakers:

Introduction to EBLM (SB)

Guideline Implementation (ADW)

Point of Care Testing and Evidence-Based Laboratory Medicine – does it leverage any advantage in clinical decision making? (KRC)

### **7. EBLM Website and social media**

Proposed 2021

Possibility of starting blogs discussed

Outcome 2021

Not successful due to pandemic and workload

### **8. Meetings**

Proposed 2021

Quarterly conference calls – all full and corresponding members

Annual General Meeting – Munich November 2021

Outcome 2021

Meetings held using Zoom in 2021: 24 May, 14 July, 16 August, and 13 October

Annual General Meeting to be held in Munich 29 November 2021. AEZ and ADW will attend in person – Zoom link has been sent to other members, consultants, and corresponding members. This Meeting has been postponed to Munich April 2022.

### **9. Additional activities – work on behalf of the committee not stated in the 2021 work plan AEZ:**

Invited speaker at Consortium of Accredited Healthcare Organizations (CAHO) India Virtual Conference 27 March 2021 – title EBLM and Laboratory Audits as Quality Tools

Invited speaker at Mumbai Tata Memorial Department of Clinical Biochemistry CME 28 August 2021- title Clinical Decision Limits in Evidence-based Guidelines – What the Clinician does not Realise

Invited speaker Unibadan Conference of Biomedical Research – Nigeria 13-18 September 2021 – title Application of Evidence-based Laboratory Medicine in the Age of Personalised Medicine





Invited Plenary speaker 7th Annual Conference for The Saudi Society for Clinical Chemistry 1 December 2021 – title Clinical Decision Limits in Evidence-based Guidelines

**ADW:**

AACC 2021 University Course - lecture on Current Guidelines in Endocrinology for 40 mins.

**KRC:**

2 Spanish talks for the Mexican Society of Chemistry (CONQUILAB) June and October 2021

**SB:**

Organising Committee Consortium of Accredited Healthcare Organizations (CAHO) India Virtual Conference 27 March 2021

Invited speaker 4th Pathology Research and Development Congress (South Africa) – title The sigma metrics paradigm in lean laboratory services

Invited speaker at Mumbai Tata Memorial Department of Clinical Biochemistry CME 28 August 2021 – title Therapeutic monitoring of biochemical parameters in COVID-19 – what is the evidence?

Invited to chair and convene a symposium titled “Leadership and Management” for ACBI 12-15 December 2021 in collaboration with IFCC-EBLM. Also speaker for this session. Title: “Leaders and Leadership - What do we need?”

**RK:**

Invited speaker ACBI Meeting India December 2021 – title: Evidence-based test utilization & stewardship of resources: Lab management responsibility

**NG:**

Senior author article: An opportunity to emphasize the relevance of laboratory medicine. Adv Lab Med 2021; 2(3): 432–440 - published on behalf of the committee. Xavier Filella (corresponding member of C-EBLM was a co-author.

**CF:**

Virtual presentation on EBLM to the RCPA-AACB Chemical Pathology Course (online). 16th Feb 2021

**9.02.09 Clinical Laboratory Management (C-CLM)**

Chair: Praveen Sharma

1. To perform one conference call meeting.  
Performed on May 01, 2021, via Zoom with the attendance of all full members and four corresponding members.  
The next meeting of C-CLM was due during Euromedlab 2021 in Munich, Germany. This Meeting has been postponed to Seoul June 2022.
2. To complete the textual learning materials and record the presentations associated with pursuing the workshops related to the Laboratory Leadership Training Certificate Program by the second quarter of 2021.  
Editing work is in progress.
3. This project is due and postponed to Q2 in 2022 for publishing To finish the monograph entitled “Practical Approaches to Quality Systems Set-up for Compliance with the Internationally – Acceptable Requirements” (formerly known as a joint monograph with C-AQ, the title has been revised) which have been under review during 2018-2020 and publish it within the first quarter of 2021.
  - a. Editing work is in progress.
  - b. This project is due and postponed to Q1 in 2022 for publishing
4. To conduct at least one symposia/workshop/virtual program with regard to the pursuits of C-CLM.

C-CLM members will present a symposium at the 7th Regional Congress of the African Federation for Clinical Chemistry (AFCC) to be held between the 10th to the 12th of November, 2021. It is being organized by the Biomedical Society of Zambia (BMSZ). The details are as below:

**Symposia title: Planning and structuring the stakeholder relations in the laboratory management**

Chair – Praveen Sharma

**Topics and Speakers:**

Strategies for effective conflict management in the workplace - Sedef Yenice

Becoming a skilled communicator in clinical laboratory management - Merve Sibel Gungoren

The impacts of Ethics and Value in laboratory medicine -Praveen Sharma

C-CLM members will present a symposium at the 47th Annual Conference of the Association of Clinical Biochemists of India (ACBICON 2021) to be held virtually from 13th to 15th December 2021. The details are as below:

**Symposium Theme: Improving laboratory value through utilization and management**

Date and Time of Presentation: 15th December afternoon (14 h tentatively) (IST)

Chairperson: Sedef Yenice

**Topics and Speakers:**

Ed Randell: High Impact initiatives that improve laboratory utilization

Raja Elina: Expanding Opportunities for Medical Laboratory Scientists in Improving Laboratory Value

Merve Sibel Gungoren: Using Laboratory Data and Informatics to Improve Test Utilization and Management

Praveen Sharma: Value-based Laboratory Medicine Practice: Opportunities and Challenges

To provide one webinar for the IFCC webinar program 2021.

C-CLM members (Praveen Sharma, Merve Gungoren, and Ed Randell) participated in an IFCC Live Webinar on Risk Management (10th May 2021)

Topic: Risk Management in Clinical Laboratories

Moderator: Sedef Yenice

**Topic and Speakers:**

Overview of Risk Management - Merve Sibel Gungoren

Process of Risk Management – Praveen Sharma

Risk Management and Continuous Improvement – Ed Randell

To produce the following monographs within the second quarter of 2021 which have been in progress in 2019-2020: a. Basic Problem-Solving Tools or Basic Tools for Quality Improvement b. Project Management Basics for Laboratory Leaders

The release for publication is planned for Q2 in 2022.

To survey on issues related to laboratory management.

Work is in progress and ideas for plausible survey topics are being discussed among members and corresponding members.

**8. Additional activities – not stated in 2021 work plan**

PS was invited as a speaker to the 31st Malaysian Association of Clinical Biochemists (MACB) conference held virtually from 21st to 22nd June 2021. He delivered a talk on “Management Responsibility in Good Laboratory Practice”.





PS was an invited speaker and delivered a symposia talk on “COVID-19 laboratory diagnosis in India” at the Laboratory Medicine Congress & Exhibition & KSLM 62nd Annual Meeting (LMCE 2021), held virtually from September 30 to October 2, 2021.

PS was an invited speaker and delivered a talk on “POCT in Developing Countries” in POCT: Making The Point held in Rome on 6th and 7th September 2021.

ER was an invited speaker and delivered a talk on “Leading POCT networks: operating POCT programs across multiple sites involving vast geographical areas and rural communities.: Making The Point held in Rome on 6th and 7th September 2021

C-CLM members submitted an AACC University Course entitled The Laboratory Leader as Strategist: Extending Boundaries for Clinical Laboratory Influence and Impact

MG was an invited speaker and delivered a talk on “Data-Driven Laboratory Management” at the Annual Scientific Conference of the Clinical Chemistry Association of Kenya (CCAK) in October 2021.

## **9. Additional information**

The 2nd term of Prof Mathias Orth in C-CLM came to an end in December 2020.

C-CLM welcomed a new Full member Prof Raja Elina from Malaysia. She started her first term in March 2021.

A symposium proposal of C-CLM on ”Essential leadership skills: shaping future leaders for success in laboratory management” was accepted by the IFCC WorldLab Seoul congress organizing committee for May 27, 2020,

has now been postponed to the new dates as announced by IFCC in 2022.

The functional meeting of C-CLM was scheduled on May 26, 2020, at the IFCC WorldLab Congress in Seoul, South Korea. Due to the postponement of IFCC Worldlab, the functional meeting of IFCC C-CLM was scheduled to be held during EuroMedLab 2021. Due to the postponement of the EuroMedLab this Meeting has been postponed to Seoul June 2022.

C-CLM submitted a symposia proposal entitled “Sustaining high-quality clinical laboratory services in a rapidly changing world” for the COLABIOCLI Regional Federation Congress, Leon, Mexico, 2022. The symposia proposal has been accepted.

Symposium Title - Sustaining high-quality clinical laboratory services in a rapidly changing world  
Date: April 1st, 2022 from 11:30 to 15:30 hours (US CT) with simultaneous translation English-Spanish-English.

### **Topics and Speakers:**

Utilization Management – Sedef Yenice

Balancing POCT and Centralized Lab testing – Prasenjit Mitra

Assuring compliance to standards with diverse service delivery models – Ed Randell

Integrated continuous process improvement in all laboratory diagnostic testing modalities – Praveen Sharma

C-CLM members have submitted a proposal for AACC University for the 2022 AACC Annual Scientific Meeting to be held July 24 – 28, 2022 at the McCormick Place convention center in Chicago, IL.

Proposal Title: Laboratory strategic leadership plan towards improving value-based laboratory utilization.

Moderator: Edward Randell

### **Topics and Speakers:**

Edward Randell: Changing Leadership Mindsets for Addressing Critical Issues in the Laboratory and Adopting Disruptive Change

Sedef Yenice: From Competency Models to Collective Leadership: New Mindsets for Laboratory Leaders; and Developing Strategic Thinking skills and tools in decision making

Edward Randell: Leveraging disruption toward positive change; and sustainable laboratory services by design.

Matthias Orth: Transitioning laboratory leadership focus from clinical partners to broader healthcare

partners; and Performance innovation: New and “outside-the-box” approaches to improving analytical performance and quality systems.

Praveen Sharma: Laboratory strategic leadership plan towards improving value-based laboratory utilization.

## 10. Publications

Mitra P, Misra S, Sharma P. Impact of COVID-19 on Clinical Biochemistry: Indian Scenario. *Ind J Clin Biochem* (2021). <https://doi.org/10.1007/s12291-021-01003-x>

Mitra P, Sharma P. POCT in developing countries. *eJIFCC 2021 Vol 32 No 2 pp195-199*.

Mitra P, Misra S, Sharma P. One Year of COVID-19: The “New Normal”. *Ind J Clin Biochem* (2021). <https://doi.org/10.1007/s12291-020-00954-x>

Edward W. Randell, Thakur V. Leading POCT networks: operating POCT programs across multiple sites involving vast geographical areas and rural communities. *eJIFCC 2021 Vol 32 No 2 pp 179-189*.

### 9.02.11 Education in the Use of Biomarkers in Diabetes (C-EUBD)

Chair: Emma English

COVID 19 has significantly impacted the development and implementation of plans for 2021, whilst some work has been restarted and some has been re-focused, other activities have had to be paused for another year.

1. Continue to provide oversight of IFCC HbA1c Reference Laboratory network.  
This activity has continued in conjunction with the European Reference Laboratory and the associated laboratories of the network.
2. Continue to develop the EuroA1c study, expanding into new countries. To write an update paper describing the current situation of HbA1c quality based on Sigma metrics.  
The EurA1c trial has been continued in an adjusted format due to the restrictions in the supply of blood donors and global logistical difficulties. Reports of the latest data have been circulated to EurA1c trial laboratories and an article is in draft.
3. Restart initiative with the German Laboratory and Diabetes National Societies to introduce standardised reporting of results across Germany. This will be a long-term project taking several years to complete.  
This project has been revisited and is ongoing, identification of key stakeholders has been undertaken and a summary of key issues drafted. This project has been revisited and is ongoing, identification of key stakeholders has been undertaken and a summary of key issues drafted.
4. Continue planning the two postponed Symposia at the IFCC WorldLab meeting in Seoul; now to be delivered in 2022. We are hoping this will take place in June 2022.
5. Finalise presentation to be given at IFCC-EFLM EuroMedLab Munich 2021. Postponed till April 2021.
6. Finalise the WHO Laboratory Handbook. This has been put on hold (again) due to WHO activity in COVID-19.  
This has paused due to Covid, however, the WHO list of priority medical devices for the management of cardiovascular diseases and diabetes has now been published and the previous and current Chair’s of the committee are expert panel members. Whilst this was not done as a joint IFCC-WHO the two-panel members were invited due to their position within the IFCC indicating relevant expertise.  
<https://www.who.int/publications/i/item/9789240027978>
7. Attempt to restart the collaboration with the Shanghai Center for Clinical Laboratory and the Chinese Diabetes Society (CDS) to develop a Laboratory Certification Programme.  
This activity has progressed through the European Reference Laboratory and the IFCC network laboratories in Beijing. Manufacturers can now receive a certification of devices



however laboratory certification is paused due to Covid -19.

8. Continue working with manufacturers to deliver Webinars. This collaboration has been very successful in 2020. Manufacturers continue to recognise the C-EUDB as a source of expert opinion and collaboration.

This activity has continued where possible with Emma English, Erna Lenters, and Garry John contributing to webinars on HbA1c and other biomarkers.

9. Additional activities – not stated in the 2021 work plan.

In addition to the WHO PMD described above, Emma English was commissioned by the WHO to construct technical specifications for approximately 80 clinical chemistry, haematology and microbiology tests. These templates support the tests listed in the 3rd edition of the WHO Essential Diagnostics List (EDL). The authors tried to ensure as many IFCC articles as possible were used as supporting evidence and publications from this committee were used to evidence the tests for POCT HbA1c and Laboratory HbA1c measurement, demonstrating the direct, global impact of the work of the committee.

10. Additional Information.

The committee and committee members have been approached by several manufacturers to deliver Webinars. Manufacturers have stated that the committee provides a valuable source of experts for educational programmes.

11. Publications.

Lenters-Westra E, English E. Are hemoglobin A1c point-of-care analyzers fit for purpose? The story continues. *Clin Chem Lab Med*. 2020 Nov 2;59(4):765-774. doi: 10.1515/cclm-2020-1308. PMID: 33128524.

Butler AE, English E, Kilpatrick ES, Östlundh L, Chemaitelly HS, Abu-Raddad LJ, Alberti KGMM, Atkin SL, John WG. Diagnosing type 2 diabetes using Hemoglobin A1c: a systematic review and meta-analysis of the diagnostic cutpoint based on microvascular complications. *Acta Diabetol*. 2021 Mar;58(3):279-300. doi: 10.1007/s00592-020-01606-5. Epub 2020 Nov 3. PMID: 33141338; PMCID: PMC7907031.

Barron E, Misra S, English E, John WG, Sampson M, Bachmann MO, Barth J, Oliver N, Alberti KGMM, Bakhai C, O'Neill S, Young B, Wareham NJ, Khunti K, Jebb S, Smith J, Valabhji J. Experience of point-of-care HbA1c testing in the English National Health Service Diabetes Prevention Programme: an observational study. *BMJ Open Diabetes Res Care*. 2020 Dec;8(2):e001703. doi: 10.1136/bmjdr-2020-001703. PMID: 33318069; PMCID: PMC7737024.

Van der Hagen EAE, Leppink S, Bokkers K, Siebelder C, Weykamp CW. Evaluation of the ARKRAY HA-8190V instrument for HbA1c. *Clin Chem Lab Med*. 2020 Dec 24;59(5):965-970. doi: 10.1515/cclm-2020-1300. PMID: 33554536.

### 9.02.12 Cardiac Biomarkers (C-CB)

Chair: Fred Apple

1. Clinical Scorecard: With the completion of data acquisition, we will now initiate a review of statistical analyses and discuss findings with members and corporate representatives, with the plan of establishing a writing group to draft a minimum of 2 manuscript submissions and 2 abstract submissions (AACC September 2021 Anaheim, IFCC EuroMedLab Munich Nov/Dec2021, others) along with presenting data at the IFCC WorldLab meeting in Seoul, South Korea in June (whether virtual or in-person depending on COVID-19 global status). **Report: Final statistical analyses were delayed as the 'Mayo patient cohort' data findings have been delayed due to lack of final sample analyses and outcomes adjudication at Mayo. It was decided at the October monthly zoom meeting to move forward with analysis without Mayo data and add Mayo back into the model when completed. The goal is to have Hennepin and Scotland data combined and analyzed**



**by end of the year. The goal is to submit the abstract to AACC 2022 meeting, the deadline is in February.**

2. Organize and submit proposals for workshop and or symposium presentations for IFCC and industry-sponsored meetings pertaining to educational guidelines on hs-cTn and natriuretic peptide assays. Apple has submitted a C-CB scientific proposal to the 2021 AACC. C-CB has rescheduled the first, 'Bretton Woods Cardiac Biomarkers 2021 Conference', October 14-15, 2021. The meeting will be followed by a Saturday, October 16, 2021 meeting of the IFCC Committee on Clinical Applications of Cardiac Biomarkers. **Report: Due to COVID Bretton Woods Cardiac Biomarkers 2021 Conference was canceled. Kavsak and Jaffe did present at the 2021 joint AACC/CSCC meeting in Atlanta on Natriuretic Peptide guidelines that C-CB published in Clinical Chemistry.**
3. Initiate and finalize educational manuscripts:
  - a) A C-CB 'special report' manuscript on ESC guideline appraisal was submitted and being fast-tracked by Clin Chem; hopefully to be accepted and published online in January 2021: "IFCC Clinical Application of Cardiac Biomarkers Committee's Appraisal of the 2020 ESC Guidelines for the Management of Acute Coronary Syndromes in Patients Presenting Without Persistent ST-segment Elevation: Getting Cardiac Troponin Right"; **Report: This document was published:** Apple FS, Collinson PO, Kavsak PA, Body R, Ordóñez-Llanos J, Saenger AK, Omland T, Hammarsten O, Jaffe AS, on behalf of the IFCC Committee Clinical Application of Cardiac Biomarkers. The IFCC Clinical Application of Cardiac Biomarkers Committee's appraisal of the 2020 ESC Guidelines for the Management of Acute Coronary Syndromes in Patients Presenting Without Persistent ST-segment Elevation: getting cardiac troponin right. Clin Chem 2021, doi:10.1093/clinchem/hvaa337.
  - b) Continue COVID-19 delayed collaboration with the IFCC POC committee regarding preparation and submission for publication on POC cardiac troponin and NP assays and education materials addressing the current state of the art of POC assays; **Report: no activity with POC committee due to COVID. However, Collinson and Hammarsten are drafting an educational paper on POC cardiac troponin assays and clinical utilization criteria**
  - c) Collaborative educational paper, possibly with AACC Academy and EFLM addressing sex-specific 99th percentile upper reference limits (URL) including Newborn and Transgender 99th percentile URLs and NP reference limits. **Report: Saenger & Aakre have drafted an educational document on the - 99th percentile upper reference limits that are being reviewed. Y the C-CB members. The goal for submission, fiat quarter 2022.**
  - d) Prepare document on the use of 'single baseline measurement' of hs-cTn for ruling out MI and myocardial injury; considering whether there is a role for NP testing. **Report: Jaffe & Body are drafting an educational document on a single baseline measurement of hs-cTn for ruling out MI and myocardial injury that will be circulated by end of the year to C-CB for review, with a goal of submission first quarter 2022.**
4. Continue, as 2020 carry-over, hire an APP development group/person, in collaboration with the diagnostics companies, to build, test, and go to production, and maintain an APP based on high sensitivity cardiac troponin and natriuretic peptide assays, utilizing educational materials that have been published by the C-CB. The goal is to educate clinicians in emergency medicine, cardiology, internal medicine, and surgery, as well as colleagues in laboratory medicine, in the analytical and clinical aspects of cardiac biomarker assays. **Report: APP has been put on hold due to finances and inability to best coordinate experts to build APP and maintain APP. Not a done deal yet.**





5. Continue to update tables' postings on the IFCC C-CB webpage for the Troponin & NP Analytical Assay Characteristics Tables, 2 to 3 times yearly.  
**Report: All tables were updated 3 times in 2021, the last version in October. Currently communicating with manufacturing companies to provide more information on assay interferences, such as macro-troponins, as well as calibration and standardization materials. Hammarsten will be taking the lead to draft an educational paper on macro-troponin.**
6. Initiate preparation for a link on our C-CB website for a) all papers that have been published by the C-CB as well as from prior TF-CB group including educational resources and b) all minutes from all committee meetings.  
**Report: A link has been established on the C-CB website addressing all manuscripts published by the C -CB and previous TK-CB. Establishing a link for posting minutes on Zoom meeting will start in 2022, with the posting of the monthly 2021 minutes on January 2022, to be followed with regular monthly updates.**
7. Continue, as 2020 carry-over, to distribute educational materials addressing cardiac troponin and natriuretic peptide assays using mouse-pads, stick-drives, t-shirts, laminated index cards, at national and international IFCC, Laboratory Medicine, Cardiology and Emergency Medicine meetings; that include PDFs of the growing list of published documents from the C-CB (COVID-19 dependent).  
**Report: Due to COVID there has been no activity on this item of distributing educational materials, as no one has been attending in-person meetings.**
8. Continue, as 2020 carry-over, to establish a Social Media presence under the guidance of Dr. Rick Body, including a) the development of a code of conduct for the C-CB to tweet statements on behalf of the committee, b) allowing open access to post comments/ tweets, and use to combat some of the published materials which conflict with appropriate use of hs-cTn and NP assays. Consider the production of videos of individuals/ KOLs as an educational venue to post on our website page.  
**Report: There has been some social media presence but honestly not a lot of activity. This goal will be carried over to 2022.**
9. Have zoom monthly C-CB meetings, until in-person meetings can safely begin again.  
**Report: Monthly Zoom meeting occurred January through June, and started again in October.**
10. Welcome new member to C-CB, Kristin Moberg Aakre, MD, Ph.D., Consultant, Hormone Laboratory, Haukeland University Hospital, Associate Professor, University of Bergen.  
**Report: Aakre has been an excellent addition to C-CB.**
11. Additional activities – not stated in 2020 work plan  
**Report:**
  - a. **Saenger and Ravalico have finished their review of the C-CB website update & will be making written final recommendations that will be used to reorganize and improve the website, with the assistance of the IFCC office.**
  - b. **Future meetings have been discussed:**
    - a. **EuroMedLab meeting in Munich November 2021.**
    - b. **IFCC WorldLab in Seoul 2022.**
    - a. **Need to discuss IFCC WorldLab Rome 2023 with a goal to submit an educational proposal for a scientific session or symposium, however, C-CB was informed that it was too late to submit proposals.**
12. Additional information  
Professor Apple and C-CB members thanks the IFCC office for all their outstanding assistance throughout 2021.  
Professor Apple and the C-CB members thank the industry representative for their ongoing support and collaborations.  
Professor Lam resigned from the C-CB, with regrets, due to competing obligations. Apple

will discuss with Rifai about replacing her, ideally with a heart failure laboratory medicine or clinical heart expert.

### 13. Publications:

- 1) Kavsak PA, Lam CSP, Saenger AK, Aakre KM, Body R, Hammarsten O, Collinson P, Ordóñez-Llanos J, Omland T, Jaffe AS, Apple FS. Biomarker Testing Considerations in the Evaluation and Management of Patients With Heart Failure: Perspectives From the International Federation of Clinical Chemistry and Laboratory Medicine Committee. *J Card Fail.* 2021 Jul 10:S1071-9164(21)00266-9. doi: 10.1016/j.cardfail.2021.06.018. Epub ahead of print. PMID: 34256137.
- 2) Apple FS, Collinson PO, Kavsak PA, Body R, Ordóñez-Llanos J, Saenger AK, Omland T, Hammarsten O, Jaffe AS, on behalf of the IFCC Committee Clinical Application of Cardiac Biomarkers. Getting cardiac troponin right: an appraisal of the 2020 European Society of Cardiology Guidelines for the Management of Acute Coronary Syndrome in Patients Presenting Without Persistent ST-Elevation by the International Federation of Clinical Chemistry and Laboratory Medicine Committee on the Clinical Application of Cardiac Bio-Markers. *Clin Chem* 2021;67:730-5.
- 3) Apple FS, Fantz CR, Collinson PO. Implementation of high-sensitivity and point of care cardiac troponin assays into practice: some different thoughts. *Clin Chem* 2021;67:70-78.
- 4) Kavsak PA, Hammarsten O, Worster A, Smith SW, Apple FS. Cardiac troponin testing in patients with COVID-19: a strategy for testing and reporting results. *Clin Chem* 2021;67:107-113

#### 9.02.13 Kidney Disease (C-KD)

Chair: Flavio Alcantara (report not received)

In October 2021 Joe El-Khoury has been nominated Chair of the C-KD. A meeting was planned to be held during EuroMedLab Congress in Munich 2021. This Meeting has been postponed to Seoul June 2022.

#### 9.02.14 Point of Care Testing (C-POCT)

Chair: Adil Khan

- 5) Position Paper on Point-of-Care Testing in settings outside the hospital.
- 6) This has been reviewed during the virtual meeting of 1st December and is ongoing.
- 7) Point-of-Care Testing lecture for IFCC eAcademy
- 8) Pending some edits, this will be submitted to IFCC eAcademy.
- 9) Joint Conference between IFCC EMD/ETD and AACC CPOCT: "POCT: Making the Point." September 6-7, 2021 at Tor Vergata University, Rome, Italy.
- 10) This was completed and presented as a hybrid in-person and virtual meeting.
- 11) C-POCT plans to hold/participate in a POCT workshop at the African Federation of Clinical Chemistry 23rd – 25th September 2021.
- 12) This was completed on 10 November 2021 and presented virtually.
- 13) EUROMEDLAB 24th IFCC, Congress, 28th November – 2nd December 2021 Session on POCT. Chaired by Dr. Adil I. Khan (also a speaker).
- 14) Continue to develop a guideline for GPs on POCT.



1. C-POCT will give an IFCC Webinar: Dotting the “i’s” and Crossing the “t’s”: Point-of-Care Testing in Resource-Limited Settings (Date: to be announced). This was presented on 15 July 2021

#### **8. Additional activities – not stated in 2021 work plan**

- (i) IFCC C-POCT Committee participated in POCT Africa Conference 11-12 March 2021
- (ii) IFCC C-POCT Committee plans to hold POCT Conference in Pakistan in 2022 in conjunction with the Armed forces Institute of Pakistan and Pakistan Society for Chemical Pathologists.
- (iii) Adil I. Khan will be a speaker at the Saudi Society of Clinical Chemists, 3 December 2021.

#### **9. Publications**

All of the presentations at the Joint Conference between IFCC EMD/ETD and AACC CPOCT: “POCT: Making the Point.” September 6-7, 2021 at Tor Vergata University, Rome, Italy were presented in EJIFCC.

<https://www.ifcc.org/ifcc-communications-publications-division-cpd/ifcc-publications/ejifcc-journal/e-journal-volumes/ejifcc-2021-vol-32/ejifcc-vol-32-no-2/>

and

<https://www.ifcc.org/ifcc-communications-publications-division-cpd/ifcc-publications/ejifcc-journal/e-journal-volumes/ejifcc-2021-vol-32/ejifcc-vol-32-no-3/>

#### **9.02.16 Value Proposition for Laboratory Medicine (C-VPLM)**

Chair: Andrew St. John

Writing and publication of two papers on Test Implementation

The first paper on theoretical aspects including a definition of implementation and how it differs from other processes in the test development process including adoption has been completed and published (see list of publications below)

The second paper applying the principles contained in the first paper and providing a guide to the effective implementation of self-monitoring for INR for patients taking warfarin has been drafted and is expected to be submitted for publication review by the end of November.

Development of a health economic assessment tool

This spreadsheet-based tool has been developed and is undergoing testing including by members of the Committee. The next stage will be to demonstrate it at workshops in 2022.

Research projects demonstrating the application of the value proposition and implementation framework.

Each member of the Committee had identified research projects in their own country where the value proposition principles can be applied and tested. Unfortunately, it has only been possible to progress one of these, namely the observational study of the outcome data collected during the implementation of high sensitivity troponin in Emergency Departments in the United Kingdom, but this has not progressed to the point where the data can be prepared for publication.

#### **4. Additional information**

This year has been a more difficult one for the Committee. As well as no face-to-face meetings the COVID environment has made it very difficult to achieve progress with the various projects we had planned in each country. Either the projects have not started or they have not progressed due to a lack of time and resources on the part of laboratory professionals in the supporting laboratories.

In addition, we lost the services of one of our key Committee members who had to withdraw from the Committee due to personal circumstances. We are anticipating his return in the immediate future.

## 5. Publications

1. Jülicher P, O’Kane M, Price CP, Christenson R, St John A. Health economic evaluations of medical tests: Translating laboratory information into value - A case study example. *Ann Clin Biochem.* 2021 May 14;45632211013852.
2. St John A, O’Kane M, Christenson R, Jülicher P, Oellerich M, Price CP. Implementation of medical tests in a Value-Based healthcare environment: A framework for delivering value. *Clin Chim Acta.* 2021 Oct;521:90–6.

### 9.03.08 Laboratory Errors and Patient Safety (WG-Leps)

Chair: Mario Plebani

1. Webinar and virtual sessions in National Congress:
  - a. Mexico webinar on “Detection and prevention of errors in laboratory medicine January 2021”
  - b. XXV Latin-American Congress ALAPAC21 28-31th March 2021 “The IFCC Model of quality indicators”
  - c. LI Mexican National Congress of Clinical Pathology 9th September 2021 “IFCC Quality Indicators Model: Results and Challenges”
  - d. Organization of a module of the EFLM Syllabus project on “Quality management” with three lecturers on the topic of the Model of Quality Indicators (to be released within the end of the year)
2. Organization of a webinar for the Italian Society of Clinical Biochemistry and Clinical Molecular Biology (SIBioC) November 2021
3. Preparation of a paper updating the WG LEPS initiative (planned end of this year-spring 2020)
4. Identification of new leaders in Countries such as Turkey, Mexico, Chile to increase the numbers of laboratories that may attend the program and move towards devolution of the project. I would like to highlight the experience of some current leaders, particularly in Quebec and Canada with the involvement of a huge number of clinical laboratories
5. Continuous use of the new entering procedure for Quality Indicators (QIs) data inputting by laboratories in the dedicated website ([www.ifcc-mqi.com](http://www.ifcc-mqi.com)) and evaluation of collected data to update the State-of-the-Art concerning the data of Quality Indicators.
6. Use of a web application ([www.ifcc-mqi.com](http://www.ifcc-mqi.com)) for data collection that allows the autonomous management of Quality Indicator data belonging to a group of laboratories (for example, laboratories of the same nationality) by a “National Leader”.
7. Additional information  
The COVID-19 pandemic created several difficulties, particularly due to the use of only virtual supports to replace “in presence” meetings, in facilitating the development and further growth of the program
8. Publications
  - 1) Jokic A, Rimac V, Vlasic Tanaskovic J, Podolar S, Honovic L, Lenicek Krleza J. The concurrence of the current post-analytical phase management with the national recommendations: a survey of the Working Group for Post analytics of the Croatian Society of Medical Biochemistry and Laboratory Medicine. *Biochem Med (Zagreb).* 2021 Oct 15;31(3):030704.
  - 2) Ahmed S, Jahan F, Naeem Effendi MU, Ghani F. Impact of COVID-19 on the pre and post-analytical clinical laboratory testing processes- A performance evaluation study using six sigma. *Ann Med Surg (Lond).* 2021 Oct;70:102842. doi: 10.1016/j.amsu.2021.102842.





- 3) Alshaghhdali K, Alcantara TY, Rezgui R, Cruz CP, Alshammary MH, Almotairi YA, Alcantara JC. Detecting Preanalytical Errors Using Quality Indicators in a Hematology Laboratory. Qual Manag Health Care. 2021 Sep 3. doi: 10.1097/QMH.0000000000000343
- 4) Brun M, Füzéry AK, Henschke B, Rozak K, Venner AA. Identifying sources of error and selecting quality indicators for point of care testing. Pract Lab Med. 2021 Mar 21;25:e00216.

### 9.03.10 Harmonisation of Interpretive Comments EQA (WG-ICQA)

Chair: Magdalena Turzyniecka

WG-ICQA was closed in March 2021 in agreement with the IFCC Executive Board.

### 9.03.11 Personal Support (WG-PS)

Chair: Graham Beastall

On the advice of Dr. Beastall, Dr. Rifai recommended to Prof. Adeli to terminate this WG.

### 9.04.01 Visiting Lecturer Programme (IFCC-VLP)

Chair: Sedef Yenice

Because of the COVID-19 pandemic in 2021, 3 VLPs and 8 Visiting Lecturers were approved. Only one was held on-site. The VLP applications approved in 2021 are shown in the appended table.

### 9.04.02 Working Group on Flow Cytometry (WG-FC)

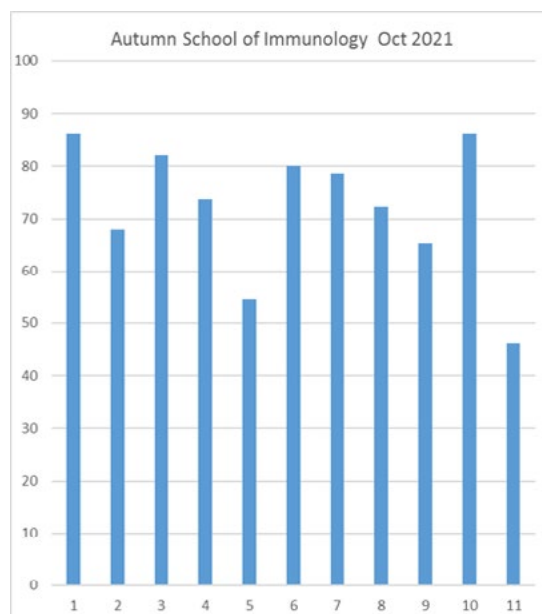
Chair: Claude Lambert

Because of the pandemic, most of our activities had to be cancelled and the activity report is then very poor.

Winter school of Cytometry: Applications in Immunology

was successfully organized in Geneva university but reported in Autumn and then renamed "Autumn School" from 18-22 October.

11 students attended the course from different countries, Poland, Portugal, Italy, Uruguay, Indonesia, Switzerland. 2 more students could not come because of travel restrictions.



Speakers were coming from Switzerland, France, Luxemburg, Germany, Morocco, (Speakers from Algeria could not come because of travel restrictions).

Different fields of immunology were addressed with applications in diagnosis and research.

Precautions were taken (mask, social distancing) in view of the infectious risks.

The course ended with an anonymous exam of 35 questions. 10/11 students passed the exam successfully. One student (MD) missed the exam, probably because she arrived on the second day only as her flight has been cancelled. She managed to come by driving from Poland.

Leipzig Flow cytometry IFCC/Fraunhofer IZI/ Beckman-Coulter course was held in Leipzig, Germany, from 2nd to 4th November 2021.

9 topics were addressed: Basics of cytometry, Multicolor cytometry, Data acquisition, Functional investigations, Sorting of cells, Data analysis, Antigen-specific T cells, Panel extension (FMO), Multiplex data analysis.

The course included 9 hours as a lecture and 18 hours as practical hands-on exercises.

A certificate of attendance was delivered.

Egypt Workshop has been postponed and will be held on 8-9th of December at Al Azhar University in Cairo.

This is a basic course for beginners, mainly in medical diagnosis cursus.

It will be limited to 20 participants and includes theoretical and practical training.

An online initiation to cytometry should be organized in December 2021 in French.

This course aims to initiate juniors to the technique (Masters, Ph.D. students, Junior biologists) especially in the Maghreb and French-speaking Africa but also in Europe. The course will be organized over 2 days.

Several speakers are selected from people who have attended the Courses before in order to encourage them for teaching this method in their place.

Practical will be organized by online demonstration and data analysis.

The course will be organized with the support of the Beckman Coulter company.

## 5. Additional Information

None of the following activities we were expecting could be organized because of the pandemic.

- |                                     |           |
|-------------------------------------|-----------|
| a. Munich Workshop March 2021       | cancelled |
| b. A Latin America School in Brazil | cancelled |
| c. Munich Workshop September        | cancelled |
| d. Chile or Argentina Workshop      | cancelled |
| e. Turkey                           | cancelled |
| f. Sudan                            | cancelled |



<b>VLP 2021</b>		
<b>Period</b>	<b>Country</b>	<b>Lectures title(s) or topic(s)</b>
26-28 August	Palestine/virtual	Dr. KHOSROW ADELI (CA) 1) Plenary session (30 mins): Molecular, Biochemical and Serological Testing of COVID-19 2) Regular presentation (12 mins): Pathophysiology of COVID-19 and Mechanisms Underlying Progression to Death. - Regular presentation (12 mins): Technological advances in Laboratory Medicine: Predicting the Lab of the Future PROF. ELEFTHERIOS DIAMANDIS (GR) 1)Plenary session (30 mins): Clinical applications of proteomics 2)Regular presentation (12 mins): Circulating tumor DNA: A promising biomarker in the liquid profiling of cancer PROF. TOMRIS OZBEN (TR) 1) Plenary session (30 mins): Biomarkers associated with COVID 19 disease progression 2) Regular presentation (12 mins): Blood and non-Internal Quality Control using patient samples: Concept of Moving Averages
08-11 Sept	Bulgaria, Sofia, on site	PROF. KHOSROW ADELI (CA) 1) Technological advances in Laboratory Medicine: Predicting the Lab of the future. 2) Medical Diagnostics Data Management: Emerging Role of Artificial Intelligence (AI)-Powered eApps and Machine Learning. PROF. SVERRE SANDBERG (NO) 1) Porphiria an example of a Disease with Close Interaction within Laboratorians and Clinicians. 2) An update of the Establishment and Utility of Biological Variation Data. PROF. MAURIZIO FERRARI (IT) 1) Expanding Space for Next Generation Sequencing Clinical Applications. 2)Utilization of Clinic Profiling for Cancer Management.
22-24 September	Philippines/virtual	Dr. TONY BADRICK (AU) Internal Quality Control using patient samples: Concept of Moving Averages GERALD KOST (DE) Diagnostic Testing for COVID-19: Mathematics, Prevalence, Special Situations, and Quality

*Nader Rifai, EMD Chair*

## COMMUNICATIONS AND PUBLICATIONS DIVISION (CPD)

The following members served on the CPD Executive Committee in 2021: Tahir Pillay (ZA, Chair), Rajiv Erasmus (ZA, Public Relations Coordinator), Eduardo Freggiaro (AR, Publications/Distance Learning Coordinator), Katherina Psarra (GR, News Editor), J. Kappelmayer (HU, Vice Chair, Editor eJIFCC), and Tricia Ravalico (US, Corporate Representative).

The IFCC website contributed greatly to supporting the laboratory in the pandemic with the IFCC Information Guide on COVID-19, the web-publication that has grown with monthly updates, and with the COVID-19 resource page.

The following is a summary list of the key CPD activities in 2021:

The planned face-to-face meetings in Seoul and Munich could not take place owing to the pandemic and the postponement to EuroMedLab Munich and WorldLab Seoul to 2022. Instead, Zoom meetings were held.

- CPD Chair, Prof. Tahir Pillay (ZA), continued his first term.
- CPD Secretary, Dr Eduardo Freggiaro, began his second term.
- C-PR Chair, Prof Rajiv Erasmus (CA) continued his first term.
- eNews Editor, Dr Katherina Psarra (GR,) continued her first term.
- WG eJIFCC Chair, and eJIFCC editor, Prof János Kappelmayer (HU), began his second term and was appointed CPD Vice Chair.
- Corporate Representative, Tricia Ravalico, began her second term.
- Calls for nominations were opened for CPD functional unit member position vacancies.
- The IFCC triennial Handbook 2021-2023 was prepared and published on 1st May 2021.
- We explored the possibility of using a manuscript submission system such as Scholar one, Editorial Manager or any other open-source platform to be adopted as soon as the eJIFCC increases the number of issues/year.
- News items on the website: more than 110 news items were published on the website.
- Press releases: 4 press releases were drafted and distributed via the AACC press room, with nearly 1500 accesses in total.
- the eJIFCC, the eNews Flash and the eNews are mailed to the IFCC distribution list that includes more than 35.000 contacts of laboratory medicine specialists throughout the world Circulation includes laboratory directors, clinical chemists, and other clinical laboratory specialists and technologists, as well as leading manufacturers, distributors and dealers in the field.

### CPD Symposia at 2021-2022 meetings:

- The planned CPD symposium at WorldLab Seoul 2021 is replanned for June 2022:

### A New Era in Medical Laboratory Diagnostics Management: Application of Advanced Mobile & Web Technology

Chair: Dr. Tahir Pillay, South Africa

- Role of technology in patient management and precision medicine  
Tahir Pillay – South Africa
- Mobile technology and management of point of care instruments.  
Ronda Greaves – Australia
- Using mobile technology to manage big data collection.  
Khosrow Adeli – Canada
- New developments in web technology to enable medical diagnostics lab management.  
Eduardo Luis Freggiaro – Argentina

## Committee on Public Relations (C-PR)

Chaired by prof Rajiv Erasmus

Due to COVID 19, the activities of C-PR were severely curtailed.

However, the C-PR managed to discuss the following issues that if approved could be actioned in 2021.

1. The C-PR expressed serious concerns regarding the poor communication between National Representatives and their members. CPR has proposed several communication strategies including WeChat and WhatsApp accounts and these were discussed in the 2021 CPD meetings. In terms of the use of WhatsApp to increase communication between National Reps and their respective members there were some concerns, and it was decided that its use will be piloted before making a final recommendation.
2. The abbreviated slide deck that summarises the role of IFCC was extensively discussed and slides amended accordingly.
3. The Lab Professional Week, 18-24th April 2021 was discussed at length and several ideas were suggested that included holding webinars, presenting short videos and involving national societies and regional federations. The C-PR announced the “Laboratory Professionals Week 2021” to the IFCC members and collected the many contributions received from them on a special webpage (<https://www.ifcc.org/ifcc-communications-publications-division-cpd/cpd-committees/happy-laboratory-professionals-week-2021/>). Thanks to the experience gained, the C-PR is assisting with the IFCC Global Lab Week, with several members participating in the Group. The C-PR will be available for the activities for the 70th Anniversary of the IFCC that will be celebrated in 2022.
4. New full members: Khushbu Patel (US) as YS; Maria del Carmen Pasquel (EC) was appointed to replace Madgalena Krintus.
5. Press Releases were drafted and distributed via the AACC press desk with an excellent result:
  - Virtual conference COVID 19
  - EuroMedLab Munich 2021
  - UNIVANTS
  - IFCC Guide on COVID-19
6. Information regarding IFCC has been presented so far in the following meetings/workshops
  - a) Kenyan Association of Clinical Pathologists
  - b) Malawian Association of Medical Lab Scientists
7. It was noted that IFCC activities are being advertised via Twitter, Facebook, YouTube.
8. C-PR suggests that the support of Corporates should be sought to advertise IFCC activities. One way is to get the corporate members to also play a role as the information ambassadors in their respective national countries. Of course, these ambassadors need to be endorsed by the national societies so as not to usurp their authority.
9. C-PR recommends translation of IFCC docs and courses into other languages –this can involve TF-YS.
10. C-PR recommends co-operation with other committees - it would be useful to have some cooperation with other committees of the IFCC in both directions so that information from C-PR could be disseminated to committees and information that committees would like to disseminate to IFCC/National Societies could occur.
11. The display posters will be updated for the future events.
12. Discussion is underway on how C-PR can add value to the IFCC eNews; It was suggested that the PR Committee should focus on particular IFCC Committees and highlight their achievement/activity which could then be published in IFCC Newsletter/Website

The Committee emphasizes the importance of continuous education and proposes to translate the eAcademy webinars into several languages.



C-PR members strongly supported the IFCC during a year that was extremely difficult.

## Committee on Internet and e-Learning (C-leL)

Chaired by Dr Eduardo Freggiaro

The CPD Committee on Internet and eLearning (C-leL) is chaired by Dr Eduardo Freggiaro (AR), who is in his second term.

The pandemic situation slowed down some of the planned activities. The scheduled face-to-face meeting was not possible owing to the cancellation of IFCC Worldlab congress. The committee continued to communicate via WhatsApp.

The committee has 5 members. Deniz Topcu is the current Website Editor and Rojeet Shrestha continued serving as Social Media Coordinator.

1. KNOVIO Platform was abandoned in favour of WorkCast, the webinars platform that was adopted by IFCC
2. New content on eAcademy was mainly provided by the IFCC webinars and the Spanish version of the AACC Pearls. These pearls will be offered in the eAcademy frame according to the terms signed in the MOU.

Current numbers of available educational materials on eAcademy: XXX

3. Umbraco's update:

The CMS of the website was updated again last year. However, the update of the Umbraco version that manage the eAcademy website is still pending. After this version update, website and eAcademy administrations will be unified.

4. Social Media Activities:

The number of followers in Facebook page is XXX. It means that IFCC ranks number 1 in professional societies of clinical chemistry.

IFCC Twitter currently contains 2,318 followers and 904 tweets. LinkedIn account has 2013 followers.

Instagram account has 556 followers and 409 posts.

5. Website activities:

The handover between editors was successfully completed.

Interactive membership map was updated for Peru

Corporate Member logo updates:

Addition: Technogenetics, Stago, Medix\_Biochemica, GenScript, PHC Europe BV

Update: Siemens Healthineers logo updated, PerkinElmer logo and website link updated

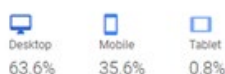
Removal: Agilent, Timedico-Sarstaedt

Continued Activities:

IFCC Information Guide on COVID-19 updates

Dedicated section was created for IFCC Interim Guidelines on COVID-19

In 2021 the top devices for the IFCC website were: desktop (63,6%), mobile (35,6%), Tablet (0,8%)?





The most visited pages were:

- Home page
- IFCC Congresses and Conferences
- Profiles of IFCC Corporate Members
- Education and Management Division (EMD)
- About page
- Resources & Downloads
- Guidelines

In 2021 more than 110 News were published on the homepage

The discussion in 2021 focused on:

- new web technologies for a more User friendly and Mobile friendly experience and for an Explicit eAcademy integration & Social media integration
- the need to find new ideas and features for updating the IFCC App (i.e. interactive clinical cases or clinical scenarios as proposed by C-CLM).

6. The C-leL is exploring the feasibility of an IFCC Virtual Congress and will prepare a proposal.
7. It also plans to liaise with the Committee on Mobile Health and Bioengineering in Laboratory Medicine (C-MHBLM) to explore possible joint ventures (i.e. Big Data on lab medicine, Mobile Apps).

## Working Group on Electronic Journal of the IFCC (WG-eJIFCC)

Chaired by Prof. János Kappelmayer



The Working Group electronic Journal of the IFCC (WG- eJIFCC) is chaired by Dr János Kappelmayer (HU), who began his second term in January 2021.

In 2021, the eJIFCC has been engaged with trying to obtain an Impact factor. There have some challenges in the communication with Clarivate. The submission was re-initiated in May 2021. The journal is now subscribed to Ithenticate.

In Year 2021 111 manuscripts were submitted:

Number of items in one eJIFCC Issue: Highest number: 20; Minimum number: 8; Average number: 12-13

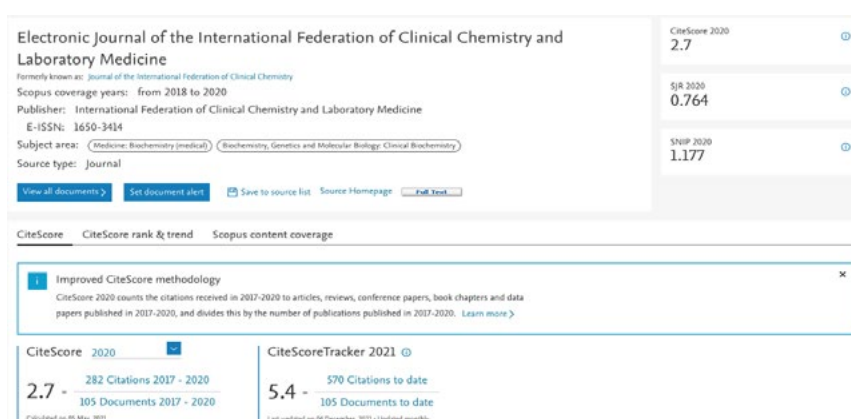
The eJIFCC is published quarterly online. It traditionally consisted mainly of Thematic Issues as the interest to submit free communications was quite low in previous years. By the end of the 6-year period (2012-2017) for the former Editor-in Chief Gábor L. Kovács the number of submissions has started to increase as the eJIFCC appeared on PubMed and later also in the Scopus database. These were not easy achievements and required constant correspondence with the appropriate bodies for years. We are now in a similar process with Clarivate to obtain our first official impact factor.

According to the most recent data, we received 27 submissions in 2022 (January 1-February 25) that means that around 160-200 annual submissions are anticipated for this calendar year. At this high number of submissions, the registration of the articles also requires more attention. In view of this, we proposed to invest in the Editorial Manager program that will be installed this year. It would be easier to follow up and give information to the authors about each decision and processes. Presently, the majority of our submissions are from Asia and Africa and our rejection

rate is quite high between 80-90%. We have had several development plans since managing the journal. One of the investments was the antiplagiarism search program called iThenticate that we are using since February 1, 2021. All incoming manuscripts are pre-checked before going under a review process.

We also maintain the Thematic Issues, Issue-2 2022 will be on COVID-19 diagnostics. However, this is now reduced to 1 or maximum 2 issues per year. The number of published pages has also increased in the past four years and recently exceed 450 pages per year.

**Selected recent scientometric data:** One way to evaluate a journal's quality is by the SNIP score. It ensures contextual cites on impact by 'normalizing' cites on values. It considers immediacy - how quickly a paper is likely to have an impact in a given field. A SNIP value of 1.0 means that a journal's articles are cited at the average rate for all journals in the same subject area; anything over 1.0 indicates more citations than the average in that field while a SNIP of less than 1.0 is below the average. The 2020 SNIP score of the eJIFCC is 1.177, suggesting that it is higher than the average in the field and is in the range of other well-established laboratory journals. In the Scimago evaluation journals are evaluated by quartiles and in this evaluation the eJIFCC first appeared as a Q3 journal in 2019 and improved to a Q2 journal in 2020. The Scopus database evaluates Cite Scores that is the ratio of citations and publications for the same four year period. The eJIFCC first obtained its Cite Score in 2019 at a value of 0.8 that considerably increased in 2020 to 2.7. According to recent citation data it is 5.6 for 2021.



For further information: An overview on the scientometric advancement of the eJIFCC (published by János Kappelmayer, eJIFCC Chief Editor, Harjit Pal Bhattoa, eJIFCC Assistant Editor, Gábor L. Kovács, previous eJIFCC Chief Editor).

In 2021 prof Kappelmayer, the eJIFCC editor-in-chief, started the discussion on purchasing an editorial manager system and hire a part time administrative assistant. Given the great advancements in the editorial area, potential ways for improvement in the layout and in the user experience are in discussion as well.

In 2021 following eJIFCC Issues were published:

### eJIFCC Volume 32 no 1 – 2021 Measurably better healthcare

1. Foreword: Measurably better health care – signs of a (r)evolution in progress towards a new academic science?

**Guest editors: Tim J. James, Ellie Dow**

2. Laboratory medicine and healthcare excellence – till death do us part

**Colleen Strain, Tricia H. Ravalico**

3. Procalcitonin (PCT) level in the emergency department identifies a high-risk cohort for all patients treated for possible sepsis

**Georgia Lucas, Angela Bartolf, Nicholas Kroll, Agampodi-Umanda De Thabrew,**





**Zoya Murtaza, Siddarth Kumar, Abrar Gani, Andrea Annoni, Marie Parsons, Helen Pardoe**

4. Reducing patient risk and enhancing care through the development and implementation of a new chest pain pathway, expedited by and for the COVID-19 era

**Martin P. Than, John W. Pickering, Philip Adamson, Thomas Clendon, Christopher M. Florkowski, John Lainchbury, Jacques Loubser, Alison Nankivel, Sally J. Aldous**

5. Avoiding insufficient therapies and overdosing with co-reporting eGFRs (estimated glomerular filtration rate) for personalized drug therapy and improved outcomes – a simulation of the financial benefits

**Adrian Hoenle, Karin Johanna Haase, Sebastian Maus, Manfred Hofmann, Matthias Orth**

6. The use of faecal haemoglobin in deciding which patients presenting to primary care require further investigation (and how quickly) – the FIT approach

**Judith A. Strachan, Craig Mowat**

7. The Kidney Check program – championing patient-centered, culturally safe, preventive kidney care in Canada’s rural and remote Indigenous communities

**Sarah Curtis, David Collister, Heather Martin, AbdulRazaq Sokoro, Lorraine McLeod, Caroline Chartrand, Barry Lavalley, Cathy Woods, Adeera Levin, Paul Komenda**

8. Is COVID-19 impacting prostate cancer screening? A survey of prostate-specific antigen test requests during a local outbreak

**Anna Ferrari, Fabian Sanchis-Gomar, Camilla Mattiuzzi, Brandon M. Henry, Giuseppe Lippi**

9. Monitoring of diabetic patients with poor glycemic control. Are international recommendations met?

**José Antonio Delgado, Josep Miquel Bauça**

10. Multicenter survey of physicians’ perception of interpretative commenting and reflective testing in Nigeria

**Lucius Chidiebere Imoh, Chinelo Pamela Onyenekwu, Kenn**

11. E-gene RT-PCR crossing point value and other biochemical parameters as useful markers of death risk in COVID-19 patients

**Alba Bellés-Bellés, María Bernal, Javier Gómez-Arbonés, Albert Bernet, Silvia Picó, Jessica Bueno, Carlos Chávez, Mercè García-González, Mercè Ibarz**

12. Diabetic euglycemic ketoacidosis induced by oral antidiabetics type SGLT2i

**Guillermo Velasco de Cos, María Isabel Sánchez-Molina Acosta, María Matilde Toval Fernández**

#### **eJIFCC Volume 32 no°2 - 2021 POCT – making the point**

1. Introducing the eJIFCC special issue on “POCT – making the point”

**Guest editors: Sergio Bernardini**

2. Controlling reliability, interoperability and security of mobile health solutions

**Damien Gruson**

3. Best laboratory practices regarding POCT in different settings (hospital and outside the hospital)

**Adil I. Khan**

4. POCT accreditation ISO 15189 and ISO 22870: making the point

**Paloma Oliver, Pilar Fernandez-Calle, Antonio Buno**

5. Utilizing point-of-care testing to optimize patient care

**James H. Nichols**

6. POCT: an inherently ideal tool in pediatric laboratory medicine

**Siobhan Wilson, Mary Kathryn Bohn, Khosrow Adeli**

7. Point of care testing of serum electrolytes and lactate in sick children

**Aashima Dabas, Shipra Agrawal, Vernika Tyagi, Shikha Sharma, Vandana Rastogi,**



**Urmila Jhamb, Pradeep**

8. Training and competency strategies for point-of-care testing

**Sedef Yenice**

9. Leading POCT networks: operating POCT programs across multiple sites involving vast geographical areas and rural communities

**Edward W. Randell, Vinita Thakur**

10. Connectivity strategies in managing a POCT service

**Rajiv Erasmus, Sumedha Sahni, Rania El-Sharkawy**

11. POCT in developing countries

**Prasenjit Mitra, Praveen Sharma**

12. How could POCT be a useful tool for migrant and refugee health?

**Sergio Bernardini, Massimo Pieri, Marco Ciotti**

13. Direct to consumer laboratory testing (DTCT) – opportunities and concerns

**Matthias Orth**

14. Clinical assessment of the DiaSorin LIAISON SARS-CoV-2 Ag chemiluminescence immunoassay

**Gian Luca Salvagno, Gianluca Gianfilippi, Giacomo Fiorio, Laura Pighi, Simone De Nitto, Brandon M. Henry, Giuseppe Lippi**

15. Lessons learned from the COVID-19 pandemic: emphasizing the emerging role and perspectives from artificial intelligence, mobile health, and digital laboratory medicine

**Pradeep Kumar Dabla, Damien Gruson, Bernard Gouget, Sergio Bernardini, Evgenija Homsak**

16. Catering for the point-of-care testing explosion

**Adil I. Khan, Mazeeya Khan, Rosy Tirimacco**

17. Predictive model of severity in SARS CoV-2 patients at hospital admission using blood-related parameters

**Laura Criado Gómez, Santiago Villanueva Curto, Maria Belén Pérez Sebastian, Begoña Fernández Jiménez, Melisa Duque Duniol**

18. Clinicians' Probability Calculator to convert pre-test to post-test probability of SARS-CoV-2 infection based on method validation from each laboratory

**Zoe Brooks, Saswati Das, Tom Pliura**

19. Prevalence of aminotransferase macroenzymes in rheumatoid arthritis patients and impact on their management

**Maja Šimac, Daniel Victor Šimac, Lidija Bilić-Zulle**

20. Malignant hyperthermia syndrome: a clinical case report

**Isabel Sánchez-Molina Acosta, Guillermo Velasco de Cos, Matilde Toval Fernández**

**eJIFCC Volume 32 no°3 – 2021- Focusing on POCT**

1. Foreword from the editor-in-chief

**János Kappelmayer**

2. Identifying and reducing errors in point-of-care testing

**Julie L. V. Shaw**

3. Professional certification in point-of-care testing

**T. Scott Isbell, Elaine Colwell, Elizabeth L. Frank, Brad S. Karon, Veronica Luzzi, Lou Ann Wyer**

4. Public health education should include point-of-care testing: lessons learned from the COVID-19 pandemic

**Gerald J. Kost**

5. Synergy between point-of-care testing and laboratory consolidations

**Tommaso Trenti**

6. Cardiac biomarkers in COVID-19: a narrative review

**Giuseppe Lippi, Fabian Sanchis-Gomar, Brandon Michael Henry, Carl J. Lavie**



7. Circulating microRNA-126 as an independent risk predictor of coronary artery disease: a case-control study  
**Wahid Ali, Sridhar Mishra, Aliya Rizvi, Akshaaya Pradhan, Marco A. Perrone**
8. A combined analysis of serum Growth Differentiation Factor-15 and Cancer Antigen 15-3 enhances the diagnostic efficiency in breast cancer  
**Anupama Modi, Purvi Purohit, Ashita Gadwal, Dipayan Roy, Sujoy Fernandes, Jeewan Ram Vishnoi, Puneet Pareek, Poonam Elhence, Sanjeev Misra, Praveen Sharma**
9. Algorithm for reporting discrepant HbA1c result and troubleshooting a case of false low HbA1c  
**Vivek Pant, Abha Shrestha, Devish Pyakurel, Keyoor Gautam, Santosh Pradhan**
10. A puffy child – a rare case of steroid resistant nephrotic syndrome with ANLN mutation  
**Sangeetha Geminiganesan, Swathi Ganesan, Jaippreetha Jayaraj, Barathi G, Muthu Kumar S, Nandha K Samy**
11. Hope injections: the promises of regenerative medicine in curing type 1 diabetes mellitus  
**Nina Maria Fanaropoulou**

#### **eJIFCC Volume 32 no 4 - 2021**

1. 1 An overview on the scientometric advancement of the eJIFCC  
**János Kappelmayer, Harjit Pal Bhattoa, Gábor L. Kovács**
2. Call for manuscript submissions for a thematic eJIFCC issue on “Laboratory aspects of COVID-19 disease”  
**Béla Nagy Jr.**
3. The detection of hyaline casts in patients without renal dysfunction suggests increased plasma BNP  
**Elisa Shikata, Ryosuke Hattori, Mitsuo Hara, Tomohiro Nakayama**
4. Ups and downs of COVID-19: can we predict the future? Local analysis with Google Trends for forecasting the burden of COVID-19 in Pakistan  
**Sibtain Ahmed, Muhammad Abbas Abid, Maria Helena Santos de Oliveira, Zeeshan Ansar Ahmed, Ayra Siddiqui, Imran Siddiqui, Lena Jafri, Giuseppe Lippi**
5. Profiling of lactate dehydrogenase isoenzymes in COVID-19 disease  
**Erika Dzsudzsák, Renáta Sütő, Marianna Pócsi, Miklós Fagyas, Zoltán Szentkereszty, Béla Nagy Jr.**
6. Is it true hypoparathyroidism? A root cause analysis of unusually low Intact Parathyroid Hormone (iPTH) at a clinical laboratory  
**Sibtain Ahmed, Lena Jafri, Syed Muhammad Akhtar Shah, Nasreen Bano, Imran Siddiqui**
7. The detection of postprandial hypoglycemia with 5-hour oral glucose tolerance test  
**Vivek Pant, Safala Mathema, Sandeep Jha, Sujay Dutta Paudel, Suman Baral**
8. Impact of a novel strategy for critical values communication for the management of patients treated with clozapine  
**Ruth Cano-Corres, Siddarta Acebillo, Francesc Campos Barreda, Diego J. Palao, Eugenio Berlanga-Escalera**
9. Asymptomatic hypernatremia in an infant with midline defects  
**Sangeetha Geminiganesan, Padmasani Venkat Ramanan, Dhivyalakshmi J., Bhogavalli Lakshmi Harshita, Deepalakshmi Sriram**

## Working Group on IFCC News (WG-eNews)

Chaired by Dr. Katherina Psarra



The Working Group eNews is chaired by Dr Katherina Psarra (GR), who completed her first term in December 2021.

In 2021 the eNews was confirmed as a very successful communication tool with a big number of contributions received and published. Even throughout the pandemic situation the IFCC members and officers kept sending their contributions, sharing their experiences and communicating their initiatives through the eNews. The eNews is published on the IFCC website. The eNews sections in 2021 were confirmed as follows:

- Editorial
- IFCC president's message
- The voice of IFCC
- IFCC: the people
- IFCC: the young scientists
- Contributions to the IFCC eNews
- News from regional federations and national societies
- New IFCC members
- IFCC's calendar of congresses, conferences and events

January -February 2021: regular content with news from many national societies (Japan, Malawi, COLABIOCLI, Malaysia, Hungary, Croatia, Russia), UNIVANTS

March: regular content. The year ahead in the vaccine purgatory B. Gouget

April: regular content / Vaccination: the way out!

May: regular content / lab quality/ Coronavirus vaccine passports: a giant puzzle!

June: regular content / UNIVANTS

July – August: regular content / Dogs sniff out COVID-19 infections/ UNIVANTS

September 2021: regular content / message from the IFCC president / dr Gouget's COVID The unbearable summer with Delta

October 2021: regular content / message from the IFCC president / How participation in the C-CMBC course influences/d his career

November 2021: less content / message from the IFCC president

December 2021: normal content / message from the IFCC president/ news from many societies stressing the importance of the job during the pandemic (Syria, Serbia, Colabiocli, Israel, Spain) The potential issue about a lack of congress news articles because of the pandemic did not emerge because many reports were submitted from virtual events. In every issue there were news items from the Spanish speaking countries and a lot of energy was conveyed through all these reports.

There was a discussion about whether we should accept “scientific articles” by commercial companies without payment of advertisements and it was decided against.

The Working group organized two meetings with a very reduced participation. Furthermore, very few members responded when asked to write something about their societies for the first newsletter of 2022. Therefore a renewal of the membership will be considered.



## Relationship with LabMedica International

Communication has slightly improved but we usually receive their requests at the last minute. This aspect needs to be improved.

eNews in the EFLM IFCC Corner

The “corner” on the EFLM newsletter (Editorial, IFCC President’s message, social media) takes up relatively small space, however, the solution is to add links to the full article to provide excellent access to the full content.

## Working Group - Spanish (Ibero-american) Nomenclature and Translations

Chaired by Dr Raul Girardi

The Working Group continued its activities under the Chairmanship of Dr Raúl Girardi.

### The objectives of the WG-IANT are to:

1. Spread the activities of the group
2. Disseminate the activities of the IFCC
3. Participate in IFCC activities

### WG-IANT activities:

- The annual meetings were held virtually: the second meeting of the year 2021, initially scheduled in person for the EuroMedLab 2021 congress in Munich was moved to this year.
- Participation of members of the WG-IANT in the National Association of Clinical Laboratorians of Panama.
- Participation of R. Girardi as Chair of the WG-IANT in 2021 IFCC Live Webinar: “Metrology and Clinical Laboratory”.



### RIA website:

Objectives:

1. Continuous update of information provided in the webpages
2. Publication of scientific information of interest
3. Deletion of outdated or obsolete information

Activities related to the RIA Web Page

- Publication of translations with permission of Prof. Khosrow Adeli of the IFCC Information Guide on COVID-19
- Publication of the first Spanish version of AACC COVID-19 Pearl of Laboratory Medicine
- Publication of the official translation documents of the International Vocabulary of Metrology (VIM) and the International System of Units (SI) of the BIPM,
- Publication of the Coding of Laboratory Tests with Systematic Nomenclature in Spanish.
- Publication of the CECAN Special Cytochemical Stains Manual, Dr. Miguel Dorantes Mesa State Cancer Center.
- A video was published with the words of Dr. Ana Rodriguez on The Importance of the Clinical Biochemist in the Pandemic in the framework of the Quality week sponsored by COLABIOCLI.
- Promotion of scientific activities related to IFCC:
  - IFCC Free Live Webinar on COVID-19 Guidelines on Molecular, Serological and Biochemical/Hematological Testing - 23 September, 2020
  - IFCC Free Live Webinar on Advancing Internal and External Quality Assurance on

Global Scale - 15th October 2020

- SEQC-ML Scholarship – COLABIOCLI
- IFCC Free Live Webinar on “Expanding Newborn Screening Globally: Reducing Infant Mortality Through Early Diagnosis”
- XXV Congress of the LATIN AMERICAN CONFEDERATION OF CLINICAL BIOCHEMISTRY, COLABIOCLI, POLIFORUM LEÓN of the City of León, Guanajuato. March 30 to April 2
- Virtual Lab Congress 2021



### **DIV scientific publication**

Objectives:

1. Continue the 3 annual publications.
2. Offer more scientific content

Activities related to DIV scientific publication:

- The publication schedule for the months of February, June and October was met. Issues 15 to 20 of the magazine were published
- The layout of the magazine was maintained:

Cover: no change

Editorial: an attempt is made to give a less colloquial sense with opinions or comments on the reality of biochemistry in Iberoamerica.

News and Novelties regarding the profession of Laboratory Medicine: an attempt is made to reduce the number of this type of articles and to reduce their size by adjusting them to the regulations of the journal.

Research Articles: articles of different origin were published

- a. Originals by Ibero-American authors: 85%
- b. Assigned with permission by other publications in Spanish: 15%
- c. Translations of other IFCC publications with permission of the court: not necessary

Letters to the editor: those with comments of a scientific nature were privileged.

IFCC Young Scientists Section: The section had to be discontinued due to lack of collaboration from those responsible for the IFCC Task Force - Young Scientists in Lab Medicine.

Interviews: interviews with personalities related to the IFCC were privileged

Back cover: update of the data of its members. They were asked for a letter of endorsement from the Scientific Society they represent and permission to use their logo.

- The format of access to the publication on the website was changed without modifying the budget:

pdf format: You can review or download the complete publication or download it in sections, thus making it easier to read, being a system more in line with electronic devices.

FLIP format: without modification.

Introductory text: an introductory text was added similar to other publications to introduce the issue.

The content is more technical and scientific, reducing the amount and space occupied by other sessions. More descriptive and detailed articles were published in their scientific content, which increased the number of pages in some numbers that were necessary, but this did not increase the cost of publication.

Most of the items come from Spain, Argentina, Mexico, Colombia and Ecuador. We work with the representatives of each country to insist on stimulating the publication



## Corporate Member Activities

The TF-CM has been working on preparing a “welcome” package for new IFCC Corporate members as well as focussing on social media communication. Tricia Ravalico also leads the UNIVANTS of Healthcare Excellence program for Abbott in which IFCC has been a partner. A special video montage featuring congratulatory messages from all over the world was prepared for future winners of the UNIVANTS of Healthcare Excellence award. Tricia Ravalico also worked with Rojeet Shreshtha to draft the creative brief for the IFCC Global Lab week.

*Tahir Pillay CPD Chair*

## EMERGING TECHNOLOGIES DIVISION (ETD)

The ETD is an IFCC functional unit responsible for identifying and assessing emerging technologies and for translating the emerging and disruptive diagnostic and data analysis procedures from academic laboratories to clinical laboratories and from clinical laboratories to market.

The ETD Responsibilities are: defining for each ET the clinical needs and criteria of education of specialists in Laboratory Medicine and caregivers; defining for ET the appropriate infrastructure and laboratory organization; defining for each ET pre-analytical, analytical and post-analytical processes necessary for clinical laboratory applications; defining for each ET quality programs and certifications required to meet criteria for accreditation up to ISO15189 standard; assess the clinical value of each test with regard to addressing unmet clinical need.

### Division Membership and Organisation

In 2021 the ETD commenced its fourth year of operation and many of the Executive commenced their second term servicing the IFCC ETD. At the end of 2021 the ETD in total is composed by 76 members from 30 countries (Figure 1). All communication and meetings continued to be conducted electronically during 2021 due to the COVID-19 pandemic with each functional unit meeting at least once during 2021.

#### ETD Executive Committee (ETD-EC)

The Executive Committee consisted of the following members: Sergio Bernardini (Chair), Paolo Fortina (US) (Vice-Chair), Ronda Graves (AU) (Secretary), Damien Gruson (BE) (member), Markus Roessler (DE) and Peng Yin (CHN) (corporate members). Four consultants: Maurizio Ferrari (IT), Larry Kricka (US), Jason Park (US) and Helen Martin (AU). We also welcomed Stephen Hill (CA) into the new position of Executive Board Liaison during the year.

The Executive met twice during 2021 via Zoom to work on projects and continue to develop strategic plans and support the ETD committees and working groups' productivity. Application to the Executive Board (EB) was successfully made to include a new Working Group on Metabolomics Translation. The working group on Volatolomics finished at the end of 2021 at the recommendation of its Chair Dr Larry Kricka who indicated that their work was concluded under their original terms of reference (TOR) and the technology currently was not progressing to translation into broad clinical practice. The work generated from this working group is published on the IFCC website as an ongoing resource. Unfortunately, the Committee for Omics Translation was disbanded in 2021 following the resignation of its Chair Dr Gregory Tsongalis and the inability to find a suitable replacement chair. During this transition period, the ET Executive reflected on the TOR and felt it was too broad. This led to the decision to focus efforts and establish a new Working Group on Metabolomics Translation late in 2021.

### ETD Committees

#### 1. Committee on Emerging Technologies in Pediatric Laboratory Medicine (C-ETPLM).

The committee is chaired by Dr Tim Lang (UK), with five full committee members, two

consultants, one ETD liaison and 16 corresponding members, including membership from developed and developing economies. The major achievement for the committee was the successful delivery of the International Congress of Pediatric Laboratory Medicine (ICPLM) in 2021.

**2. Committee on Mobile Health and Bioengineering in Laboratory Medicine (C-MBHLM).**

This committee is chaired by Dr Bernard Gouget (FR), with four full committee members, one ETD liaison and ten corresponding members, including corporate and young scientist membership. This committee continues to have significant outputs via newsletters and social media during 2021.

**ETD Working Groups**

1. Guidance for the Implementation of Custom-made Genomic Panels (WG-GCP) chaired by Dr Jennifer Morrissette.
2. Volatolomics (WG-Vol) chaired by Dr Larry Kricka.
3. Artificial Intelligence and Genomic Diagnostics (WG-AIGD) - chaired by Dr Larry Kricka.
4. Single Cell and Spatial Transcriptomics (WG-SCST) chaired by Dr Andrew South
5. Metabolomics (WG-M) chaired by Dr Elie Flux

**IFCC Office**

The ETD Executive wishes to acknowledge and thank Mrs Silvia Colli-Lanzi for her attention to detail and support throughout 2021.

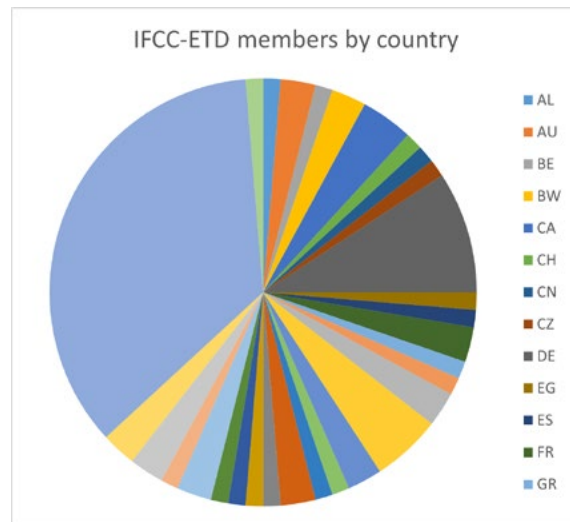


Figure 1: The ETD in 2021 incorporated representatives from 30 countries with the largest representation from the US and Germany.

**2021 Achievements and Outputs**

This section provides the record of projects and outputs for the Division’s Committees and Working Groups

**Partnerships and Collaborations**

The partnership agreement with the **Healthcare Information and Management Systems Society, Inc. (HIMSS)** was signed in 2021. The purpose of this Agreement between the IFCC-ETD and HIMSS Europe is to partner on innovation exchange for the purposes of education opportunities. (HIMSS) is a global advisor and thought leader supporting the transformation





of the health ecosystem through information and technology. As a mission-driven non-profit, HIMSS offers a unique depth and breadth of expertise in health innovation, public policy, workforce development, research, and analytics to advise global leaders, stakeholders, and influencers on best practices in health information and technology. Damien Gruson is the liaison with HIMSS. The initial aim is to organize a joint conference in 2022/2023 (COVID considerations dependent).

The C-ETPLM collaborated with the **Society for the Study of Inborn Errors of Metabolism** (SSIEM) and the **International Society for Newborn Screening** (ISNS) to conduct a survey on COVID impact on Paediatric Laboratory Medicine. This survey is planned for publication in 2022. In addition, the SSIEM supported the International Congress in Pediatric Laboratory Medicine through the provision of scholarships for registrations.

There is a continuing contribution from the **European Society for Pediatric Endocrinology** (ESPE) and the **German Society of Pediatric Endocrinology** corresponding members on the C-ETPLM. This collaboration is concerning activities related to laboratory diagnosis and monitoring for disorders of sex development. This is a joint project with clinical and translational research experts. The initial proposal letter and discussions with ESPE by Prof Stefan Wudy and A/Prof Ronda Greaves to further additional collaborations have not progressed with the ESPE council.

The **European Federation of Clinical Chemistry and Laboratory Medicine** (EFLM) Science Committee and SD leadership agreed there should be close liaison and communication between the two groups. The purpose is to share information on activities and look for areas of mutual interest. Professor Eric Kilpatrick is the EFLM SC chair.

The ETD collaborates with the **Communication and Publication Division** (Chair: Tahir Pillay) to organise surveys, promote its activities, and deliver webinars. The ETD has looked to develop and share projects proposals and information with the Scientific Division (SD) (Chair: Philippe Gillery) during 2021. There was the potential to develop a joint project between the C-ETPLM and the SD on neonatal bilirubin standardisation during 2021. The purpose is to share information on activities and look for areas of mutual interest avoiding overlaps and by working in synergy.

#### **Congresses and Conferences organised during 2020 and expected in 2021**

1. ETD-Exec - IFCC Global Conference on COVID-19 , February 15th : **“Emerging tools in fighting Covid-19”**- symposium n. 2 and “Emerging Tools in Fighting COVID-19”- symposium n.10.
2. C-MHBLM - IFCC Global conference on COVID 19 -Feb 2021. Symposium 2: Emerging tool in fighting Covid 19
3. C-MHBLM - 8th International Symposium « Critical care testing and blood gases » Biarritz – June 10-11th, 2021 IFCC session : Innovative technologies in Critical care testing
4. C-ETPLM - Joint IFCC C-ETPLM/AACC PMF Scientific Session 1.5 Hour Session titled, “Case Studies in the Use of Emerging Technologies in Pediatric Laboratory Medicine” at 2021 AACC Annual Scientific Meeting
5. ETD-Exec - Ronda Greaves presented Emerging Technologies in Laboratory Medicine: One size does not fit all. International Conference on Laboratory Medicine “The Ethics of Quality and Artificial Intelligence in Laboratory Medicine” Padua, Italy - September 23rd 2021
6. ETD-Exec - Ronda Greaves presented Metabolomics in Laboratory Medicine. Virtual Lab 2021. Fundación Bioquímica 4to. Congreso Virtual de Bioquímica Clínica”. 13th November 2021.
7. C-ETPLM - The XV ICPLM was conducted virtually over two days meeting on 26th and 27th November 2021. Abstracts from this meeting were published in the Journal of Laboratory Medicine.

## Publications

1. Emerging technologies in paediatric laboratory medicine. **C. Mak, I. Papassotiriou, J. Zierk, K. P. Kohse, R. F. Greaves, S. M. D. Geaghan**, et al. Journal of Laboratory Medicine 2021 Vol. 45 Issue 6 Pages 245-248. DOI: doi:10.1515/labmed-2021-0097. <https://doi.org/10.1515/labmed-2021-0097>
2. Detection of Vitamin D Metabolites in Breast Milk: Perspectives and challenges for measurement by Liquid Chromatography Tandem-Mass Spectrometry. C. Tuddenham, **R. F. Greaves**, A. E. Rajapaksa, J. D. Wark and R. Zakaria. Clin Biochem 2021. Accession Number: 34419456 DOI: 10.1016/j.clinbiochem.2021.08.003
3. Newborn bloodspot screening in the time of COVID-19. **R. F. Greaves**, J. Pitt, C. McGregor, M. Wall and J. Christodoulou. Genet Med 2021 Vol. 23 Issue 6 Pages 1143-1150. Accession Number: 33442021 PMID: PMC7804212 DOI: 10.1038/s41436-020-01086-6. [https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7804212/pdf/41436\\_2020\\_Article\\_1086.pdf](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7804212/pdf/41436_2020_Article_1086.pdf)
4. Serum Amyloid A Protein as a useful biomarker to predict COVID-19 patients severity and prognosis. Pieri, M. Ciotti, M. Nuccetelli, MA Perrone, MT Cali, MS Lia, M. Minieri, **S. Bernardini**. International Immunopharmacology 95 (2021) 107512.
5. Clinical validation of a second generation anti-SARS-CoV-2 IgG and IgM automated chemiluminescent immunoassay. Pieri, M. Nuccetelli, E. Nicolai, S. Sarubbi, S. Grelli, **S. Bernardini**. Journal of Medical Virology 2021;93:2523–2528.
6. NGS in more labs? IFCC group aims to ease the way. Interview to Dr. **Jennifer Morrisette**, IFCC working group chair. CAP Today
7. Digital Diagnostics and Mobile Health in Laboratory Medicine: an IFCC-C-MHBLM Survey on Current Practice and Future Perspectives **Frank Desiere**, Katarzyna Kowalik, Christian Fassbind, Ramy Samir Assaad, Anna K. Füzéry, **Damien Gruson**, Michael Heydlauf, Kazuhiko Kotani, **James H. Nichols**, Zihni Onur Uygun, and **Bernard Gouget**. The Journal of Applied Laboratory Medicine
8. Current and emerging technologies for the timely screening and diagnosis of neonatal jaundice. Mercy Thomas, **Ronda F. Greaves**, David Tingay, **Tze Ping Loh**, Vera Ignjatovic, Fiona Newall, Michelle Oeum, Mai Thi Chi Tran, and Anushi E. Rajapaksa. Critical Reviews in Clinical Laboratories Sciences. Accepted for publication January 2022

## IFCC eNews publications

The C-MHBLM has continued to regularly publish in the IFCC eNews during 2021 (Table 1).

Table 1: eNews publications from ETD-C-MHBLM for 2021.

Volume e-News	Title	Authors
1-2 ; Jan-Feb pp 30-32	The year ahead in the vaccine purgatory	B.Gouget
1-2 ; Jan-Feb pp 30-32	"COVID-19 Biomarkers and Lab Medicine" A French-speaking medical biologists network ;	M-C Beauvieux , A M Bérard , I Aimone-Gastin , F Barbé , Y Barguil , D Collin-Chavagnac , H Delacour , C Delevallée , V Nivet-Antoine , K Peoc'h , C Poupon , F. Schmitt, B Perreira , L Piéronil, V Sapin , B Gouget
4 ; April pp19-21	Vaccination: the way out!	B.Gouget
4 ; April pp 33-35	Tackling the pandemic crisis in Overseas France	Y. Barguil , M.C. Beauvieux , A.M. Bérard, V. Sapin, B. Gouget
5 ; May pp 30-32	Coronavirus vaccine passports : a giant puzzle !	B.Gouget
5 ; May pp21-22	Obituary: Professor Claude Dreux (April 2nd 1929 - March 16th 2021)	B. Gouget
5 ; May pp 6-8	C-MHBLM: succeeding in the AI new reality in lab medicine	B. Gouget, P. K. Dabla, D.Gruson, S.Bernardini
7 ; September In press	Surfing on the wave of POCT innovations and m-Health in Biarritz (FR)	B.Gouget, Ch Aussel, M Vaubourdolle
7 ; September In press	A Summer with Delta variant	B.Gouget

*Sergio Bernardini ETD Chair and Ronda Graves ETD Secretary*



## TASK FORCES

### Task Force on Ethics (TF-E)

#### Achievements during 2021:

1. A webinar on relevant topics on Ethics was done during pandemic titled
  - “Ethical dilemmas in laboratory medicine during pandemic”. October 2021
  - Some unique ethical challenges arising from clinical practice with Australia’s remote-dwelling Aboriginal people. Dr. Richard Davey
  - Ethical concerns and requirements regarding the use of COVID-19 diagnostic samples for research. Dr. Federico Remes Lenicov
  - Addressing Health Disparities Highlighted by the COVID-19 Pandemic Dr. Joe Wiencek
2. An IFCC code of Ethics for Laboratory Medicine professionals was written by TF-E members and edited and approved by the EB.
3. A brief article about IFCC code of Ethics for Laboratory Medicine professionals was prepared and published in IFCC eNews.
4. The Toolkit was revised and updated to be uploaded to IFCC website. An improvement for making it more useful was considered

#### Proposal of activities 2022 -2023

1. To prepare and edit 2022-2023 webinars on relevant topics on Ethics during pandemic.
2. To propose IFCC Code of Ethics as a requirement for National Societies to be IFCC Member.
3. To prepare recommendations on relevant topics on Ethics such to be published in journals of interest for Laboratory Medicine professionals.
4. To create an Independent Assessor Committee with objectives and functions similar to an IBR as an additional activity of TF-E
5. To collaborate with a new Task Force on Outcome Studies in Laboratory Medicine (TF-OSLM) focused on the impact of Lab Medicine on patients ‘healthcare.
6. To participate in IFCC General Conference and Congresses
7. To revise and update permanently the Toolkit to be uploaded to TF-E IFCC website
8. To prepare notes for spreading TF-E activities in IFCC eNews.
9. To collect Documents stratified by organization on COI, code of ethics & relationship with industry were incorporated. Committee members will approach organizations in their region to solicit more documents (partially done).
10. To held zoom meetings with FM, CM and consultants and authorities.

*Nilda Fink - TF-E Chair*

### Task Force for Young Scientists (TF-YS)

#### I. TF-YS educational sessions & networking:

- 1st. International Convention of Laboratory Medicine COINCIDELABC. “Actualización Continua de Jóvenes en Medicina del Laboratorio”. Virtual congress, México, January 22, 2021.
- IFCC TF-YS online session during IFCC virtual conference - Critical role of clinical laboratories in COVID-19 pandemic. February 2021.
- 1st EFLM/AFCB Conference “Laboratory Medicine for Mobile Societies” XXXIVth National Days of Clinical Biology - Symposium: IFCC Young Scientists Task force Session “Young scientists confronting COVID-19 pandemic”. Lecture: “Young scientists’ opportunities during COVID-19 pandemic”. Virtual Congress, Tunisia, February 18 – 20, 2021.

- 1 SEMANA LATINOAMERICA DE LA CALIDAD EN SALUD. Virtual conference. Mexico, April 6-8, 2021.
- EFLM YS-TF Kick off meeting. June 15, 2021
- ALAM Congress and Paraguay National Congress. IFCC Young Scientist Task Force. Virtual congress. Paraguay, August 25-28, 2021
- COLABIOCLI Conversatorio: Los jóvenes profesionales del laboratorio clínico los desafíos a partir del COVID-19. October 5, 2021.
- COLABIOCLI Conversatorio: Liderazgo y desarrollo sostenible de los laboratorios clínicos y el papel de los jóvenes profesionales. October 28, 2021.
- TF-YS Functional meeting at EUROMEDLAB. Munich, November 29, 2021.
- TF-YS + EFLM YS group + German YS group: Joint session at EUROMEDLAB. Munich, November 29, 2021.
- EUROMEDLAB at Munich. IFCC TF-YS symposium: Motivation in the Clinical Laboratory - Santiago Fares Taie (ARG); Time Management Tools for the Young Laboratory Professional - Joe El-Khoury (USA); Basic Principles of Sample and Data Management - Giulia Sancesario (IT); Conflict Management amongst Young Laboratory Scientists - Ashlin Rampul (ZAF). December 3, 2021.
- 47th Annual Conference of Association of Clinical Biochemists of India (ACBICON2021). IFCC TF-YS: "Role of Laboratory Medicine in Emerging and Re-emerging Infections". Virtual conference, India December 13th 15th, 2021
- Young Scientist Session at CALILAB 2021, Argentina. POSTPONED

## II. Webinar Series

On June 10th 2021, the TF-YS conducted the webinar titled "Emerging Clinical Mass Spectrometry Applications". For this webinar we had 1,695 registrants and 883 attendees.



**Moderator**

**Dr. Joe El-Khoury**  
Clinical Chemistry, Yale-New Haven Health, USA

Evolution of Mass Spectrometry: from the bench to bedside

**Dr. Paul Janetto**  
Mayo Clinic, Rochester, MN, USA

Implementation of Automated LC-MS in 24/7 diagnostics

**Prof. Rainer Lehman**  
University Hospital Tübingen, Germany

Mass Spectrometry for detection of COVID-19: an alternative to PCR.

**Dr. Katleen Van Uytvanghe**  
Ghent University, Belgium

Emerging Applications of Mass Spec for Analysis of Volatile Compounds in Breath

**Dr. Ilaria Belluomo**  
Imperial College London, UK



For this webinar we gained an unrestricted grant of EUR 5,000 from Thermo Fischer.

## III. Mentorship programme Interviews

Two mentorship programmes interview were published on the IFCC e-news during this period.

## IV. Lab-Surfing

Lab-Surfing is a Laboratory professional social media designed and created in order to fulfil the objectives of IFCC-TFYS & unattended needs of Young Scientists (YS) globally. In a continuing evolving Laboratory Medicine profession with new technologies and methods every year, YS find exchange programmes and communication essential to widen their horizons and sharpen the laboratory skills.

## V. Capillary programme

This programme intend to increase the participation of TFYS corresponding members during national meetings. It is an initiative of Dr Giulia Sancesario in her plan for the TFYS.

We conducted a Survey to all corresponding members to improve participation and better understanding of the TF-YS activities and support.

#### **VI. EI Microscopio**

Active participation in the selection of interviews and creation of questions for the different topics.

#### **VII. Professional Scientific Exchange Programme (PSEP).**

We promoted the PSEP in lectures and social media. Due to travel restrictions this programme is not active.

#### **VIII. YS Worldwide Survey**

Dr. Claudia Imperiali is coordinating the YS Survey to dilucidated the differences among careers around the world. This is an ambitious project that will include answers from the 5 continents. The results will be published in IFCC Journal.

#### **IX. Social Media**

Dr Ashlin Rampul and Dr. Intan Wibawanti Masfufa will focus on social media: Facebook, Instagram, Twitter to improve visibility and information about the projects that are been promoted by the IFCC TF-YS.

Today we interact via Whatsapp, Instagram, Google Groups mailing lists, Lab-Surfing.com and Facebook page.

#### **X. Leadership Workshop for YS of Latin America**

Promote the development of a critical mass of young leaders, with leadership skills and strategic planning of projects with social impact.

The Workshop concluded successfully with the participation of 20 YS from Latin America. After this workshop, the COLABIOLCI YS-TF was created to attend the needs of the region. Similar trends initiated in Africa, North America and Europe.

*Santiago Fares Taie - Chair IFCC-TF-YS  
Giulia Sancesario - Co-Chair IFCC-TF-YS*

### **Task Force History (TF-H)**

The IFCC Milestones 2002-2020, co-writing with Prof. Mathias M Muller, IFCC President 2000-2005, are designed to be both sufficiently comprehensive but also practical for those interested in more of the history and rationale of IFCC. The different chapters can help readers deepen their understanding on evolution of the leading organization in the field of lab medicine. The chapters offer quick summaries on the activities and research since the beginning of the millennium and provide a list of potentially useful educational and assessment resources.

The IFCC Milestones are also an opportunity to celebrate the inspirational specialists in lab medicine all over the world who are working on a voluntary basis in the IFCC functional units. Together, with the dynamic millennium generation, they have bright ideas that might not make front-page news but they are providing fundamental knowledge on the biological diagnosis, improving clinical decision making and ultimately will end up saving lives.

Milestones will need to be reviewed and refined over time. All of the activities described reflects the achievements of the IFCC from the “on-the-ground” experience. The cross-checking of the information, rigorous evaluation, and analysis of the outcomes of the functional units can be useful tools to enable in shaping the future IFCC strategy in a broadened perspective.



*Mathias M. Müller and Bernard Gouget, TF-H Chairs*

## Task Force Corporate Members (TF-CM)

The aim of IFCC TF-CM is to enable Corporate Members to make significant and growing contributions to the activities of IFCC, and to elevate key topics and priorities for the betterment of industry collaborations, laboratory medicine and health care. Specific objectives include:

- Assisting IFCC in promotion of science, innovation, and advancement of the essential contribution of laboratory medicine to health care
- Facilitating discussion among Corporate Members and identify common topics of interest and/or concern
- Improving the engagement of Corporate Members with the IFCC
- Serving as the “voice of industry” and be more accessible to all IFCC teams and leadership, enabling a more diverse understanding and appreciation of needs among corporate members and the IFCC
- Increasing awareness with other Corporate Members of IFCC TF-CM and to encourage their participation in IFCC activities

### Meetings held:

Eleven virtual meetings were held in 2021 between January 8th and December 21st with a monthly cadence of interactive exchanges. No in-person meetings were held in 2021 due to the COVID-19 pandemic and associated conference cancellations/delays.

### Topics Focused on in 2021:

- Expanding and enhancing active corporate membership
  - >75% attendance across all monthly meetings; each more than doubling the active engagement from 2020
  - Fourteen companies are now represented through year-end with full and/or corresponding membership
- Setting expectations for new and renewed corporate representatives
  - Developed an instructional guide for new and renewing members to be launched as a welcome package in Q1 2022.
  - Developed multiple surveys including an assessment of top IFCC benefits for corporate members.
- Understanding and communicating the needs of corporate members, enabling enhanced recognition for valued contributions
  - Cultivation and implementation of an industry-led scientific workshop at the virtual COVID-19 Congress
  - Development of appreciation certificates to companies with continued IFCC sponsorship and to corporate representations for their valued support

### Topics planned for 2022:

- Meeting Effectiveness – Advancing science and maximizing partnerships following lessons learned from the COVID-19 pandemic.
- Asset Activation – Successful implementation and launch of the 2021 programs/deliverables to achieve target objectives
- Advancing Laboratory Medicine – Ideation and implementation of new ideas to further excellence in health care.

### Meetings Planned for 2022:

Virtual meetings will resume monthly, effective January 2022 with at least 2 face to face meetings planned in 2022, pending COVID-19 travel limitations.

*Tricia Ravalico, TF-CM Chair*



## Task Force on COVID-19

### Background

The leading objectives of this TF encompass the provision of regular updates on epidemiology, pathogenesis and laboratory diagnostics of COVID-19, the development of practical recommendations for harmonizing the use of diagnostic tests for COVID-19 and biosafety measures for managing the specimens, as well as the organization of international studies to improve the knowledge on pathogenesis, diagnostics and therapeutic management of COVID-19

### Educational sessions, workshop, functional meeting conducted:

- IFCC Global Conference on COVID-19. Virtual Meeting, 15-17 February 2021.
- IFCC guidelines on molecular diagnostic testing of SARS-Cov-2 viral infection. 6th Annual Academic Session of the College of Chemical Pathologists of Sri Lanka (CCPSL AAS 2021). Hybrid Conference, 25-27 July 2021.
- Measuring inflammatory biomarkers in COVID-19. Lippi G. Sociedad Española de Medicina de Laboratorio (SEQC-ML). Webinar, 27 October 2021.
- Laboratory Medicine in the era of COVID-19. 19th Panhellenic Congress of Clinical Chemistry. Athens (Greece) & Virtual conference. 4-6 November 2021.
- Monitoring humoral response after COVID-19 vaccination. 57th PAMET (Philippine Association of Medical Technologists) Virtual Annual Convention. Virtual Conference, 1-4 December 2021

### Articles published:

- Lippi G, Adeli K, Plebani M. Commercial immunoassays for detection of anti-SARS-CoV-2 spike and RBD antibodies: urgent call for validation against new and highly mutated variants. Clin Chem Lab Med. 2021 Dec 16. doi: 10.1515/cclm-2021-1287. Epub ahead of print. PMID: 34911171.
- Bohn MK, Lippi G, Horvath AR, Erasmus R, Grimmler M, Gramegna M, Mancini N, Mueller R, Rawlinson WD, Menezes ME, Patru MM, Rota F, Sethi S, Singh K, Yuen KY, Wang CB, Adeli K; IFCC Taskforce on COVID-19. IFCC interim guidelines on rapid point-of-care antigen testing for SARS-CoV-2 detection in asymptomatic and symptomatic individuals. Clin Chem Lab Med. 2021 Apr 28;59(9):1507-1515. doi: 10.1515/cclm-2021-0455. PMID: 33908222.
- Loh TP, Lord SJ, Bell K, Bohn MK, Lim CY, Markus C, Fares Taie H, Adeli K, Lippi G, Sandberg S, Horvath A. Setting minimum clinical performance specifications for tests based on disease prevalence and minimum acceptable positive and negative predictive values: Practical considerations applied to COVID-19 testing. Clin Biochem. 2021 Feb;88:18-22. doi: 10.1016/j.clinbiochem.2020.11.003. Epub 2020 Nov 20. PMID: 33227233; PMCID: PMC7678449.

### Other activities:

Developing and maintaining the IFCC Information Guide on COVID-19, an online resource providing key information on laboratory guidelines, biosafety, and other important resources to assist member societies around the world and their clinical laboratories as they face the challenges posed by the COVID-19 outbreak.

*Giuseppe Lippi, TF-COVID-19 Chair*

## Task Force on Global Newborn Screening (TF-NBS)

### Joint Task Force of IFCC and International Society of Newborn Screening (ISNS)

- Had inaugural Task Force meeting in January of 2021
- Created survey to assess current state of NBS and to identify potential candidates for collaboration
- Distributed survey to different mailing lists (including IFCC members, newsletters and local societies) and posted on IFCC website
- Analyzed survey responses
  - 425 responses from 84 countries
  - 66% of responses came from regions outside of North America, Europe or Australasia
  - Needs identified by responders included:
    - ◊ Support with development of education materials and guidelines
    - ◊ Training of laboratory, follow up and clinical personnel
    - ◊ Providing Laboratory Review/Quality Audit
  - Identified potential candidates for follow up by region:
    - ◊ Africa: South Africa, Nigeria, Uganda
    - ◊ Asia: Bangladesh, Nepal, Pakistan
    - ◊ Latin America: Guatemala, Dominican Republic, Bolivia, Peru

### Plans for 2022

- Creation of follow-up surveys and Zoom calls in Q1 2022
- Assessing the situation in two or three places including the extent of any governmental support during Q2 2022
- Agreeing concrete plans during Q3 and Q4 2022
- Ensuring that the elements of the pathway for sample collection, transport and clinical referral, confirmatory testing are in planned Q1 2023
- Starting deployment of equipment and training in Q2 2023
- Method validation/verification, training for sample taking, transport logistics and defining referral pathways etc. during Q3 and Q4 2023
- Start screening as a one or two year pilot in Q1 2024 depending upon local circumstances

*Van Leung-Pineda Co-Chair and James Bonham Co-Chair/ISNS - TF-NBS*

## Task-Force on Global Lab Quality (TF-GLQ)

### Background

One of IFCC's important goals is to improve general lab quality in Clinical & Medical Laboratories worldwide, and in particular in developing countries. In previous years, the "Committee of Analytical Quality" (C-AQ) and the Working Group "Developing Quality Competence in Medical Laboratories" (DQCML) were chartered with this task.

At the end of 2020 both initiatives were terminated and replaced by the Task-Force on Global Lab Quality (TF-GLQ).

The TF-GLQ was chartered to identify countries around the world willing to improve their IQC lab standards and to participate in EQA/Proficiency Testing programs. Initially, 10 countries with 5 labs each were to be identified for a pilot phase, in which IQC and EQA materials would be provided by the IFCC free of charge for the participating laboratories. On-site training courses, conducted by TF members, are planned during the 1-year pilot phase.

After the 1-year pilot phase, an in-depth analysis – based on pre-defined performance indicators (KPI) – shall be conducted. If the program appears to be successful, it is intended to roll out an expanded program to additional countries & labs.





## Achievements in 2021

- Conducting a global IQC&EQA survey in order to identify suitable countries & labs participating in the initial pilot phase.
- Based on the result of the survey, developing a priority list of 10 countries willing of improving their IQC and EQA programs.
- Identification of 5 labs in each of those 10 countries to participate in the 1-year pilot phase.
- Identification of country contacts and in particular, country coordinators to act as “country – IFCC” liaison managers for the pilot program.
- Developing a list of assays of high probability of demand/usefulness for the 1-year pilot phase, considering country specific needs.
- Defining criteria to identify most suitable IQC and EQA materials providing vendors.
- Identification and prioritization of potential vendors for the IQC and EQA programs (two rounds of bidding processes were performed).
- Selection of the provider(s): Oneworld ACCURACY (1WA) for the EQA program; selection of an IQC materials provider still pending.

## Meetings held in 2021

Including the inaugural TF-GLQ meeting, eight TF meetings were held (most at a monthly basis, mostly for 2 hours each), plus several ZOOM meetings with the EB and vendors. Due to the COVID-19 pandemic, the EuroMedLab Meeting in Munich, planned for the end of November/beginning of December 2021 was cancelled. As a consequence, the TF-GLQ did not meet in person in 2021, but exclusively via ZOOM conferences.

## Plans for 2022

- Finalize selection process of IQC materials provider.
- Develop jointly with 1WA the EQA program for the 1-year pilot phase.
- Start jointly with 1WA and monitor the roll-out of the EQA program.
- Develop and conduct general IQC and EQA training programs for participating countries. (Prioritization, number and duration of such trainings to be worked out).
- Develop and conduct WEBINARS on IQC and EQA for participating countries.
- Oversight over both IQC and EQA programs.
- Conduct an IFCC Webinar on IQC and EQA.

## Meetings planned for 2022

Monthly TF-GLQ ZOOM meetings are being continued during 2022.

The 1st physical meeting of TF members is planned at the IFCC WorldLab in Seoul in June 2022. A 2nd physical meeting of TF members is planned at the occasion of the IFCC General Conference in Brussels in October 2022.

*Egon Amann, Qing Meng, TF-GLQ Co-Chairs*

## Taskforce on Global eLearning/eAcademy (TF-GEL)

### Scope & Mandate

- Prepare initial terms of reference for a new taskforce on global eLearning/eAcademy
- Recruit Webinar Coordinator(s) with relevant technical and scientific expertise
- Initiate Live Monthly Webinars starting in January 2021, broadcast globally across different time zones, with each webinar consisting of a panel of 2-3 speakers and panel discussion
- Initiate development of recorded webinars for publication on the eAcademy platform
- Create new online courses, certificate programs, practical workshops, and tutorials delivered through Workcast or eAcademy

## Deliverables

Development of eLearning programs in the field of laboratory medicine, which include:

- Live Webinars – Global Broadcast
- Recorded Webinars for the eAcademy Platform
- Online courses and certificate programs
- Online practical workshops and tutorials

The taskforce has met regularly throughout 2021 and has helped coordinate typically twice monthly webinars. A full programme of international webinars for 2022 has already been established. The meetings appear to be attracting significant interest with there being in February and March 2022, 3821, 4461 and 5028 registrants respectively.

In the coming year, in addition to the ongoing webinar delivery, we are working to develop and deliver the means to provide IFCC accreditation for these webinars. We are also now reviewing international learning platforms with a view to enabling the IFCC to develop and deliver online courses and certificate programs, as well as online practical workshops and tutorials.

Available dates		Contact	Title/Topic
January 17-21	POSTPONED	Dr. Andrew South	Single Cell and Spatial Transcriptomics: clinical application
February 02 CONFIRMED - 4pm CET	Done 3821 registrants	Dr Ronald Booth	Neurofilament Light Chain (NfL), Troponin for the Brain: Measurement and Applications in Multiple Sclerosis and other neurological conditions.
February 16 CONFIRMED - 9am EST	Done 4461 registrants	Dr. Giuseppe Lippi	Impact of SARS-CoV-2 variants and mutations on COVID-19 diagnostics
March 02 CONFIRMED - 4 pm CET	Done 5028 registrants	Dr. Fred Apple	Laboratory & Analytical Aspects of High-Sensitivity Cardiac Troponin Assays
March 23 CONFIRMED - 1pm CET		Dr. Nino Tabadze	COVID -19 and Laboratory Medicine Role in Georgia
April 06 CONFIRMED - 5pm CET		Dr. Fred Apple	High-Sensitivity Cardiac Troponin Assays – Clinical Applications
April 26 CONFIRMED - 3pm CET		Prof. Jordi Ordonez-Llanos	Analytical and Clinical Aspects of Natriuretic Peptides
May 11 CONFIRMED - 3pm CET		Dr. Joe Wienczek	A Global Perspective on Health Inequities in Laboratory Medicine
May 23 CONFIRMED - time?		Dr. Sedef Yenice	Data-driven Operations and Machine Learning Applications in Clinical Laboratories
Jun 8 CONFIRMED 2pm CET		Aasne Aarsand	Biological variation
June 22		Prof Zhen Zhao	Experts' insights and experiences for clinical laboratory investigators: building translational research programs
July 6 CONFIRMED- 3 PM GMT - 5pm CET		Dr. Ana Lena	DDIMERS AND DIFFERENT CLINICAL APPLICATIONS
July 20 CONFIRMED - 5pm CET		Dr. Raúl Girardi	Traceability of measurements, quality and laboratory accreditation. Three topics of interest for clinical laboratory professionals in Ibero-America



Available dates		Contact	Title/Topic
September 7 CONFIRMED - 3PM GMT		Dr. Ana Lena	Importance of the Preanalytical Phase in different areas of the Laboratory
September 21 CONFIRMED - 2pm CET		Dr. Snežana Jovičić	Challenges in laboratory diagnosis of endocrine diseases
October 05		Dr. Van Leung-Pineda	Aspects of Newborn Screening
October 19 CONFIRMED - time?		Prof. Sedef Yenice	From Data to Decisions: Data and Analytics Leadership in Clinical Laboratory Management
November 9 Confirmed		Dr Andrew South	Single Cell and Spatial Transcriptomics: clinical application
November 23 Confirmed - 10am CET		Dr. Samue Vasikaran	The role of key laboratory tests in the investigation and management of metabolic bone disease
December 05-09 (confirmed slot)	Date need to confirmed from Speakers	Tester F. Ashavaid	Challenges in implementing Pharmacogenetics in routine Clinical

*Adrian Park - TF-GEL Chair*

## Task Force on Outcome Studies in Laboratory Medicine (TF-OSLM)

The IFCC Task Force on Outcome Studies in Laboratory Medicine (TF-OSLM) was formed in October, 2021. The important mission of the task force is to enhance the visibility of Laboratory Medicine through outcome studies. The task force is comprised by the following members corporate representatives and corresponding members:

### Members

Name	Position	Country	Term	Time in Office
Z. Zhao	Chair	US	1st	2021 10 - 2024 12
M. A. Serdar	Member	TR	1st	2021 10 - 2024 12
C. I. Suárez Sánchez	Member	CL	1st	2021 10 - 2024 12
V. Gounden	Member	ZA	1st	2021 10 - 2024 12
E. M. Simbaqueba Sánchez	Corp. Rep./IL-Werfen	US	1st	2021 10 - 2024 12
J. A. Snyder	Corp. Rep./Siemens	US	1st	2021 10 - 2024 12
C. Strain	Corp. Rep./Abbott	CA	1st	2021 10 - 2024 12

### Corresponding members:

Name	Full and Affiliate Member Societies
K. Rodriguez-Capote	Canadian Society of Clinical Chemists (CSCC)
M. Banerjee	Association of Clinical Biochemists of India (ACBI)
M.M.Suchitra	Association of Medical Biochemists of India (AMBI)
M. Wakui	Japan Society of Clinical Chemistry (JSCC)
V. Pant Nepalese	Association for Clinical Chemistry (NACC)
E. Koldberg Amundsen	Norsk Selskap for Medisinsk Biokjemi (NSMB)
R. I. Álvarez Carrasco	Asociación Médica Peruana de Patología Clínica (AMPPC)

On January 24, 2022, the newly created task force got together for their first meeting in a virtual conference call. Dr. Khosrow Adeli, the IFCC president, gave a kick-off speech to share the vision of the task force and provide history of previous efforts led by IFCC and international partners to promote Laboratory Medicine. The taskforce members discussed roadmap and timelines, as well as major milestones to help move things forward. Specifically, the TF-OSLM

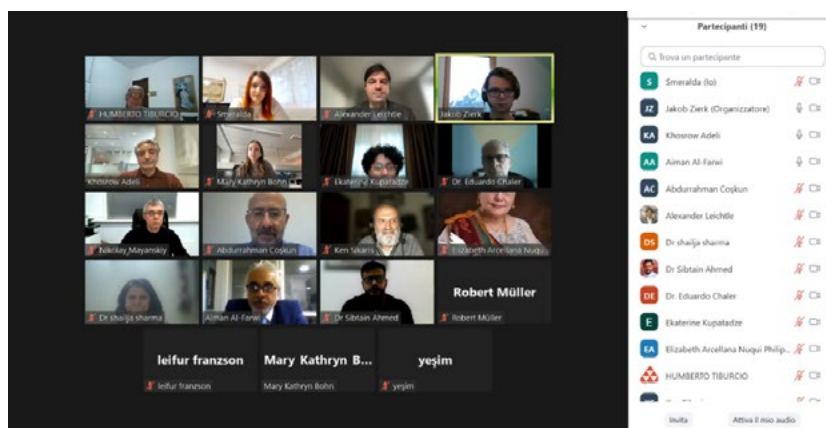
will take two pronged approaches led by two subcommittees, which had two subsequent virtual meetings on February 10 and 11, 2022.

The first subcommittee will lead the effort to identify existing peer reviewed, high quality publications that demonstrate the value of laboratory medicine in healthcare overall and create a repository/database of publications that is accessible by members of IFCC. This subcommittee members include C. I. Suárez Sánchez (Member, CL), J. A. Snyder (Corp. Rep./Siemens, US), C. Strain (Corp. Rep./Abbott, CA), K. Rodriguez-Capote (Corr. Member, CSCC), M.M.Suchitra (Corr. Member, AMBI), E. Koldberg Amundsen (Corr. Member, NSMB) and Z. Zhao (Chair, US). The second subcommittee will lead the effort to develop a funded research program for investigators in hospitals located around the world to conduct new retrospective and prospective research with outcomes that assess the value of laboratory medicine in healthcare overall. The taskforce could help centres in setting up studies to properly collect such data (common study protocols and formats) and publish their findings. This subcommittee members include M A. Serdar (Member, TR), C. I. Suárez Sánchez (Member, CL), V. Gounden (Member, SA), E. M. Simbaqueba Sánchez (Corp. Rep./IL-Werfen, US), M. Banerjee (Corr. Member, ACBI) and Z. Zhao (Chair, US).

Together, the task force will develop publications, presentations, webinars and other communications materials to help IFCC members use this data to effectively promote the critical value of laboratory medicine in healthcare to key CPD, C-VPLM, TF-CM and others, as required.

*Zhen Zhao - TF-OSLM Chair*

### Task Force on Global Reference Interval Database (TF-GRID)



On December 01 2021, the newly created TF-GRID (IFCC Task Force on Global Reference Interval Database, chaired by Jakob Zierk from Germany) came together for their first meeting in a virtual conference call. The task force’s overarching goal is the establishment and dissemination of digital IFCC reference interval resources to be used by scientists and clinicians worldwide. Specifically, the task force has identified five major tasks within their scope and mandate, which will be led by small subgroups within the task force:

- First, an IFCC website which provides an overview of all major global and local reference interval studies and initiatives will be developed. The aim of this website is to provide an IFCC-sponsored entry point to clinicians and scientists looking for reference intervals. This task will be led by M. K. Bohn (Member/YS, CA), P. Ridefelt (Member, SE), R. Müller (Corp. Rep., Abbott, DE), J.M. Rhea-McManus (Corp. Rep., US, Siemens), A. Al-Farwi (Corr.



- Member, SCLA), S. Sharma (Corr. Member, ACBI), and E. C. Cheung Wong (Member, US)
- Second, the task force will create a global IFCC reference interval database. This database will give end users access to specific reference intervals, stratified by the relevant covariates, and also allow comparison of patient's test results to existing reference intervals. (Both websites from the first and second task will be mobile-friendly.) The members leading this task are M. K. Bohn (Member/YS, CA), P. Ridefelt (Member, SE), P. Christensen (Corr. Member, DSKB), J.M. Rhea-McManus (Corp. Rep., Siemens, US), E. C. Cheung Wong (Member, US), and E. Kupatadze (Corr. Member GLMA).
  - Third, the task force will create web-based tools to allow end-users to calculate reference intervals using various direct and indirect methods. This task is led by A. B. Leichtle (Member, CH), A. Coskun (Member, TR), L. Franszon (Corr. Member, ISLM), and H. Marques Tiburcio (Corr. Member, DSKB)
  - Fourth, the task force will analyze existing global reference interval data to assess opportunities for reference interval harmonization, and to identify areas where reference interval studies are needed most. N. Mayanskiy (Member, RU), E. A. Chaler (Corr. Member, CUBRA) and R. Müller (Corp Rep, Abbott, US) are leading this task.
  - Fifth, a workshop on indirect reference intervals is planned, with the aim to disseminate both theoretic and practical knowledge on indirect reference interval approaches. This task is led by A. B. Leichtle (Member, CH), A. Coskun (Member, TR), and A. Al-Farwi (Corr. Member, SCLA).

The task force's first in-person meeting is currently scheduled for the EuroMedLab meeting in Munich, until then the group is having monthly virtual meetings.

*Jacob Zierk, TF-GRID Chair*

# FOUNDATION FOR EMERGING NATIONS



The activities of the FEN were again severely impacted during 2021 because of the Covid-19 pandemic.

The FEN Board:

- Approved the annual report and accounts for 2021
- Achieved tax exemption from the Swiss Regulatory Authority

The pandemic meant that it has not been possible for five scholarship recipients to visit their host laboratories in S Korea and the UK. The scholarships have been held over into 2022.

Fundraising for the FEN is contingent on the completion of ongoing projects. Therefore, no attempts were made to raise fresh funding during the year.

The Board acknowledges the excellent support of Paola Bramati.

The Board hopes that 2022 will be a more productive and effective year

*Graham Beastall FEN Chair*

# REGIONAL FEDERATIONS

## REGIONAL FEDERATIONS AFFILIATED WITH IFCC

There are six main Regional Professional Laboratory Medicine organizations which can be considered IFCC regional partners:

- AFCB - Arab Federation of Clinical Biochemistry
- AFCC - African Federation of Clinical Chemistry
- APFCB - Asia-Pacific federation of Clinical Biochemistry
- COLABIOCLI - Latin-American Confederation of Clinical Biochemistry
- EFLM - European Federation Clinical Chemistry and Laboratory Medicine
- NAFCC – North American Federation of Clinical Chemistry and Laboratory Medicine



## AFCB

### Arab Federation of Clinical Biology



### Activity Report of the 4 AFCB member societies (ALAM, STBC, SCLA and PMTA)

Given the epidemic situation (SARS-CoV-2), the majority of the training sessions organized by the 4 Arab companies which sent their 2021 report were provided by webinar

#### I. Algeria ALAM

- 7 webinars
- 2 face-to-face

THEME	Date	Topics	Observation
Toxicology	29/01/2021	Biological markers of alcohol consumption	webinar
Genetic - Hematology	25/02/2021	Non-BCR-ABL myeloproliferative syndrome: from NFS to NGS	webinar
Allergology	31/03/2021	Biological diagnosis of respiratory allergy	webinar
Immunology	2 et 3 avril 2021	- Monoclonal gammopathies - Autoimmunity	face-to-face
Virology	15/04/2021	COVID Screening and Sequencing	webinar
Genetic	27/04/2021	Screening for trisomy 21 and other chromosomal abnormalities by cfDNA (DPNI)	webinar
Hematology	11/05/2021	Thalassemia: interest of NFS and iron balance	webinar
Hematology	20 et 21 mai 2021	- Blood group systems - Explorations in haemostasis	face-to-face
Cancerology	27/05/2021	Endopredict: breast cancer expression profile	webinar
Virology	10/06/2021	Arboviruses	webinar
Genetic	24/06/2021	Exome	webinar
Gynecology - Biology	24/07/2021	Pre-eclampsia and biology	webinar
Bacteriology	16/09/2021	Microbiota	webinar
Fertility	30/09/2021	Genetic assessment of female and male infertility	webinar
Hepatology	14/10/2021	Fibrotest	webinar
Hepatology	28/10/2021	Onco-genetics: breast cancer angle new panel	webinar

THEME	Date	Topics	Observation
Hepatology	17/11/2021	Urodiag	webinar
Infectiology	09/12/2021	Maternal-fetal infections + CMV	webinar

## II. Palestine PMTA

- Long Courses

Clinical Leadership and Management Course		
Lecture Name	Lecturer	Date
Clinical Leadership and Management	Dr. Osama Najjar	15/1/2021
Laboratory Personal Management Techniques	Mr. Nidal Alawneh	16/1/2021
Corrections in Hematology Parameters	Mr. Ayman Najjar	17/1/2021
Team Development in the Lab	Dr. Amjad Hussein	18/1/2021
Time Management Skills to Benefit Lab	Dr. Wafa' Menawi	19/1/2021
The Leader as Visionary Motivator	Dr. Osama Najjar	23/1/2021

- Webinars, workshops, and scientific meetings

Lecture Name	Lecturer	Date
Laboratory Informatics Dealing with Laboratory Data to enhance Laboratory Results	Mr. Basem Abu Al Rub	10/2/2021
Medical Laboratory Quality Management and Accreditation/ session1	Mr. Abd Al Raouf Saleem	21/3/2021
Medical Laboratory Quality Management and Accreditation/ session2	Mr. Abd Al Raouf Saleem	22/3/2021
Design of Experiment(DOE) an easy Short Method to Access Research Results	Mr. Ahmad Saya'ra	3/11/2021
Prevalence and Antimicrobial Susceptibility Patterns of Silent Bacteriuria among Pregnant Women	Dr. Ikram Fayyad	9/12/2021
Elisa Techniques Principles, Types and other Labeled Immunoassays	Dr. Noor Abu Tayem	11/12/2021
Elisa Standard Curve and Sources of Error	Dr. Noor Abu Tayem	12/12/2021
How to Deal with Data Obtained from Elisa	Dr. Noor Abu Tayem	13/12/2021
Phenotype and Genotype Identification of Catalase Negative Staphylococcus aureus	Dr. Ma'moun Aubeidia	22/12/2021
Impact of Delay Biopsy and Pathology Report Turned Around Time on Cancer Disease	Mr. Basem Abu Al Rub	29/12/2021

- Official Meetings

Meeting Name	Date
General Conference Meeting	4-6 June, 2021
PMTA Social Solidarity Fund Meeting	3-4 July, 2021
Laboratory Services Pricing Committee	August, 2021



### III. Tunisia STBC

- 7 webinars
- 7 face-to-face

#### Regional meeting EFLM /AFCB/STBC

- AFCB 1st EFLM-AFCB Conference “Laboratory Medicine For Mobile Societies” and XXXIVth National Days of Clinical Biology (Virtual congress)

#### STBC/FIFBCML

- 1st Tunisian Days of Practical Biology November 12th et 13th 2021 Tunis



Education			
Date	Place	Theme	Participation
16/04/2021	webinar	Biological monitoring of COVID-19 patients in intensive care	450
04/06/2021	webinar	Verification / Validation of Methods in Clinical Biology	304
11/06/2021	webinar	Anti-nuclear antibodies	210
16/06/2021	webinar	Biologist's Wednesday (Case-reports presentation and discussion)	90
21/09/2021	Tunis	Diagnostic methods for Helicobacter pylori infections	32
08/10/2021	webinar	Investigation of food allergies	20
20/10/2021	webinar	Biologist's Wednesday (Case-reports presentation and discussion)	100
29/10/2021	Sfax	Microbiological surveillance of the environment in health care facilities	29
26/11/2021	Tunis	Spermogram	88
10/12/2021	Tunis	Free light chain assay: biological samples and interests	63
07/01/2022	webinar	Hemoglobin electrophoresis: interpretation difficulties	25
28-29/01/2022	Tunis	<b>Master of Quality Management in partnership with the Faculty of Pharmacy of Monastir:</b> Implementation of a quality documentation system	40
11/02/2022	Tunis	Microscopic diagnosis of cutaneous leishmaniasis and malaria	18
18-19/02/2022	Tunis	<b>Master of Quality Management in partnership with the Faculty of Pharmacy of Monastir:</b> Management of equipment	

Regional meetings		
Name of the meeting	Date	Society's contribution for the meeting
1st EFLM-AFCB Conference “Laboratory Medicine For Mobile Societies” XXXIVth National Days of Clinical Biology (Virtual congress)	February 18th, 19th & 20th 2021	EFLM STBC AFCB
1st Tunisian Days of Practical Biology	November 12th et 13th 2021 Tunis	FIFBCML STBC

#### IV. Syrian Clinical Laboratory Association (SCLA)

- SCLA has participated actively in the effort to combat COVID-19 in collaboration with the Ministry of Health and other health providers. SCLA played a major role in the diagnosis and follow up of patients as well as tracing contacts.
- JIB to discuss the role of Laboratory Medicine in some Mediterranean & European countries during the COVID-19 pandemic. Syria had presented a full report under the heading: “Syria between Rock and a Hard Place” which was published in the IFCC news.
- SCLA took part in the online meeting which was organised by IPCLM between 27-29 August 2021 and Dr Adnan Alkhatib delivered a lecture title (What is the Cut-off of Vitamin D)
- SCLA took parts in various activities concerning the misuse of Antibiotics; these includes:
  - Dr. Shannan has delivered few lectures on the danger of misusing antibiotics on the Microbiome & Microbiota during the Syrian Physicians Syndicate which was held in Aleppo October 2021 and during the Syrian Pharmacists Syndicate which was held in Latakia October 2021.
  - Dr. Shannan had also participated in a local television programme in the effort to raise awareness among the public of the danger of Antibiotics misuse.
- Dr. Adnan Khatib has delivered a lecture about the laboratory tests for the evaluation of the activity of the anticoagulants treatment during a one-day symposium organised by the Syrian Cardiovascular Society and the Syrian Oncology Society on type, appropriate use, misuse and the evaluation of anticoagulants in various cardiovascular diseases.

*Abderrazek Hedhili, AFCB Representative*



# AFCC

## African Federation of Clinical Chemistry



Dear Colleagues,

It gives me great pleasure to present this report. This has been a very difficult period for the AFCC due to the COVID 19 pandemic in which we did not have any activity in 2020 and indeed we lost nearly 15 months. In fact due to this pandemic we could not achieve many of the proposed activities that were presented as our operational plan for 2020/21

### Conference participation

President was invited to the inaugural conference of Malawian Association of Medical Lab Scientists in Feb 2020 and the Egyptian Quality Improvement Conference (MRC Chemical Pathology)

Towards the end of 2020, AFCC was asked to participate in an IFCC supported conference on COVID-19 which was held virtually in February, 2021.

AFCC provided auspices to the Egyptian MRC (Chemical Pathology) Congress

### Support for 1st Cardiometabolic Health and Diabetes Africa Congress (22-25 Feb 2022)

AFCC will be supporting this congress and will also assist in its planning through Prof Erasmus. It is proposed that AFCC will support 40 scientists, members of the Board and nominees from Task Force on Young Scientists (total number expected is between 60 and 70)

### Webinar Presentations (see below)

1. The AFCC Young Scientists organized a webinar in March 2021
  2. Subsequently a number of webinars were organized in collaboration with several academic institutions and the Empower School of Health, Switzerland
- Future Webinars : It was suggested that a Webinar Committee be appointed , members to be drawn from the AFCC member societies. A suggestion has also been made by the Egyptian Society for Quality Improvement (to be discussed)

IFCC Webinar on POC in Resource Poor Countries – July, 2021

Turkish Society - Lab Ethics- June, 2021

Africa Health -Biomarkers for Diabetes – Oct 2021

Kenyan Association of Clinical Pathology (KACP) – Point of Care Testing – Oct, 2021

AFCC Contribution to IFCC COVID 19 Conference – Feb, 2021

AFCC Young Scientists Webinar to celebrate Lab Professionals Week – April, 2021

AFCC Ethical Lab Practice Workshop , March 2021

Quality Issues in Medical Laboratory- Elephant in the room May, 2021

Lab Professional Week: The Medical Lab Career Opportunities, April, 2021

AFCC Webinar on Lab Logistics – July 2021

MRC /Chemical Pathology Conference, Alexandria University, Egyptian Society for Lab Improvement – April, 2021

### Auspices

POCT Africa International Conference (auspices AFCC) – May, 2021

20 young scientists were sponsored to attend this conference

### Website Revamp

As recommended by the board the website was revamped by a company in Zambia who initially collaborated with a company in Nigeria. The latter withdrew from the project. A contract drawn up by the company to maintain the website was not approved by the Board



### **Appointment of Committees**

The formation of 3 subcommittees was recommended.

- a. Education and Training – Mr G Akalu
- b. Standardisation and Traceability - Prof Anetor
- c. Point of Care Testing - Prof Erasmus

### **Organization of BSZ AFCC Regional Conferences**

The conference was postponed to Nov 11th due to the COVID 19 epidemic. The conference was organized virtually in collaboration with Ministry of Health Zambia and the University of Zambia. Their assistance is acknowledged as well as the LOC chaired by Mr V Daka and the chair of the Scientific Committee, Prof Sody Munsaka

The President facilitated the academic program by suggesting the names of 20 international speakers

The LOC was able to get 6 sponsors while the AFCC president managed to get 1 sponsor IFCC supported the conference by approving the participation of 3 IFCC Committees (Emerging Technologies, Lab Mx and POCT).

The conference was well attended and a huge success

### **Sponsorships**

AFCC supported young scientists to:

- a. IFCC Conference on COVID
- b. POCT Africa Conference
- c. BSZ AFCC Conference

### **Communication**

It has been a difficult task to keep up with multiple emails, requests and notices. This has resulted in lapses in communication. It is strongly suggested that a secretariat be formed and staffed by a part time person. Proposals have been sent to Biomedical Society of Zambia and Ethiopian Medical Lab Association

### **AFCC Rep to IFCC Global Lab Week Group**

Mr. H. Iumano will represent the AFCC

### **Revenue**

No revenue has been received in 2021 though the allocation of funds from IFCC was increased The new system for receiving funds is now linked to specific activities for which invoices are sent to the IFCC office once the activity is approved by IFCC Treasurer.

### **Collaboration with AACC and EFLM**

This has commenced and is expected to grow further in 2022.

### **Proposed MOU with Supreme Council of Egyptian Universities**

A MOU has been prepared to wards collaboration and co-operation between Egyptian Supreme Council, Siemens Middle East and AFCC to promote training and education throughout Africa

*Rajiv Erasmus, President*



## APFCB

### Asia-Pacific Federation of Clinical Biochemistry and Laboratory Medicine

The APFCB Executive Board consists of: Dr Sunil Sethi (SACB), President; Dr Leslie Lai (MACB), Immediate Past-President; Dra Endang Hoyaranda (IACC), Vice-President; Dr Helen Martin (AACB), Secretary; Dr Leila Florento (PAMET), Treasurer; Mr Alexander Wong (Siemens), Corporate Representative.

The APFCB has 4 Committees: Scientific Committee chaired by Dr Samuel Vasikaran (AACB); Education and Laboratory Management Committee chaired by Dr Tony Badrick (AACB), Communication Committee chaired by Dr Raja Elina Raja Azzidin (MACB) and Congresses and Conferences Committee chaired by Dr Praveen Sharma (ACBI)

#### A. Members of APFCB:

The members of the APFCB which is now 39 years old are as follows:

#### Full/ordinary Members, Affiliate Members and Corporate Members status 2021

The following National Societies are full/ordinary members of the APFCB:

1. Australasian Association of Clinical Biochemists (AACB)
2. Chinese Society of Laboratory Medicine (CSLM)
3. Hong Kong Society of Clinical Chemistry (HKSCC)
4. Association of Clinical Biochemists of India (ACBI)
5. Indonesian Association of Clinical Chemistry (IACC)
6. Iranian Society of Clinical Laboratory Doctors (IACLD)
7. Japan Society of Clinical Chemistry (JSCC)
8. Korean Society of Clinical Chemistry (KSCC)
9. Malaysian Association of Clinical Biochemists (MACB)
10. Mongolian Association of Health Laboratorians (MAHL)
11. Nepal Association for Medical Laboratory Sciences (NAMLS)
12. Pakistan Society of Chemical Pathologists (PSCP)
13. Philippine Association of Medical Technologists (PAMET)
14. Singapore Association of Clinical Biochemists (SACB)
15. Association for Clinical Biochemistry, Sri Lanka (ACBSL)
16. Chinese Association for Clinical Biochemistry, Taiwan (CACB)
17. Thailand Association of Clinical Biochemists (TACB)
18. Vietnamese Association of Clinical Biochemistry (VACB)

#### The following are the Affiliate Members of APFCB:

1. Association of Medical Biochemists of India (AMBI)
2. College of Chemical Pathologists of Sri Lanka (CCPSL)
3. Macao Laboratory Medicine Association (MLMA)
4. Nepalese Association of Clinical Chemistry (NACC)
5. Philippine Council for Quality Assurance in Clinical Laboratories (PCQACL)

#### The following are the Corporate Members of APFCB:

1. Abbott Diagnostics
2. Becton Dickinson Diagnostics
3. Beckman Coulter
4. Bio-Rad

5. DiaSys Diagnostic Systems GmbH
6. RCPAQAP
7. Roche Diagnostics
8. Sekisui Chemical Co (Japan) 16.
9. Siemens Healthineers
10. Snibe Diagnostics
11. Sukraa Software Solution Pvt Ltd
12. Sysmex
13. Thermo Fisher Scientific
14. Waters Corporation

## **B. Scientific Committee activities in 2021**

Activities of the Scientific Committee conducted in 2021 include new activities and carry-over activities from previous years.

1. Working Group on Diabetes Testing Harmonisation in the APFCB Region  
The Diabetes Testing Harmonisation WG chaired by Dr Mithu Banerjee has conducted surveys of diabetes testing and reporting practices in four countries in the Asia-Pacific region. Results of the survey conducted in India were presented at the APFCB Congress in 2019 and have been published.<sup>1</sup> The results of the survey in the Philippines were presented previously at the PAMET conference in 2018. Survey results for Sri Lanka were presented at the Annual Academic Sessions of the College of Chemical Pathologists of Sri Lanka (July 2021). A survey has also been conducted in Singapore.
2. Masterclass in Interpretative Commenting on Clinical Chemistry Reports – Webinars  
Since August 2020, the APFCB Scientific Committee has organised a monthly webinar series on Interpretative Commenting.  
The list of 2021 webinars were as follows: Calcium and Parathyroid; Endocrine Dynamic Function Tests – Adult; Lipid Testing; Cardiac Troponin; Diabetes Testing; Dynamic Function Tests Part 2; Anti- Muellierian Hormone; Serum Protein Electrophoresis; Essential of Porphyrins; Tumor Markers
3. Task Force on APFCB-WASPaLM TF-CKD  
APFCB / WASPaLM Task Force on Chronic Kidney Disease which is chaired by Dr Pavai Sthaneswar has undertaken a survey of testing and reporting practices for CKD-related laboratory indices in India
4. Working Group on Mass Spectrometry Harmonisation  
The Mass Spectrometry Harmonisation Working Group which is chaired by Dr Ronda Greaves has undertaken a multicentre study of the influence of internal standard on the analysis of 17-hydroxyprogesterone by LCMSMS, in association with RCPAQAP – AACB and IFCC Emerging Technologies Division Paediatric Hormone Working Group.
5. Working Group on the Harmonisation of Reference Intervals  
Chaired by Dr Tze Ping Loh, this working group has plans to derive and compare indirect reference intervals from paediatric to geriatric subjects from laboratories within the Asia-Pacific region.
6. Working Group to Analyse Laboratory Data for Improving Diagnostics.  
Mohamed Saleem is chairing a ‘results of benchmarking surveys in the region’ which will be used to support healthcare goals for improved disease management.

## **C. Education and Laboratory Management Committee**

1. APFCB Travelling Lecturer  
The APFCB Visiting Lecturer for 2021/22 is Dr Helen Martin from Australia.
2. APFCB-Roche -12th Chemical Pathology Course – Vietnam  
This is an ongoing annual event organised by Roche in collaboration with Rhonda Greaves from Australia. The course is endorsed and supported by IFCC, APFCB, VACB, AACB,



HACB, HAML, Bach Mai Hospital, Cho Ray Hospital and other medical organisations and associations.

3. APFCB – Becton Dickinson Pre-Analytical Improvement Project

The collaboration of APFCB with BD to provide our members with a digital guideline for pre-analytical procedures has now been finalised which contains the following webinars: Introduction to pre-analytical issues; Phlebotomy Attributes; Specimen Collection via Venepuncture; Specimen Collection via Vascular Access Device; Specimen Transportation

4. APFCB-AACC Workshops

The APFCB has been collaborating with the AACC with their Global Lab Quality initiative (GLQ) as part of the Asia Pacific Working Group (APWG). Due to the pandemic, the next program will be run in 2022

5. Symposia

The C-ELM organised a two-day virtual workshop on Laboratory Testing of Covid-19, to help lab professionals with appropriate guide in Covid-19 testing

6. The APFCB worked together with some of the Corporate Members to produce webinars: MindRay – Laboratory Management and ISO 15189; ThermoFisher – Measurement Uncertainty; Beckman-Coulter – Sepsis Diagnosis and Management; Snibe – to be organised in 2022; Roche – Patient Based Real Time Quality Control

**D. Communications and Publications Committee activities in 2021**

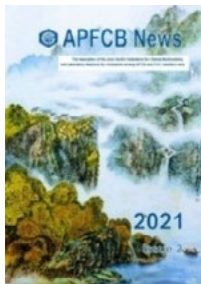
1. Website development

2. Publication of online activities

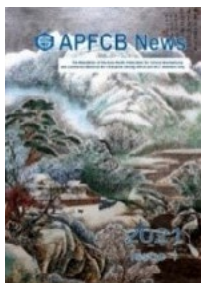
The C-CP team collaborates with other committees and the corporate sector to coordinate online activities. Understanding the need to support more virtual events in future, the C-CP is currently looking into further upgrading the capability of the APFCB website.

3. Publication of APFCB News

The newsletter is published twice yearly and contains reports on the activities of the APFCB and IFCC as well as reports from member societies. Two e-news were published in 2021:



<https://www.apfcb.org/APFCB%20News%202021%20issue%202.pdf>



<https://www.apfcb.org/APFCB%20News%202021%20Issue%201.pdf>

**E. Congresses and Conferences Committee activities in 2021**

During 2021, the committee members evaluated and granted APFCB auspices for the scientific events:

Conferences: 15th IACC Working Conference- June 2021; CCPSL AAS 2021 – July 2021; LCME 2021 – KSLM – October 2021

Corporate Member Events/Webinars: Roche Experience Days – November 2021; Webinar on Managing Covid-19 pandemic in 2021: The Henry Ford Experience – Beckman Coulter – June 2021; Digital Webinar on Observability in Healthcare – Roche – June 2021; Series of Educational Webinars focused on Asia Pacific Region related to Prenatal & Pre-eclampsia Screening, Clinical Biochemistry, Toxicology and 3rd Party QC – Thermo Scientific- September 2021; Leveraging the Latest Trends in the Digital Healthcare Revolution – Roche – September 2021

#### **F. Report of activities of Corporate Members for 2021**

1. Receivables Reconciliation from Corporate Members

2. Appointment of Corporate Representatives to APFCB Committees

In this Term, the APFCB saw an increase in interest levels from Corporate Members to participate in our activities. As such, the APFCB EB had agreed to double the number of nominations of corporate representatives to the APFCB Committees, to 2 members serving each Committee –

3. Zoomification of Corporate Member Activities

Since the COVID-19 pandemic, many corporate members have also taken to digital engagements. This ensured that the APFCB continued to receive a robust level of support for its educational activities, a trend that will likely persist moving into 2022. The APFCB saw a tremendous increase in the number of scientific articles and advertisements submitted for each APFCB e-newsletter. In addition, several corporate members also took the opportunity to organise virtual webinars and events. Examples of events that were successfully organised virtually include: APFCB Interpretive Commenting Masterclass Webinar Series – supported by Siemens Healthineers; APFCB Preanalytical Masterclass Webinar Series – supported by BD; APFCB Preanalytical Guidelines – supported by BD

*Reported by APFCB EB and Chairs:*

*Sunil Sethi, Leslie Lai, Endang Hoyaranda, Helen Martin, Leila Florento Alexander Wong, Samuel Vasikaran, Tony Badrick, Raja Elina Raja Azzidin, Praveen Sharma*





## 1.0 AFFILIATED NATIONAL SOCIETIES

- 1.1 **ARGENTINA**, BIOCHEMICAL CONFEDERATION OF THE ARGENTINE REPUBLIC
- 1.2 **BOLIVIA**, BOLIVIAN SOCIETY FOR CLINICAL BIOCHEMISTRY
- 1.3 **BRAZIL** BRAZILIAN SOCIETY OF CLINICA ANALYSIS
- 1.4 **CHILE**. CHILEAN SOCIETY OF CLINICAL CHEMISTRY
- 1.5 **COLOMBIA**. NATIONAL COLLEGE OF BACTERIOLOGY OF COLOMBIA
- 1.6 **COSTA RICA**. COLLEGE OF MICROBIOLOGISTS OF COSTA RICA
- 1.7 **DOMINICAN REPUBLIC**. DOMINICAN COLLEGE OF BIOANALYSES
- 1.8 **ECUADOR**. ECUADORIAN SOCIETY FOR CLINICAL BIOCHEMISTRY (
- 1.9 **GUATEMALA**. ASSOCIATION OF CHEMICAL CHEMISTS AND BACTERIOLOGISTS OF GUATEMALA
- 1.10 **HONDURAS**- COLLEGE OF MICROBIOLOGISTS AND CLINICAL CHEMISTS OF HONDURAS
- 1.11 **MEXICO**. MEXICAN COLLEGE OF CLINICAL LABORATORY SCIENCES
- 1.12 **PANAMA**. NATIONAL COLLEGE OF CLINICAL LABORATORY WORKERS OF PANAMA
- 1.13 **PARAGUAY**. ASSOCIATION OF BIOCHEMISTS OF PARAGUAY
- 1.14 **SPAIN**. SPANISH ASSOCIACION OF CLINICAL LABORATORY
- 1.15 **URUGUAY**. URUGUAYAN BIOCHEMICAL ASSOCIATION
- 1.16 **NICARAGUA** ASSOCIATION OF MICROBIOLOGISTS AND CLINICAL CHEMISTS OF NICARAGUA.

## 2.0 EXECUTIVE COMMITTEE BOARD MEMBERS 2020-2021

- President, Alvaro JUSTINIANO-GROSZ (BOLIVIA)  
Past president, Stella RAYMONDO (URUGUAY)  
Vice-President, Luis Fernando BARCELOS (BRAZIL)  
Treasurer, Rosa Ines SCALIER (BOLIVIA)  
Treasurer, Lisandra MORALES JURADO (BOLIVIA)  
1st Member, Jovanna BORACE (PANAMA)  
2nd Member, Fernando ANTUNEZ (URUGUAY)  
3rd Member, Ma Elena ARREDONDO (CHILE)

### Accounts Review Commission

- Alejandra ARIAS (ARGENTINA)  
Fernando VALLEJOS (ECUADOR)  
Jezabel VITE-CASANOVA (MEXICO)

### Regional Representative at IFCC.

- Ana LENA-RODRIGUEZ (2021-2023)

## 2.1 STRATEGY PLAN. (2020-2022) REVIEWED ON 2021

- STRENGTHENING THE INSTITUTIONAL IMAGE.
- STRENGTHENING COLABIOCLI MEMBER ASSOCIATIONS.
- EMPHASIS ON THE PARTICIPATION OF YOUNG PROFESSIONALS.
- PROMOTE THE STRENGTHENING OF NATIONAL REGULATORY REGULATIONS AND FRAMEWORKS, WITH THE AIM TO RECOGNIZE THE QUALITY MANAGEMENT SYSTEMS IN LABORATORIES.
- STRENGTHEN NATIONAL STRUCTURES THAT PROMOTE CONTINUOUS QUALITY IMPROVEMENT

- STRENGTHEN THE ROLE OF CLINICAL BIOCHEMICAL PROFESSIONALS, CLINICAL LABORATORY PROFESSIONALS OR THEIR EQUIVALENTS AS PART OF THE HEALTH TEAM
- IDENTIFY AGENDA ITEMS TO EXPAND LAB TERRITORY
- DEVELOP ONGOING TRAINING PROGRAMMES, FACILITATING ACCESS FOR DIFFERENT COUNTRIES
- STRENGTHEN RELATIONSHIPS WITH UNIVERSITIES AND SCIENTIFIC INSTITUTIONS

## **2.2 COLABIOCLI BUDGET** PREPARED FOR THE TERM 2020-2022. REVIEWED IN 2021

### **2.3 COLABIOCLI EXECUTIVE BOARD MEETINGS**

- NO PRESENCIAL MEETINGS WERE ORGANIZED DUE TO COVID 19 PANDEMIC.
- MONTHLY EXECUTIVE COMMITTEE MEETINGS VIA ONLINE DURING 2021.

Agenda: Rules on Ethics from Affiliated societies were condensed to prepare general guidelines. Procedures to provide auspices to academic programs. Rules to access the Proficiency Testing programs from SBAC-PNCQ. Regional clinical laboratories census.

### **3. LEGAL STATUS.** The bank account continues being in Uruguay to avoid taxes charges based on country economy differences.

## **4. COURSES, WEBINARS. CONSERVATORIES, OTHER**

### **4.1 COURSES**

- 4.1.1 Strategic Planning in laboratories and Leadership of young professionals.
- 4.1.2 Quality Management in University Teaching
- 4.1.3  
Modular Course N°1: Laboratory Diagnosis of Autoimmune Diseases  
Modular Course N°2: The Value of the Pre-Analytical Phase in the Laboratory  
Modular Course N°3: The Integral Management System of the Blood Bank  
Modular Course N° 4: Medical Mycology and advances in laboratory

### **4.3 WEBINARS IN COLLABORATION WITH AFFILIATED SOCIETIES**

- 4.3.1 Leadership and Middle Management in times of Pandemic.
- 4.3.2 Adequacy of Laboratory processes in the context of the COVID-19 Pandemic.
- 4.3.3 Clinical Utility of Neuronal Antibody Determination.
- 4.3.4 The value of the Clinical Laboratory in patient care.
- 4.3.5 Clinical Utility of Neuronal Antibody Determination.

### **4.4 CONSERVATORIES**

- 4.4.1 Presentation of the 2nd Cycle of Conversations COLABIOCLI 2021
- 4.4.2 Vaccines
- 4.4.3 Biosecurity in the framework of the second wave of the pandemic
- 4.4.4 Accreditation of Laboratories in times of pandemic
- 4.4.5 Data Confidentiality in Times of Pandemic: Two Perspectives of the Same Challenge
- 4.4.6 Current situation of laboratory diagnosis in the second wave of the COVID-19 pandemic
- 4.4.6 Evolution of External Quality Assessment Programs in Latin America
- 4.4.7 What young people learned from COVID-19
- 4.4.8 Evolution of External Quality Assessment Programs in Latin America
- 4.4.9 The Universities Training of Biochemical Professionals and Equivalent Degrees in LATAM today and the challenges of the virtuality.
- 4.4.10 Principles of Bioethics to be applied during laboratory care

## 5. HEALTH AND BLOOD BANK WEEK

No activities.

## 5.0 ACTIVITIES AND PROJECTS WITH THE PANAMERICAN HEALTH ORGANIZATION (PAHO)

5.1 No changes.

**6.0 DISSEMINATION OF THE LATINAMERICAN TRAINING PROGRAM** Update of the database of experts in different areas from affiliated countries.

**7.0 PAN AMERICAN SOCIETY FOR CLINICAL VIROLOGY (PASCV).** Interest to organize a course at the XXV COLABIOCLI Congress in Leon 2022

**8.0 SBAC DIGITAL.** VIRTUAL EVENT OF THE BRAZILIAN SOCIETY. 50 SCHOLARSHIPS WERE GIVEN TO EACH AFFILIATED SOCIETY OF COLABIOCLI. THEMES OF ACTUALITY AND COVID 19.

## 9.0 WORKING GROUPS AND COMMISSIONS.

### 9.1 Commission of Academic Union and Management Affairs

**Chair:** Carlos Navarro (Argentina)

Iratxe López Pelayo. (Spain)

Magaly Magariños Egüez (Bolivia)

Manuel Arca (Argentina)

Graciela Borthagaray. (Uruguay)

Alba Marina Valdés de García (Guatemala)

Daniel Razo Morales (Mexico)

Eduardo Antonio Rodríguez Vega (Panama)

Rosanna Clotilde Elías Peña (Dominican Republic).

<https://colabiocli.com/comision-academico-gremial-y-de-gestion/>

### 9.2 Pre-Analytical Working Group

**Chair:** Eduardo Aranda (Chile)

Beatriz Varela (Uruguay) Secretary.

Patricia Ochoa (Argentina) Member

Ma. Elena Arredondo (Chile) Member

Michelle Brennam (México) Member

Patricia Ochoa (Ecuador) Member

Silvia Flores (Perú) Member

<https://colabiocli.com/grupo-de-trabajo-wg-pre-latam/>

### 9.3 Accreditation Management working group.

**Chair:** Rosa Sierra-Amor. (Mexico)

Carlos Peruzzetto (Argentina),

Leonardo Aguirre (Chile),

Edgard Espinoza (Ecuador),

Beatriz Varela (Uruguay),

Sandra Quintana (Mexico)

Thamara Andrade (Ecuador),

Corresponding Members:

Magali Magariños (Bolivia)

Daniela Carrasco (Chile)

Gina Laitano (Honduras)

Rodrigo Ayala (Paraguay)

Ana Ma. Piana (Uruguay)

Consultants:



Milena Monari (Chile)  
Roberto Carboni (Chile)  
Observer:  
Victor Baltazar (Mexico)  
<https://colabiocli.com/grupo-de-trabajo-gestion-de-acreditacion/>

#### **9.4 Bioethics Working Group.**

**Chair.** Nilda Fink (Argentina),  
Graciela Queiruga (Uruguay)  
Olga Torre (Guatemala)  
Marta Ascurra (Paraguay)  
Garbiñe Saruwatari-Zabala (Mexico)  
Fernando Momo (Argentina)

#### **9.5 Young Scientist Latin America Group.**

Proposal for the creation of the Latin American Group of Young Scientists. Professionals in Biochemistry and equivalent degrees in Latin America. Creation of the Latin American Working Group of Young Professionals 2021-2022

#### **9.6 Creation of the Blood Bank Working Group**

**Chair** Ma. Jezabel Vite Casanova (México)

### **10. SCHOLARSHIPS**

Scholarships were given to several professionals from COLABIOCLI affiliated societies to attend various activities and events as described here below:

- 10.1 Theoretical Course of "Medical Mycology" 3 scholarship holders: Bolivia, Paraguay and Costa Rica
- 10.2 1st. International Symposium of updating in the laboratory. 4 scholarship recipients: Paraguay, Costa Rica, and 2 from Bolivia
- 10.3 Neonatal Screening "What can prevent a drop of blood." 3 scholarship recipients: Guatemala, Costa Rica and Paraguay
- 10.4 XIII Virtual Ibero-American Conference AEFA-OF, 1 scholarship from Panama.
- 10.5 Online Course Internal Medium. 3 scholarship recipients: Panama, Guatemala and Bolivia.
- 10.6 Course in Forensic Sciences. 3 scholarship recipients: Panama, Guatemala, Costa Rica.
- 10.6 Virtual Diploma in Selected Topics of Diagnostic Hematology by Laboratory (Advanced Level). 3 scholarship recipients: Costa Rica, Ecuador and Panama
- 10.7 Diploma in Resolution of High Impact Clinical Cases in the Hematology Laboratory" (face-to-face modality).
- 10.8 Diploma of "Uro analysis and Analysis of Body Fluids". 2 scholarship recipients: Spain and Panama
- 10.9 Diploma of "Clinical Pathology by Clinical Laboratory". 2 scholarship holders. Costa Rica and Panama
- 10.10 International Diploma of "Diagnostic Hematology". 2 scholarship recipients: Uruguay and Panama.
- 10.11 Virtual international diploma of "Clinical Microbiology " (1st. Generation)". 2 scholarship recipients: Paraguay and Guatemala
- 10.12 Virtual international diploma of "Clinical Microbiology " (1st. Generation)". 2 scholarship recipients: Paraguay and Guatemala
- 10.13 Virtual international diploma of "Clinical Microbiology " (1st. Generation)". 2 scholarship recipients: Paraguay and Guatemala

## **11 XXV LATIN AMERICAN CONGRESS OF CLINICAL BIOCHEMISTRY AND II CONGRESS OF THE MEXICAN ASSOCIATION OF CLINICAL LABORATORY SCIENCES.**

Periodic meetings for the organization of the COLABIOCLI LEON Mexico 2022 Congress.

## **12. CONGRESS OF COLABIOCLI AFFILIATED SOCIETIES.**

XXVIII INTERNATIONAL CONGRESS OF THE CLAHT GROUP, ENDORSEMENT OF COLABIOCLI. Scientific event developed virtually by the National College of Bacteriology of Colombia with the endorsement and sponsorship of COLABIOCLI

## **13. IFCC**

- The organization of an IFCC Virtual Conference on Covid 19 for February 2021, included the participation of five Latin American scientists.
- COLABIOCLI history report for IFCC Miles stones Handbook.
- Support of visiting professors for Latin American congresses of COLABIOCLI.
- Financial support of young scientists from different national societies within the region, to attend the IFCC/COLABIOCLI young scientists forum"
- Financial support for scientific events, courses, workshops or symposia organized by national societies within the region and/or regional federation.
- Payment of transport services of quality control materials to the countries that decide to participate in the COLABIOCLI – PNCQ agreement \* Financial support of the national representatives of the IFCC of the region to attend the meetings of the IFCC (General Conference of the IFCC, WORLDLAB)
- Financial support of virtual webinars and e-conferences, by the regional federation or national societies within the region.

## **14. RULES AND PROCEDURES**

Rules and procedures had been put in place for COLABIOCLI Scholarships, Proficiency Testing programs for affiliated societies, Young scientist below 40 years old scholarships applications, Auspices of Academic activities given by COLABIOCLI and the data base for the Latin American training program.

## **15.0 COLABIOCLI COLLABORATORS**

15.1 Portugal was accepted as collaborator of COLABIOCLI by the Executive Board. The National society will be formally presented at the next COLABIOCLI Assembly taking place during the Brazilian Society congress in November 2021.

15.2 Brazilian Proficiency Testing PNCQ under the auspices of the Brazilian Society of Clinical Analyses signed an agreement with COLABIOCLI to provide 30 proficiency testing programs to laboratories from COLABIOCLI Affiliated societies during one year. An education program was organized virtually on THE IMPORTANCE OF THE EXTERNAL QUALITY ASSESSMENT PROGRAMS (EQAS), and on the IMPLEMENTATION OF INTERNAL QUALITY CONTROLS IN CLINICAL LABORATORIES.

## **16.0 COLABIOCLI Web page.**

STRENGTHENING THE ENTITY ON SOCIAL NETWORKS AS WELL AS LAUNCHING THE NEW WEBSITE AND ITS MOODLE PLATFORM.

16.1 PRONOUNCEMENT OF COLABIOCLI OFFICIALLY REGARDING PERMANENT SUPPORT FOR BIOCHEMICAL PROFESSIONALS AND EQUIVALENT TITLE WORKING IN CLINICAL ANALYSIS LABORATORIES AT TIMES OF PANDEMIC, WEIGHING THEIR LEADING ROLE IN DIAGNOSING AND SUPPORTING THE MANAGEMENT OF PATIENTS WITH COVID 19.



## **17.0 OTHER BUSINESS**

### CALL FOR COMPETITION OF "VIDEO COLABIOCLI":

Develop short and concise videos, capable of showing with creativity and clarity, practical aspects of our profession, and that revalue the role of the Clinical Laboratory Professional in the multidisciplinary Health team

*Álvaro Justiniano Grosz, President  
Ana Lena Vera, Regional Representative*





## EFLM

### European Federation of Clinical Chemistry and Laboratory Medicine

The prime goal of the EFLM in 2021 was to further develop the two-way communication with EFLM National societies and their members. Based on the satisfaction survey among member societies in 2019, EB approved in February 2021 the update of the Action plan with 30 points, the majority of which are either completed or in progress to be completed in 2022. The focus was placed on the educational events and recourses. For members of the EFLM Academy, EFLM organized two online postgraduate courses: Biostatistics in Laboratory Medicine (1 September–3 November 2021), and Leadership Skills (13-23 September 2021). Courses were well attended and rated as excellent by the majority of participants. In October, the educational grant was signed with Snibe for organization of a series of webinars entitled “EFLM Lessons in Immunochemistry”. Eight webinars will be organized throughout 2022 and 2023, and the first is going to be launched in February/March 2022.

In February 2021 the Task Group “EFLM Syllabus Course” (TG-ESC) was established under the leadership of the EFLM President, Prof. Ana-Maria Šimundić, in order to produce the online educational resource covering the EFLM Syllabus. The TG-ESC has 20 members, who, together with 7 external course coordinators, produced a comprehensive course of 43 modules, with all the lectures in English language. The launch is scheduled for 20 January 2022.

The EFLM Education and Training Committee put an effort in updating and reorganizing the EFLM Speaker’s Bureau. It is now available on the EFLM website, and it represents a list of >100 outstanding speakers who are current or former EFLM officers, as well as colleagues recommended by EFLM National Societies that qualified with their accomplishments and commitment to education.

The promotion of the EFLM Academy was also one of the main actions of the EFLM in the past year. For this purpose, from 3 May to 7 June 2021, small group meetings were organized with EFLM National Societies and EFLM Officers, where the new benefits of the Academy were presented and enrollment procedures explained. Also, the EFLM wanted to hear about the possible obstacle and challenges of National Societies for enrollment of their members. The result of these meetings is that the number of enrollments to the Academy has increased, either through the block enrollment of the National Societies or through the enrollment of the individual members.

The EFLM activities in 2021 included also young scientists. EFLM Task Group Young Scientists (TG-YS) was established as the coordination framework of young scientists, residents, and all young professionals in laboratory medicine in Europe. The mailing list of young scientists is established, and on June 18, 2021 an online kick-off meeting of EFLM TG-YS was held.

EFLM established, for the first time, scientific grant for 2 scientific projects, in the maximum amount of 10 000 € each. They are to be awarded to one applicant coming from a country enjoying the “Vic Blaton” scholarship program (launched in August 2020), and to the other coming from any other country in Europe. The call for applications was distributed on 1 December 2021, and the deadline for submission is 31 January 2022.

In order to increase trust between its members and officers, and also transparency, objectivity and availability of information of its own activities to its members, the EFLM introduced a several changes into the Statutes and Procedure Manual. The new rule established in the EFLM Statutes is that no member may exercise more than 8 years in the EB. In the revised version of the EFLM PM a limit of one EB member per country was introduced, and the elections for the term 2022-23 followed that rule. Also, the policy on geographic equality and inclusion was established. In addition, a set of predefined, objective and transparent criteria for evaluating proposals for all calls for various vacant positions for EFLM officers, travel and scientific grants

and awards, should be defined, and the decisions should be elaborated, and made available with the calls.

On May 6th 2021, EFLM organized the “EFLM Intro Day” for all officers (WGs, committees, national society presidents, and national society representatives), in order that they better understand the mode of communication and operation within the EFLM, and to learn about EFLM rules and policies. It was the opportunity for the new officers to be introduced with the EFLM policies, and for those already in positions to refresh this information. Also, in order to communicate better with its members, the reconstruction of the EFLM website initiated in 2021 and it will probably be completed in 2022.

The communication between EFLM functional units and between EFLM and National Societies has been improved through frequent meetings of the EB and the EFLM President with the committee chairs and EFLM WGs, as well as by consulting NSs to develop strategic and action plans. Annual reports on the work of the WGs are now available at the EFLM website.

The new award, the EFLM Academy Award has been established to promote excellence and to award the extraordinary individuals who have made substantial contribution to the education in laboratory Medicine in Europe. It is going to be granted annually to the author of the most distinguished educational activity or a project in the past 5 years. Call for nominations was distributed in the first week of November 2021, and the winner will be announced in the first issue of EFLM Newsletter in 2022.

In 2021, EFLM has signed Memorandum of Understanding and established collaboration with the American Association of Clinical Chemistry (AACC), European Atherosclerosis Society (EAS), European, Middle Eastern and African Society for Biopreservation and Biobanking (ESBB), European Association of Nuclear Medicine (EANM), and European Renal Association (ERA).

Upon the call of the IFCC to nominate a representative to serve on the Global Lab Week IFCC Working Group, EFLM has nominated Lejla Alić as its representative.

To secure IVD support for some specific EFLM projects, EFLM has prepared an informative brochure with a number of sponsoring opportunities for IVD companies. The feedback was excellent and many companies agreed to support some EFLM projects and educational programs.

EFLM launched a new e-learning platform that is hosting all the e-learning events: live and on-demand webinars, Syllabus Course, and recorded events, as well as other EFLM resources.

EFLM established the new task force, EFLM Task Force: Green Labs, chaired by the President-Elect, Tomris Ozben, aimed to implement sustainable practices in medical laboratories, by decreasing their deleterious environmental impact and implementing efficient actions, taking steps to minimize energy, water and hazardous chemical use, as well as waste generation without compromising the quality of healthcare, and all this in order to make clinical laboratories safe and sustainable spaces.

## **COMMITTEES**

### **Committee – Communication (C-C)**

C-C has one working group (WG Promotion & Publications) and two task groups (TG European Laboratory Day and newly established TG Young Scientists). During the year 2021 we were proud to perform following activities:

- Preparatory work needed to realize website redesign and user experience improvement. We created the “Brand identity” document and basic requirements that served as the basis for communication with companies. We received 4 offers and evaluation of the next 5 offers is pending.
- We started realization of the idea of EFLM Young Scientists by the kick-off meeting in June 2021. Then the task group was formed with more than 20 members and Terms of reference. It is waiting for the chair appointment.
- We produced 6 issues of EFLM Newsletter where we continued with the traditional sections and added one new section: Coffee with the EFLM President where interviews of



the EFLM President with EFLM officers are published. These interviews are also published in the form of podcast.

- We continued with the regular presence of EFLM in social media (Facebook, Twitter, LinkedIn and Instagram) propagating key information from EFLM life.
- We prepared propagation materials for EuroMedLab EFLM booth (posters, plan of social media and interviews)
- We produced the Sponsoring opportunities for IVD companies brochure and helped with the production and propagation of EFLM Academy leaflet..
- We collected data and published EFLM Functional Units Annual report that summarizes EFLM visible activities in detail.

### **Committee – Education and Training (C-ET)**

In 2021 C-ET members were involved in EFLM Bursaries evaluation for the Euro MedLab Munich. For regular EFLM bursaries provided for EFLM-academy members up to the age of 35, C-ET members evaluated 33 applications. C-ET members also evaluated 10 applications for EFLM Scholarship Program in memory of Prof. Vic Blaton addressed to a defined group of EFLM National Societies selected according to UN and World bank classification criteria. According to the results of evaluation C-ET proposed to EFLM EB 10 regular and 5 Vic-Blaton bursaries.

Working group on congresses and postgraduate education (WG-CPE). Due to the pandemic and according to the EFLM EB recommendation, instead of alive, WG-CPE were involved in organization of two online postgraduate courses: Leadership Skills (13-23 September 2021) and Biostatistics in Laboratory Medicine (from 1 September to 3 November 2021). WG-CPE granted 3 on-line and 15 face-to face auspices for different educational events in 2021. In 2021 WG-CPE also established new list of lecturers for EFLM speakers-bureau. WG-CPE was also involved in organization of the new EFLM course “Lessons in Immunochemistry” which will be organized in a form of 8 webinars, 4 in 2022 and 4 in 2023.

Working group on Laboratory medicine Credit Points (WG-LMCP). To institute an EFLM credit system, the WG-LMCP were working on the development of a “Provider Application and Manual for EFLM Accreditation of Educational Programs” in conjunction with an administrative system called the Continuing Professional Education Credit System (CPECS). Preparation of the supplemental documents (14 documents including instructions, forms, checklists, and reports) to the manual continues and will be available soon. All of those documents will help to control the activities of high-quality continuing education content for laboratory specialists leading to CPD points, to evaluate applications and allocate credit points to various educational activities/ programs and to provide a certificate of credit upon successful completion of an EFLM CPD.


Working group on Distance Education (WG-DE). According to the well-established tasks, the WG on e-learning and Distance Education (WG-DE) maintained and upgraded the e-learning platform. Due to enlargement in technical requirements and EFLM EB decision, in the second half of 2021 technical support for webinars were transferred to professional congress organizers. Due to that WG-DE members start to cooperate with PCO for establishment of new updated model EFLM distance learning. In 2021 they organize and support 7 EFLM webinars and prepare full program of 17 new webinars to be held in 2022.

### **Committee – Profession (C-P)**

The C-P activity in 2021 focused mainly in five objectives:

1. Progress with achieving recognition of Specialists in Laboratory Medicine
2. Growing the EFLM Register (EuSpLM)
3. Growing the EFLM Academy
4. EFLMLabX
5. TG: EFLM Syllabus Courses





A proposed Common Training Framework for specialists in Laboratory Medicine under Directive 2013/55/EC (Recognition of Professional Qualifications (CTF) document is a joint statement on the proposed Common Training Framework in EU-based national societies (NS). It was published in CCLM in December 2020/print version in January 2021. This document represents an important achievement in the progress of recognition of Specialists in Laboratory Medicine. Today, we have 21/27 EU Member States that can meet the equivalence of EFLM Standards (EoS). 15/21 EU Member States that meet EoS could also meet the stricter requirements of the proposed EFLM Common Training Framework under EU Directive 2013/55 /EC (Recognition of professional qualifications - with the regulatory status of the profession). We are ready to present the CTF document to the EU Commission in 2022 (due to Covid pandemic, it was postponed) to continue achieving EuSpLM recognition.

In support of this process, the launch of the EFLM Academy in December 2019, which is now open to anyone (not just EFLM members) interested in laboratory medicine, proved to be a success. To raise the numbers of Academy and EuSpLM register members, especially through block enrolled NS, C-P and EB have organised (from April to June 2021) 18 individual meetings with EFLM NSs, to present the benefits of Academy (block and individual) membership. With the beginning of 2022, there will be adding a lot of new essential benefits, including free access to additionally six important Journal (Clinical Chemistry Journal, Journal of Applied Laboratory Medicine, Critical Reviews in Clinical Laboratory Sciences Journal, Clinical Biochemistry Journal and Scandinavian Journal of Clinical and Laboratory Investigation), free access to CLSI documents (for block enrolled members). As a result of an important project of TG: EFLM Syllabus Courses, in 2022 will be free access to more than 300 lectures on all Syllabus topics, free access to EFLM webinars and much more. There are a few differences in the additional benefits of membership of the EFLM in comparison to non-EFLM Academy membership: enrolment in the EFLM EuSpLM register, which will only be possible by applying to the EFLM Academy and eligibility for EFLM grant applicants. All information about Academy and its benefits are available on the EFLM website <https://www.eflm.eu/site/page/a/1558>. As a result of these efforts, the number of registrants for the Academy increased steadily until the end of 2021 (+35% in comparison with the year 2020). The total number of members of the Academy is 5921 (with and without EuSpLM): through NS block enrolment (maximum share of registrants) (Total: 5822 (98%) members, without EuSpLM certificate: 3037 (52%) members from total 5822; individual registration (Total: 99 (2%)), without EuSpLM registration: 82 out of 99). The total number of members of the Academy without EuSpLM, joined by both channels, is 3119. The WG-Register confirmed 2802 applications for EuSpLM Register in 2021, which was mainly achieved by block entry (99%) and additionally (1%) from individual applications.

By the end of 2021, Memorandum of Understanding (MoU) for Academy/EuspLM register group enrolment had been agreed with 32 national societies (11 new in 2022: Estonia, France, Greece, Kosovo, Romania, Romania-Affiliate, Serbia-Affiliate, Slovak Republic, Thailand, Turkey (TBS), Turkey (KUBD) and 3 in a way to sign: Germany, Netherlands, UK).

Unfortunately, the EFLMLabX practice exchange project has been postponed in most applications due to the Corona pandemic crisis. Three practices were still realised. The project achieved significant support through the introduction of an EFLM Bursaries programme. Still, because of pandemic, only three have been applied and confirmed, and one of them (from Turkey) also realised.

In 2021, the TG: **EFLM Syllabus Courses** under the new leadership of Ana-Maria Simundic had finished a huge project of Syllabus Courses in cooperation with several professionals from all over Europe as coordinators of 43 modules. With esteemed lecturers from different fields of LM and many European countries and beyond, we have prepared and recorded more than 300 lectures on all topics of the Syllabus. EFLM will launch the project, and courses available in



January 2022 on the EFLM Academy website, for Academy members only.

For the better visibility of the C-P projects, the Chair of C-P E. Homsak, together with other colleagues, presented the importance and progress with achieving recognition of Specialists in Laboratory Medicine and the educational EFLM tools (EFLMLabX and Syllabus Courses) at the EFLM Conference in Prague (4th Symposium CELME 2021: Cutting Edge Laboratory Management in Europe) in October and through the IFCC Webinar, held in November 2021. C-P updated the site accordingly with any changes.

### **Committee – Quality and Regulations (C-QR)**

The Working Group Accreditation and ISO/CEN standards published an article on Improving the laboratory result release process in the light of ISO 15189:2012 standard (Clin Chim Acta 522:167-73 (2021)). The WG also submitted a paper on an approach for determining allowable between reagent lot variation. Risk management and process care are leading principles in the development of documents. All members of the different countries contribute actively to make these widely acceptable. Due to the ongoing pandemic all activity was conducted through remote meetings, and e-mail conversations.

The Committee Chair is active in ISO-TC212 WG1, especially in relation with the new edition of ISO15189, as we did with the former editions. This is pivotal standard for quality management in medical laboratories.

The Committee Chair is active in the EA Health Care Working Group to contribute to harmonization of accreditation according to ISO15189 in the European countries. The WG is focused on influencing the development and interpretation of ISO and CEN standards and in particular the implementation of the new EU IVD Regulation.

The Committee Chair is also active in the EFLM Task Force: European Regulatory Affairs (TF-ERA). This Task Force follows up on the implementation phase of the new EU IVD regulation.

### **Committee – Science (C-S)**

This was another year where the activities of the Science Committee were heavily affected by the pandemic. Although face-to-face meetings were rare and time at a premium, the eight Working Groups (WGs) under this Committee (Autoimmunity Testing, Biological Variation, Cardiac Markers, Harmonisation, Patient Focused Laboratory Medicine, Postanalytical Phase, Preanalytical Phase and Test Evaluation), the two Task Groups (TGs) (Biological Variation Database and Performance Specifications Based on Outcome Studies) and the three Task and Finish Groups (TFGs) (Practical Approach to Uncertainty, Urinalysis, HIL interference) have still been working as hard as is possible considering the circumstances.

It became increasingly obvious that the activities within the Guidelines WG warranted some of the constituent TGs/TFGs becoming Working Groups in their own right, hence the formation of the Cardiac Markers and Autoimmunity Testing WGs which coincided with the dissolution of the Guidelines WG. It was also decided that all Groups, where they agreed, could have their terms of office extended by a year to help them complete tasks disrupted by the pandemic.

Nonetheless, despite the obvious challenges in the past year, groups have remained productive and some are actually meeting more often now that videoconferencing has become the default means of gathering. Certainly, Committee publications and guideline development continue apace, with highlights including the 9 papers published or accepted in 2021 by just the Biological Variation Working Group alone.

After the maximum three terms of office as Committee Chair, Eric Kilpatrick is stepping down as of 2022, with him being delighted that it is Michel Langlois - a previous WG Chair – who is succeeding him.

## MEETINGS

In 2021, due to the COVID-19 pandemic, only one EFLM event was held live: the 4th Symposium CELME 2021: Cutting Edge Laboratory Management in Europe in Prague (CZ) from 30 September to 1 October 2021.

The 1st EFLM-AFCB Conference “Laboratory Medicine for Mobile Societies” and XXXIV National Days of Clinical Biology was held live on-line 18 - 20 February 2021 while the 24th IFCC-EFLM European Congress of Clinical Chemistry and Laboratory Medicine - EuroMedLab 2021 was moved at the very last moment to 2022 (Munich (DE), 10-14 April 2022).

Two very successful EFLM courses have been also held on-line:

- 1st EFLM online Postgraduate course: Biostatistics in Laboratory Medicine - on-line, 1 September - 3 November 2021
- 2nd EFLM online Postgraduate course: Leadership skills in Laboratory Medicine - on-line, 13-23 September 2021

## WEBINARS

EFLM has organized seven Webinars during 2021:

- Verification of quantitative methods – Date: 26 January 2021 - Speaker: Dora Vuljanic (HR)
- Reference intervals verification by indirect methods – Date: March 2021 - Speaker: Dora Vuljanic (HR)
- Haemostatic disorders in COVID-19 patients – Date: 20 April 2021 - Speaker: Tatiana Vavilova (RU)
- Myths and facts about vitamin – Date: 15 June 2021 - Speaker: Ali Unlu (TR)
- Stem cells therapy and applications – Date: 14 September 2021 - Speaker: Yael Porat (IL)
- The general principles of laboratory biosafety – Date: 23 November 2021 - Speaker: Gijsbert van Willigen (NL)
- Why we are not using old and novel bone markers as a routine biochemical marker? – Date: 21 December 2021 - Speaker: Sepici Dincel Aylin (Turkey)

## PUBLICATIONS

How to meet ISO15189:2012 pre-analytical requirements in clinical laboratories? A consensus document by the EFLM WG-PRE

Vermeersch P, Frans G, von Meyer A, Costelloe S, Lippi G, Simundic AM

Clin Chem Lab Med 2021 doi.org/10.1515/cclm-2020-1859

European Biological Variation Study (EuBIVAS): within- and between-subject biological variation estimates for serum thyroid biomarkers based on weekly samplings from 91 healthy participants Bottani M, Aarsand AK, Banfi G, Locatelli M, Coskun A, Díaz-Garzón J, Fernandez-Calle P, Sandberg S, Ceriotti A, Carobene A and on behalf of the European Federation of Clinical Chemistry and Laboratory Medicine Working Group on Biological Variation

Clin Chem Lab Med 2021 doi.org/10.1515/cclm-2020-1885

Quality benchmarking of smartphone laboratory medicine applications: comparison of laboratory medicine specialists’ and non-laboratory medicine professionals’ evaluation

Jovičić S, Siodmiak J, Duque Alcorta M, Kittel M, Oosterhuis W, Moberg Aakre K, Jørgensen P, Palicka V, Kutt M, Anttonen M, Velizarova MG and Marc J, European Federation of Clinical Chemistry and Laboratory Medicine Working Group on Patient-Focused Laboratory Medicine Clin Chem Lab Med 2021;59:693–9

Presentation and formatting of laboratory results: a narrative review on behalf of the European Federation of Clinical Chemistry and Laboratory Medicine (EFLM) Working Group “postanalytical phase” (WG-POST)

Cadamuro J, Hillarp A, Unger A, von Meyer A, Miquel Bauçà J, Plekhanova O, Linko-Parvinen A, Watine J, Leichtle A, Buchta C, Haschke-Becher E, Eisl C, Winzer J, Kristoffersen AH

Within- and between-subject biological variation data for tumor markers based on the European Biological Variation Study

Coşkun A, Aarsand AK, Sandberg S, Guerra E, Locatelli M, Díaz-Garzón J, Fernandez-Calle P, Ceriotti F, Jonker N, Bartlett WA, Carobene A, on behalf of the European Federation of Clinical Chemistry and Laboratory Medicine Working Group on Biological Variation  
Clin Chem Lab Med 2021 doi.org/10.1515/cclm-2021-0283

The European Biological Variation Study (EuBIVAS): a summary report

Carobene A, Aarsand AK, Braga F, Carobene A, Aarsand AK, Bartlett WA, Coskun A, Diaz-Garzon J, Fernandez-Calle P, Guerra E, Jonker N, Locatelli M, Plebani M, Sandberg S and Ceriotti F.  
Clin Chem Lab Med 2021 doi.org/10.1515/cclm-2021-0370

Systematic review and meta-analysis of within subject and between-subject biological variation estimates of serum Zinc, Copper and Selenium

Coskun A, Aarsand AK, Braga F, Carobene A, Díaz-Garzón J, Fernandez-Calle P, Jonker N, Gonzalez Lao E, Marques-Garcia F and Sandberg S, on behalf of the European Federation of Clinical Chemistry and Laboratory Medicine Working Group on Biological Variation and Task Group for the Biological Variation Database  
Clin Chem Lab Med 2021 doi.org/10.1515/cclm-2021-0723

The European Biological Variation Study (EuBIVAS): Biological Variation Data for Coagulation Markers Estimated by a Bayesian Model

Aarsand AK, Kristoffersen AH, Sandberg S, Støve B, Coşkun A, Fernandez-Calle P, Díaz-Garzón J, Guerra E, Ceriotti F, Jonker N, Røraas T, and Carobene A, on behalf of the European Federation of Clinical Chemistry and Laboratory Medicine Working Group on Biological Variation  
Clin Chem 2021 doi: 10.1093/clinchem/hvab100

Improving the laboratory result release process in the light of ISO 15189:2012 standard

Çubukçu H, Vanstapel F, Thelen M, A Bernabeu-Andreu F, van Schrojenstein Lantman M, Brugnoli D, Mesko Brguljan P, Milinkovic N, Linko S, Vaubourdolle M, O'Kelly R, Kroupis C, Lohmander M, Šprongl L, Panteghini M, Boursier G, European Federation of Clinical Chemistry, Laboratory Medicine EFLM Working Group Accreditation, ISO/CEN standards WG-A/ISO  
Clin Chim Acta 2021;522:167-73

Implementation of the new EU IVD regulation - urgent initiatives are needed to avert impending crisis

Cobbaert C, Capoluongo ED, Vanstapel F, Bossuyt PMM, Pal Bhattoa H, Nissen PH, Orth M, Streichert T, Young IS, Macintyre E, Fraser AG and Neumaier M  
Clin Chem Lab Med 2021 doi.org/10.1515/cclm-2021-0975

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

Coşkun A, Carobene A, Aarsand AK, Aksungar FB, Serteser M, Sandberg S, Díaz-Garzón J, Fernandez-Calle P, Karpuzoğlu FH, Coskun C, Kizilkaya E, Fidan D, Jonker N, Uğur E, Unsal I, on behalf of the European Federation of Clinical Chemistry and Laboratory Medicine Working Group on Biological Variation and Task Group for the Biological Variation Database  
Clin Chem Lab Med 2021 doi.org/10.1515/cclm-2021-0886



Biological variation estimates of thyroid related measurands - meta-analysis of BIVAC compliant studies

Fernández-Calle P, Díaz-Garzón J, Bartlett W, Sandberg S, Braga F, Beatriz B, Carobene A, Coskun A, Gonzalez-Lao E, Marques F, Perich C, Simon M, Aarsand AK, EFLM Working Group on Biological Variation and Task Group for the Biological Variation Database  
Clin Chem Lab Med 2021 doi:10.1515/cclm-2021-0904

Long-term within- and between-subject biological variation of 29 routine laboratory measurands in athletes

Diaz-Garzon J, Fernandez-Calle P, Aarsand AK, Sandberg S, Coskun A, Carobene A, Jonker N, Itkonen O, Bartlett WA, Buno A, European Federation of Clinical Chemistry and Laboratory Medicine Working Group on Biological Variation  
Clin Chem Lab Med 2021 doi:10.1515/cclm-2021-0910

*Snežana Jovičić, EFLM Executive Board Secretary*





## NAFCC

### North American Federation of Clinical Chemistry and Laboratory Medicine

The NAFCC was formed in 2014 by the AACC and CSCC. The role of the NAFCC is to provide representation of the two North American societies to the IFCC executive board.

Dr. Stephen Hill is the current representative and will serve until December 2023.

The AACC and CSCC joint meeting was held in Atlanta GA, September 26 – 30. It was a hybrid of in person and virtual

The AACC is planning for their 2022 annual meeting in Chicago IL, July 24 –28, and the CSCC is planning for their annual meeting in Niagra Falls ON, June 5 8.

*Stephen Hill, NAFCC Representative*

# Full Member Societies



## ARGENTINA

CONFEDERACIÓN UNIFICADA BIOQUÍMICA DE LA REPÚBLICA ARGENTINA (CUBRA)

### NATIONAL MEETINGS

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- All meetings were carried out via zoom.
- **Government Board CGP** 19th March; 13th April; 15th September 2021 in Buenos Aires – Argentina.
- **Live Webinars**, organized by Cubra’s Permanent Scientific Committee were carried out in 2021 in Buenos Aires – Argentina.
- Meetings of the **Permanent Technical Commission of the Unique Biochemical Nomenclator of C.U.B.R.A.** (CTP-NBU-CUBRA) 03rd November 2021 in Buenos Aires – Argentina.

### EDUCATION

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- Member of the Executive Committee of the **Commission of National Biochemical Certification (COCERBIN)**.
- Member of the “**Advisory Commission for the Evaluation and Updating of the Unique Biochemical Nomenclature**”, within the Superintendence of Health Services.

### REGIONAL RELATIONS

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Colegio Bioquímico de Catamarca

Colegio Bioquímico del Chaco

Colegio Bioquímico de La Pampa

Colegio Bioquímico de La Rioja

Colegio Bioquímico de San Juan

Colegio Bioquímico de Santiago del Estero

Colegio Bioquímico de Tucumán

Colegio de Bioquímicos de la Provincia de Río Negro

Colegio de Bioquímicos de Corrientes

Colegio de Bioquímicos de Neuquén

Colegio de Bioquímicos de Entre Ríos

Colegio de Bioquímicos de Formosa

Colegio de Bioquímicos de Jujuy

Sección 1ª de Bioquímica del Colegio Oficial de Farm. y Bioq. de Capital Federal

Colegio de Farm. y Bioquímicos de la Provincia de Santa Cruz

Bioquímicos del Interior A.C. Salta

Círculo Bioquímico de la Provincia de Misiones

Asociación Bioquímica de Salta

Asociación Bioquímica de Mendoza

Asociación Bioquímica del Este

Asociación Bioquímica de San Luis

Asociación Bioquímica de Villa Mercedes

Asociación Bioquímica de San Rafael



Federación de Bioquímicos de la Provincia de Córdoba  
Federación Bioquímica de la Provincia de Buenos Aires  
Federación Bioquímica de la Provincia de Chubut  
Federación Bioquímica de la Provincia de Santa Fe

**ABA** - Asociación Bioquímica Argentina

**FBA** - Fundación Bioquímica Argentina

**COORDINADORA** de Colegios de Bioquímicos de Ley de la República Argentina

**CGP** - Confederación General de Profesionales

**IRAM** - Instituto Argentino de Normalización y Certificación

**ECUAFyB** - Ente Coordinador de Unidades Académicas de Farmacia y Bioquímica

**UCOPS** - Unión de Confederaciones de Profesionales de la Salud

**Agrupación Bioquímica de Cuyo**

**FEBIPA** - Federación Bioquímica Patagónica.

**FOBINEA** - Foro de Bioquímicos del Noreste Argentino.

**FEBINOA** - Federación Bioquímica del Noroeste Argentino

**Ministerio de Salud de la Nación** – Superintendencia de Servicios de Salud

**Ministerio de Educación de la Nación**

## INTERNATIONAL RELATIONS

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IFCC International Federation of Clinical Chemistry and Laboratory Medicine.

COLABIOCLI Confederación Latinoamericana de Bioquímica Clínica.

CLAPU Confederación Latinoamericana y del Caribe de Asociaciones de Profesionales Universitarios.



**AUSTRALIA AND NEW ZELAND**  
**AUSTRALASIAN ASSOCIATION FOR**  
**CLINICAL BIOCHEMISTRY AND**  
**LABORATORY MEDICINE (AACB)**

## NATIONAL MEETINGS

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<i>Name of the meeting</i>	<i>Date</i>	<i>Topic</i>
AACB 58th Annual Scientific Meeting	27-28 October 2021	Theme: "Get your head in the cloud"

## EDUCATION

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RCPA-AACB Chemical Pathology Course – Virtual format, February 2021 – covered AACB Education curriculum topics for both the AACB and RCPA.

State Branch-based scientific meetings held monthly either face-to-face or in webinar format.

Roman Lectures – Postponed until 2022 or 2023 depending on travel restrictions

## REGIONAL RELATION

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### **Asia Pacific Federation of Clinical Biochemistry and Laboratory Medicine**

AACB will host the 2024 APFCB congress in Sydney, 19-24 October. Preparations are well underway with a PCO, and Local Organising Committee appointed.

AACB offers a discounted membership for members of APFCB affiliate societies, including on-line subscription to Clinical Biochemist Reviews and access to all member only educational material.



<b>AACB members contributing to APFCB in 2020-2021:</b>	
<b>Committee</b>	<b>Committee</b>
APFCB Executive Board	
Secretary	Helen Martin
<b>Scientific Committee Scientific Committee</b>	
Chair	Samuel Vasikaran
<b>Scientific Working Groups</b>	
Mass Spectrometry Harmonisation	Ronda Greaves (Chair)
Laboratory data for improving diagnostics	Mohamed Saleem (Chair)
<b>Education and Laboratory Management</b>	
Chair	Tony Badrick
Vietnam Course	Ronda Greaves
<b>APFCB Publications</b>	
General and case studies editor	Mohamed Saleem

## INTERNATIONAL RELATIONS

<b>AACB members contributing to IFCC in 2020-2021:</b>		
<b>Committee</b>	<b>Committee</b>	<b>Corresponding member</b>
<b>IFCC Executive</b>		
Congress & Conference committee		Helen Martin
<b>Task Forces</b>		
Task Force on COVID -19	Andrea Rita Horvath	
Task Force on Global Laboratory Quality	Renz Bais	
Task Force on Ethics	Richard Davey	
<b>Scientific Division</b>		
Traceability in Laboratory Medicine	Tony Badrick	
Reference Intervals and Decision Limits	Ken Sikaris	Graham Jones
Harmonisation of Autoimmune Tests	Louise Weinholt	
Bone Metabolism	Samuel Vasikaran	
Standardisation of Albumin Assay in Urine	Graham Jones	
Fecal Immunochemical Testing	E Symonds	
Molecular Diagnostics		Daniel Burke
Standardisation of thyroid function tests		Paul Williams
<b>Education and Management Division</b>		
Value Proposition for Laboratory Medicine	Andrew St John (Chair)	Tony Badrick
Clinical & Molecular Biology curriculum		D Kunde
Point of Care Testing	Rosy Tirimacco	Samarina MUSAAD
Analytical Quality	Tony Badrick	
Communications and Publications		
Public Relations	Peter Vervaart	
Internet and e-learning		V Vilaylath
Electronic Journal of IFCC - eJIFCC	Ronda Greaves	



<b>AACB members contributing to IFCC in 2020-2021:</b>		
<b>Committee</b>	<b>Committee</b>	<b>Corresponding member</b>
	Andrea Rita Horvath	
	Peter Vervaart	
<b>Emerging Technologies Division</b>		
Executive Committee	Ronda Greaves	
	Helen Martin	
Emerging Pediatric Laboratory Medicine	Ronda Greaves	



**AUSTRIA**  
AUSTRIAN SOCIETY OF LABORATORY MEDICINE AND  
CLINICAL CHEMISTRY (ÖGLMKC)

**NATIONAL MEETINGS**

<b>Name of the meeting</b>	<b>Date</b>	<b>Topic</b>
Symposium Labormedizin in Seggau	4. und 5. Mai 2022	Medicine in times of Corona - Stimulator or drag shoe for laboratory medicine?



**CANADA**  
CANADIAN SOCIETY OF CLINICAL CHEMISTS (CSCC)

**NATIONAL MEETINGS**

<b>Name of the meeting</b>	<b>Date</b>	<b>Topic</b>
CSCC Annual Conference 2021	September 26-30, 2021	CSCC/AACC Joint Annual Meeting Atlanta, Georgia, USA
Upcoming meeting in 2022: CSCC Annual Conference	June 5-8, 2022	CSCC Annual Meeting Niagara Falls, Ontario
Upcoming meeting in 2023: CSCC Annual Conference	June 18-21, 2023	CSCC Annual Meeting held jointly with CCMG Winnipeg, Manitoba
Upcoming meeting in 2024: CSCC Annual Conference	May 26-29, 2024	CSCC Annual Meeting held jointly with SQBC Mont Sainte-Anne, Quebec

**NATIONAL MEETINGS**

**2021 Travelling Lectureship Series**

Speaker: Dr. Roger Strasser, AM, Professor of Rural Health, University of Waikato, New Zealand; Founding Dean Emeritus, Northern Ontario School of Medicine

Topic: The Future of Rural Health Care in Post-Pandemic Canada

Dr. Strasser gave three lectures in October 2021

The lectureship is sponsored by Bio-Rad Laboratories

### **CSCC Webinar Lectureship on Cardiovascular Disease**

Speaker: Dr. Jorge Herrman, Physician and Professor of Medicine at the Mayo Clinic College of Medicine; Director of the Cardio-Oncology Clinic; Research Director Ischemic Heart Disease program

Topic: Cancer Therapies and Cardiovascular Toxicities

June 3, 2021

Lectureship sponsored by Abbott

### **CSCC Webinar Lectureship on Critical Care Medicine**

Speaker: Dr. Robert Fowler, MD, MDCM, M.Sc., Professor of Medicine, Sunnybrook Hospital and the University of Toronto

Topic: The Lessons of Outbreaks and Pandemics

June 10, 2021

Lectureship sponsored by Roche

### **2020-21 Education Roundtable Webinar Series**

17 CSCC "Education Roundtable" in webinar format were held twice a month from September 2020 to May 2021. In addition to single participants, many members formed groups at their institution to attend the webinars. Sessions averaged about 50 phone lines and 200-250 participants.

### **2021 Industry Workshop Webinar Series**

Five Industry Workshop Webinars were held in 2021 between June and October. These are sponsored scientific sessions that have been very successful and are of great interest to the industry sponsors. Average attendance was approx. 100 participants per session.

### **Special Interest / Working Groups**

CSCC has 11 special interest / working groups which are communities with an interest in advancing a specific area of knowledge, learning or technology where members cooperate to affect or to produce solutions within their particular field. The activities usually consist of communication between conferences and informal sessions within the CSCC conference. These groups also develop position statements and guidelines, and present educational webinars.

### **Leadership In Quality Management Certificate Program**

The purpose of this Program is to bring Clinical Biochemists, as laboratory leaders, to a level required to provide competent leadership and oversight to the quality management systems (QMS) in their laboratory. The certificate Program is presented as an on-line course in quality management. CSCC trainee members are offered the option to register in the program at no charge. This event is an accredited group learning activity as defined by the CACB/CSCC Professional Development Program.

Participants have two years to complete the program.

### **CACB Professional Development Program**

The Maintenance of Competence Committee oversees the continuing professional development (PD) program designed by the Canadian Academy of Clinical Biochemistry to encourage and support the lifelong learning needs of its Fellows and other healthcare professionals who are in the practice of clinical chemistry. The program uses accreditation of continuing professional development events, establishes an ongoing PD program for continuing education credits, and conducts audits of PD credit submissions as a means of meeting this goal.



## Clinical Biochemistry Journal

CSCC is the owner of the scientific journal Clinical Biochemistry which is published by Elsevier. There are 12 issues per year and the website is: <https://journals.elsevier.com/clinical-biochemistry>

### REGIONAL MEETINGS

<i>Name of the meeting</i>	<i>Date</i>	<i>Society's contribution for the meeting</i>
Alberta Society of Clinical Chemists 2021 Annual Meeting	October 22, 2021 Virtual	Hosted and planned by the Alberta regional society of CSCC
Ontario Society of Clinical Chemists 2021 Annual Meeting	November 8&9, 2021 Kingston, Ontario	Hosted and planned by the Ontario regional society of CSCC



### REGIONAL RELATIONS

CSCC has 8 Provincial Sections – British Columbia, Alberta, Saskatchewan, Manitoba, Ontario, New Brunswick, Nova Scotia, and Newfoundland & Labrador. Each Section holds its own meetings and small conferences. The Sections report annually to the Society Council. A Provincial Grant is available for each section to help fund their activities.

CSCC will hold its annual conference as a joint meeting with the Canadian College of Medical Geneticists (CCMG) in 2023 in Winnipeg, Manitoba.

CSCC will hold its annual conference as a joint meeting with La Société québécoise de biologie clinique (SQBC) in 2024 in Mont Sainte-Anne, Quebec.

### INTERNATIONAL RELATIONS

CSCC held its annual meeting jointly with the American Association for Clinical Chemistry (AACC) in 2021.

CSCC paid the IFCC membership dues of the Cuban Society.

CSCC, with AACC, is a member of the North American Federation of Clinical Chemistry and Laboratory Medicine (NAFCC) of IFCC. The NAFCC is represented at the IFCC Executive Board meetings. Dr. Stephen Hill of Ontario Canada is the current NAFCC representative.

Dr. Khosrow Adeli, Past-Chair of the Canadian Academy of Clinical Biochemistry, is the current President of IFCC.

Dr. David Kinniburgh, Past-President of CSCC, is the current Secretary of IFCC.

There are several Canadian members on IFCC committees and each of these members is asked to provide a report to each CSCC Council meeting.

### ADDITIONAL RELATION

#### External Representation

CSCC has diverse representation on external professional groups, including IFCC, the Canadian Standards Association, the JCTLM Working Group for Traceability, Education and Promotion, the Canadian Society of Nephrology Task Force on eGFR Reporting, and the Diabetes Technology Society (iCode).

CSCC had a number of interactions with other Canadian pathology and lab medicine groups including:

- Participation in 'Choosing Wisely Canada' <http://www.choosingwiselycanada.org/>
- Participation in 'Lab Tests Online' with AACC <https://labtestsonline.org/>

CSCC supports LabCanDx (formerly MEDEC), the national association for the Canadian medical technology industry, in their efforts to promote the value of laboratory medicine.

CSCC supports participation in ToxLRN which is an initiative by Health Canada to create a network of toxicology laboratories in Canada.

CSCC provides support and professional encouragement for Trainees and Young Scientists, such as a travel grant funding and a special reception at the annual conference. CSCC also provides Trainee Elective Visit Grants which support short-term elective visits to other labs to provide lab medicine trainees with a unique opportunity to augment their skill sets.

CSCC holds an annual charity run at its annual conference and proceeds are donated to a local charity.

CSCC publishes a bi-monthly newsletter



## CHILE

### SOCIEDAD CHILENA DE QUÍMICA CLÍNICA (SCHQC)

#### NATIONAL MEETINGS

<i>Name of the meeting</i>	<i>Date</i>	<i>Topic</i>
Due to the COVID pandemic our scheduled National Congress meeting May 2021 was shifted to April 2022		

#### EDUCATION

Webinar: Automatización en el Laboratorio Clínico, 03 diciembre 2021 Claudio Suarez.

International Course: Estrategias y Herramientas para la gestión del Laboratorio: 10, 17 ,24 Noviembre y 01 diciembre 2021 Leonardo Aguirre.

Conversatorio: Situación actual del diagnostico del laboratorio clínico en la segunda ola de la pandemia COVID-19 03 agosto 2021 Maria Elena AREDONDO.

Conversatorio: Acreditación del laboratorio en tiempos de pandemia. 01 junio 2021 Roberto CARBONI.

Webinar: Valor del laboratorio clínico en el cuidado del paciente. 19 Mayo, Claudio Suarez.

Conversatorio: Vacunas. 06 abril 2021 Rosa E. Oyarce.

IFCC Global Conference on COVID-10. Critical role of clinica laboratories in the COVID-19 pandemic. 16 February 2021. Cecilia Tapia

#### REGIONAL RELATIONS

SChQC has collaborations with several associations of medical laboratory.

- COLABIOCLI(Confederacion Latioamericana de Bioquimica Clinica) as a full member
- APTM (Asociación Panamericana de Tecnólogos Médicos)

- WG: Preanalytic Phase LATAM- COLABIOCLI Eduardo ARANDA (member) and Maria Elena ARREDONDO (member)
- WG: Accreditation Management-COLABIOCLI Leonardo AGUIRRE (member)

## INTERNATIONAL RELATIONS

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Cooperation with other Societies members of COLABIOCLI and IFCC

- 2° Vocal EB COLABIOCLI: Maria Elena ARREDONDO
- Natinal representative IFCC: Eduardo ARANDA
- IFCC TF OSML Claudio SUAREZ (member)



## CHINA (TW) - REPUBLIC OF CHINA (ROC) – TAIWAN CHINESE ASSOCIATION FOR CLINICAL BIOCHEMISTRY (CACB)

## REGIONAL RELATIONS

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A contribution of national society report to APFCB News 2021 Issue 2 published in November 2021.

## ADDITIONAL INFORMATION

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CACB held the election for the new Executive Board 2021-2024 and its annual meeting on Oct 3rd, 2021. Dr. Huey-Jen Hsu, Chief Technologist and Leader of the Sample Collection Center, Department of Laboratory Medicine, National Taiwan University Hospital, was elected as the CACB President. The immediate past-president Ms. Hsiao-Chen Ning will serve as Executive Director. Dr. Woei-horng Fang continues to serve as Executive Director and National Representative for the same period. Dr. Ching-Ying Kuo was reappointed for a second term as The Secretary General.

Planning of 2022 events:

CACB held its Executive Board meeting and the year-end dinner gathering on December 13th, 2021 and planned for the upcoming 36th Joint Annual Conference of Biomedical Science (JACBS). The scientific symposium will focus on “Precision Laboratory Medicine and Sustainable Healthcare”. Four speakers have been invited to present the progress on identifying novel biomarkers and therapeutic targets for various diseases. The speakers include Dr. Khosrow Adeli, IFCC President and Professor at The Hospital for Sick Children/University of



CACB newly-elected president Dr. Huey-Jen Hsu (center in the front) and Board members 2021-2024.

Toronto; Dr. Wen-Chien Chou, Director of the Department of Laboratory Medicine at National Taiwan University Hospital; Dr. Sui-Yuan Chang, Professor of Clinical Laboratory Sciences and Medical Biotechnology, National Taiwan University and Dr. Wen-Hui Ku, CEO of Taipei Institute of Pathology



CACB president Dr. Huey-Jen Hsu (center in the front), Board members and guests of honor at the Executive Board meeting and Year-end dinner gathering on December 13th, 2021



## CZECH REPUBLIC

### CZECH SOCIETY OF CLINICAL BIOCHEMISTRY (CSKB)

#### NATIONAL MEETINGS

<i>Name of the meeting</i>	<i>Date</i>	<i>Topic</i>
XI. Young Biochemists Meeting	3.-4. NOV 2021	General biochemistry, education, Cases studies
XV.National Congress	10.-12 OCT 2021	General clinical biochemistry
CELME 2021	30. SEP- 1.OCT 2021	Laboratory management
Atherosclerosis 2021	15.-16 SEP 2021	Lipids diagnostics, prevention, treatment
VITATOX	4 -6 OCT 2021	Vitamins, antioxidants, drug monitoring, toxicology

#### EDUCATION

Pre-graduate education: 5-6 years, Medicine: M.D. (medical doctors), Ing. (engineer in chemical sciences) or RNDr. (doctor in natural sciences) or Mgr. (master in natural sciences), PharmDr. (pharmacy doctor)

Post-graduate education in Clinical biochemistry: 5 years, compliant with EFLM standards both M.D. and Ing, RNDr, Mgr., PharmDr. may obtain EuSpLM (European Specialist in Laboratory Medicine), additional post-graduate education is needed for Haematology, Microbiology, Immunology, Genetics and Pathology.

**Continuous Professional Development:** All categories may obtain certificates with CPD credits, registered by central authorities, at congresses and seminars.

**Patients' education:** Czech version of Lab Test online is available and being regularly updated under supervision of the Czech Society of Clinical Biochemistry (<https://www.labtestsonline.cz>)





## REGIONAL MEETINGS

<i>Name of the meeting</i>	<i>Date</i>	<i>Society's contribution for the meeting</i>
40th Regional Days in Karlova Studanka	9. -10. DEC.2021	Program supervision and auspices
Advent seminar in Liblice	25. -26. NOV 2021	Program supervision and auspices
Laboratory Potential in Medicine	25 OCT 2021	Program supervision and auspices, speakers
Monoclonal Gamopathy Working Day	5 OCT 2021	Program supervision and auspices, speakers
5th CSF Diagnostic Day in Ostrava	10 SEP 2021	Program supervision and auspices
Interlab 2021	1 JUN 2021	Program supervision and auspices
Laboratory Technicians Day – Covid 19 and Laboratory	31 MAY 2021	Program supervision and auspices, speakers

## INTERNATIONAL RELATIONS

10 members in 13 IFCC Committees and Working Groups

7 members in 11 EFLM Committees and Working Groups

## ADDITIONAL INFORMATION

Czech Society of Clinical Biochemistry (CSKB) supervises external quality control programme SEKK ([www.sekk.cz](http://www.sekk.cz))

Official CSKB society journal is “Klinicka biochemie a metabolismus”, reviewed since 1971, ISSN: 1210 – 7921, English article are acceptable. CSKB also co-edits FONS journal, ISSN 1211-7137.

National guidelines, opinions, instructions in 2021:

Recommendation for validation and verification of laboratory examination procedures in medical laboratories

The recommendation for expressing uncertainties of quantitative measurement results in the medical laboratories

Recommendations for the diagnosis of chronic kidney disease (estimation of glomerular filtration and of proteinuria examination)

Guidelines for the management of diabetic kidney disease

Recommendations on internal quality control

Recommendations on use of cardiac troponins I and T in cardiology

Recommendations on laboratory aspects of cardiac troponin determination



## NATIONAL MEETINGS

Name of the meeting	Date	Topic
XXII Summer School	August, 26-27	Intervals of repeat tests, markers of Alzheimer Disease, IVDR regulations, demands for the preanalytical process, quality goals, harmonization of protein electrophoresis in Estonia, HPV screening in Estonia, VIPIT, bacteriophages in medicine

## EDUCATION

Due to COVID-situation in 2021, a lot of planned events were cancelled

## INTERNATIONAL RELATIONS

**ESLM is the member of the following international organizations: IFCC, EFLM, BALM, ESCMID, EUCAST**

Marina Ivanova is the national representative in EUCAST

Helle Järv is a member of EUCAST subcommittee AFST

Kadri Klaos is the member of EUCAST subcommittee AMST

Marika Jürna-Ellam is the member of EUCAST subcommittee ECMM

Agnes Ivanov is a member in the IFCC Working Group “Laboratory Errors and Patient Safety” (WG-LEPS) and corresponding member in IFCC TF-POCT

Marge Kütt is a corresponding member in the EFLM Working Group „Patient Focused Laboratory Medicine“ (WG-PFLM)

Anna Velts-Lindh is a corresponding member in the IFCC working group TF-YS „Task Force Young Scientists“. Galina Zemtsovskaja is a corresponding member in IFCC working groups: Committee on Clinical Applications of Cardiac Biomarkers (C-CB); Committee on Bone metabolism (C-BM); Harmonization of Interpretive Commenting EQA (WG-ICQA)

Mikk Tooming is a corresponding member of IFCC working group Committee on Molecular Diagnostics (C-MD)

Kalle Kisand participated in activities of the scientific committee of EUROMEDLAB MUNICH 2021 (2022)

## ADDITIONAL INFORMATION

Together with Estonian Society of Bioanalysts, ESLM published issue No 7 (2021) of the journal „Eesti Laborimeditsiin“ („Estonian Laboratory Medicine“) (in March).

### There are 2 sections in ESLM:

- Section of clinical microbiology
- Section of laboratory physicians

### There are working groups in the fields of

- Laboratory terminology,
- LOINC (Logical Observation Identifiers Names and Codes),
- Laboratory Quality,
- Kidney Biomarkers,
- Cardiac Markers,
- Laboratory Hematology,
- Diagnostics of Urogenital Infections

- Protein electrophoresis
- Flow cytometry
- Method Harmonization

#### The following guidelines were compiled:

- Algorithm of protein tests in monoclonal gammopathies

17 laboratories are sending out-patient's laboratory test results electronically to the National Digital Health Record.

New forms of visual display of dynamical changes of test results are available since 2021 in National Digital Health Record.



## FRANCE SOCIÉTÉ FRANÇAISE DE BIOLOGIE CLINIQUE (SFBC)

### NATIONAL MEETINGS

<i>Name of the meeting</i>	<i>Date</i>	<i>Topic</i>
National meetings with SFBC auspices (+ SFBC members in the scientific committee)	~ BioMed J / September 16 & 17, 2021 / Paris	~ Practical daily clinical biology
	~ JFBM / October 6-8, 2021 / Rennes	~ Practical daily clinical biology
	~ Journées de Biologie Praticienne/ November 19 & 20, 2021 / Paris	~ Practical daily clinical biology

### EDUCATION

- Educational Committee chaired by Pr V. Sapin
  - Continuous professional development (DPC) and continuous medical education (CME) through SFBC scientific meeting sessions. V. Sapin is president of the National organism of Professional Development called "Biologie Clinique"
- Committee on Evaluation of Professional Practices (C-EPP) : chaired by Dr I. Aimone-Gastin (Nancy)
  - National Agreement SFBC as Validating Society for "EPP"
  - Relations with the Federation of Medical Specialities (FSM)

### REGIONAL MEETINGS and WEBINARS

#### Participation of SFBC members in International meetings

- IFCC Global Conference COVID-19 (February 15-17, 2021) / Virtual Conference / 3 posters:
- Quick results for biochemistry parameters in COVID 19 Disease: POCT or central laboratory testing: feedback from five teaching hospitals, around the world (Barguil Y et al., 2021)
- COVID-19: management by overseas and French-speaking clinical laboratories: feedback from the SFBC Biochemical markers of COVID-19" working group (Barguil Y et al., 2021)
- Biological prescription in suspect or positive patients for COVID-19 in France and French speaking territories (Beauvieux MC et al., 2021)



## REGIONAL RELATIONS

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EFLM: Participation of SFBC members

Functional unit	Name	Surname	Position
WG: Accreditation and ISO/CEN standards (WG-A/ISO)	Guilaine Michel	BOURSIER VAUBOURDOLLE	Chair Expert/Consultant
TG: European Laboratory Day (TG-ELD)	Bernard	GOUGET	Chair
TFG: Urinalysis (TFG-U)	Audrey Marine	MERENS PESTEL-CARON	Member Corresponding member
WG: Register	Hugo	ROUX	Member - Young Scientist
WG: Guidelines (WG-G)	Bérénice	SHELL	Member - Young Scientist
TF European regulatory affairs	Bernard	POGGI	Corresponding Member

## INTERNATIONAL RELATIONS

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- SFBC Committee on International Relations:
  - Prof. P. Gillery
  - Prof. J. Goudable
  - Dr B. Gouget
  - Pr M. Delpech
  - Dr L. Pieroni
  - Prof. V. Sapin
- SFBC representatives:
  - IFCC: Prof. P. Gillery
  - EFLM: Prof. J. Goudable
  - WASPaLM: Prof. P. Gillery, Dr G. Boursier
  - FIFBCML: Prof V. Sapin, Prof M. Delpech, Dr L. Pieroni
- Participation in the International Advisory Board of IFCC/EFLM meetings:
  - IFCC WorldLab Seoul 2022 (Pr P. Gillery, ISC Member)
  - Workshop “Barriers to global standardization of clinical laboratory testing: reference materials and regulations” (Pr P. Gillery, Member Organizing Committee), virtual meeting, December 2021
  - EFLM/IFCC EuroMedLab Munich 2022 (Pr P. Gillery, Chair of the Scientific Programme Committee, Joëlle Goudable, ISAB)
  - WorldLab - EuroMedLab Roma 2023 (Pr P. Gillery, Member of the Scientific Programme Committee)
  - IFCC Council, and chair Arabic Federation /FIFBCML session (Dr B. Gouget)
- SFBC: founding member of the FIFBCML: Fédération Internationale Francophone de Biologie Clinique et de Médecine de Laboratoire.
- Participation of SFBC members at National meetings of IFCC full member societies

### Participation of SFBC members in IFCC Committees and Working Groups

#### ✓ Scientific Division (SD)

Executive Committee  
Committees

- |  |   |
|--|---|
| – Standardization of Thyroid Function Tests (C-STFT) | V. Raverot, Member 2020-2022                            |
| – Molecular Diagnostic (C-MD)                        | K. Peoc’h, corresp. Member                              |
| – Traceability in Laboratory Medicine (C-TLM)        | A. Vassault, corresp. Member                            |
| – Bone markers (C-BM)                                | V. Delatour, Consultant<br>J.P. Cristol, corresp. Membe |



## Working groups

- Standardization of Procalcitonin assays (WG-PCT)
    - V. Delatour, Chair, 2018-2020
    - A. Boeuf, Member
    - H. Briand, Member
    - A.M. Dupuy, Member
    - P. Hausfater, Member
  
  - Standardization of Carbohydrate-Deficient Transferrin (WG-CDT)
    - F. Schellenberg, Member
  - CSF Proteins (WG-CSF)
    - S. Lehmann, Member
    - V. Delatour, Member
    - V. Delatour, Member
    - V. Delatour, Member
  - Commutability in Metrological Traceability (WG-CMT)
    - L. Pieroni, Corresp. Member
  - Apolipoproteins by Mass Spectrometry (WG-Apo MS)
    - R. Garnotel, Corresp. Member
  - Standardisation of Albumin Assay in Urine (WG-SAU)
    - G. Lefèvre, Corresp. Member
  - Standardisation of Pregnancy-Associated Plasma Protein (WG-PAPPA)
    - M. Arock, Corresp Member
  - Standardization of Troponin I (WG-TNI)
  - Standardisation of Hemoglobin A2 (WG-HbA2)
- ✓ **Education and Management Division (EMD)**
- Committees
- Committee on Point of Care Testing (C-POCT)
    - M. Vaubourdolle, Member
  - Committee on Education in the Use of Biomarkers of Diabetes (C-EUBD)
    - P. Gillery, Corresp. Member
  - Committee on Chronic Kidney Disease
    - J.P. Cristol, Corresp. Member
- Working Group
- Flow Cytometry (WG-FC)
    - C. Lambert, Chair, 2019-2021
- ✓ **Emerging Technology Division (ETD)**
- Committee on Mobile Health and Bioengineering in Laboratory Medicine (C-MHBLM)
    - B. Gouget, Chair, 2021-2023
  - Committee on Omics Translation (C-OT)
    - M. De Tayrac, Member, 2019-2021
  - Emerging technologies in Pediatric Laboratory Medicine (C-ETPLM)
    - A. Mailloux, Corresp. Member
- ✓ **Task Forces (TF)**
- Task Force on History (TF-H)
    - B. Gouget, Co-Chair, 2019-2021
  - Task Force on Global Newborn Screening (TF-NBS)
    - E. Lebretonchel, Member (Y.S), 2021-2023
  - Task Force on Global Lab Quality (TF-GLQ)
    - J.M. Giannoli, Member, 2021-2023
    - A. Perret-Liaudet, Member, 2021-2023
    - A. Vassault, Member, 2021-2023
  
  - Task Force for Young Scientists (TF-YS)
    - M. Lenski, corresp. Member

## ADDITIONAL INFORMATION

SFBC Board 2020

### Executive Board:

- President
  - Pr Vincent SAPIN
- Vice-President
  - Pr Katell PEOC'H
- Past-President
  - Pr Marc DELPECH
- General Secretary
  - Dr Marie Christine BEAUVIEUX
  - Dr Caroline MOREAU

- Treasurer  
Dr Philippe CHATRON
- Scientific Committee:  
Dr Laurence MOULY  
Dr Delphine COLLIN-CHAVAGNAC  
Dr Katell PEOC'H  
Dr Constance DELABY  
Dr Laurence PIERONI
- Editors in Chief ABC:  
Dr Isabelle AIMONE-GASTIN
- Educational Committee:  
Pr Philippe GILLERY  
Pr Joëlle GOUDABLE  
Dr Bernard GOUGET
- International Relations:  
Pr Marc DELPECH  
Dr Laurence PIERONI
- National Relations:  
Dr Marie-Françoise GAUDEAU-TOUSSAINT  
Dr Carole POUPON  
Dr Laurence MOULY  
Dr Mathieu KUENTZ  
Pr Jean-Louis BEAUDEUX  
Dr Jean-Philippe BASTARD
- Young Scientist & Resident:  
Dr Guilaine BOURSIER
- SIDIV (French Medtech):  
Mme Caroline BOULVIN



## INDIA

### ASSOCIATION OF CLINICAL BIOCHEMISTS OF INDIA (ACBI)

#### NATIONAL MEETINGS

<i>Name of the meeting</i>	<i>Date</i>	<i>Topic</i>
<b>47th Annual National Conference of Association of Clinical Biochemists of India.</b>	12 – 15th December 2021	<b>Theme: "Towards a better Tommorrow"</b>



**Address of Prof. LM Srivastava, President ACBI**



**Inaugural Ceremony in progress**



**Souvenir release**

## EDUCATION

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### ACBI National Conference – Kolkata

#### Workshops:

- Next Generation Sequencing,
- Flowcytometry,
- Statistics in Biomedical Research,
- Early Clinical Exposure,
- Pre-analytical Requirements and Ensuring Quality of Examination

**Dr. Tarnath Shetty** Memorial Oration (Popular Lecture Series) :Prof. Dr. Suhrita Pal, Hon'ble Vice Chancellor, WBUHS, on “**Personalized medicine: An overview**”.

**Plenary lecture: Dr Anant Mohan, Professor & Head, Department of Pulmonary Medicine, AIIMS, New Delhi** on “COVID-19: The progress made and future challenges”.

**K.L. Gupta Memorial Oration Award:** Padma Shri Prof Dr. Mammen Chandy, Director, Tata Medical Center, Kolkata on “Recent advances in cancer diagnosis and precision medicine”.

**Seth G.S. Medical College & K.E.M. Hospital Oration Award:** Dr. Barnali Das, Kokilaben Dhirubhai Ambani Hospital, Mumbai on “Clinical Chemistry & Immunoassay Test Results: Harmonization and Standardization of Discordant Notes”.

#### Symposia: Laboratory diagnostics of Covid

- **Dr Rahul Dev Sarkar:** role of ISARIC 4C score, D-Dimer, LDH, Ferritin, Procalcitonin, Troponin, IL-6 and CRP to predict diseased outcome in patients.
- **Dr. Ranajit Das:** Genomic variation underlies the severity of COVID-19 clinical manifestation in individuals of European descent”,
- **Dr Sohini Sengupta:** clinical outcome for using Remdesivir/ Tocilizumab during Cytokine Storm in severe COVID-19 infection.
- **Dr Indranil Halder** “Management of Allergic Rhinitis in Scenario Of Covid 19”.

#### Symposia: Recent advances in cancer diagnosis and precision medicine

- **Dr D. Raghunadharao:** Precision Diagnosis and Personalised Cancer Treatment
- **Prof. Jaishree Vaijanathappa:** nanovectors for targeted delivery of anticancer drugs
- **Prof Tapasya Srivastava** Epigenetic Signature of Active Methylation in the Hypoxic Niche of Gliomas
- **Prof. Mingma Lhamu Sherpa** gDNA from urine and oral samples

#### Symposia: Neurological diseases

- **Prof. Sanjeev Jain** Genetics guides to biological understanding of psychiatric disease
- **Prof. M. Faruq:** Genetic mapping of neurodegenerative disorders
- **Prof Subrata Sinha:** Neuronal differentiation pathway involved in dyslexia

#### Symposia: Renal Disease

- **Prof Sandeep Mahajan:** acute kidney injury (AKI) biomarkers,
- **Dr Mithu Banerjee** role of creatinine estimation for early diagnosis and tagging of AKI
- **Dr Purvi Purohit** generating timely lab alerts through laboratory information systems to detect early renal damage in AKI patients

#### Symposia: Biomedical Innovation & Development

- **Dr Debashree Chakraborty** computational tools that are available for studying protein stability



- **Dr Priyadarshi Dey** therapeutics that is able to control the amyloidogenesis process and inhibit fibril formation
- **Dr Partho Sarathi Ray** the miR-21-GSN-PDCD4 regulatory network as a crucial mediator of a macrophage quorum sensing mechanism for the control of inflammatory responses
- **Dr Souvik Maiti** Francisellanicida Cas9 (FnCas9) Editor Linked Uniform Detection Assay (FELUDA)

#### **IFCC symposium on emerging technology**

- **Prof. Sergio Bernardini**, Chair IFCC-Emerging Technology Division: application of augmented intelligence tools in medicine
- **Dr. Bernard Gouget**, Chair IFCC Committee on Mobile Health and bioengineering in Lab Medicine: smart technologies to tackle COVID-19
- **Prof. Damien Gruson**: laboratory medicine assisted by AI companions for data integration

#### **Symposia: Cardiovascular and Coagulation disorders**

- **Dr. Sanja Stankovic**, Serbia: pharmacogenetics (PGx) of cardiovascular drugs, available PGx information and genetic tests
- **Dr Renu Saxena**: Pathogenesis of thrombotic stroke in young
- **Dr. Anita Khalil**: infantile markers of cardiovascular diseases
- **Dr. Vimal Mehta** atherosclerotic cardiovascular disease
- **Dr. Devaki R Nair** laboratory investigations required for step wise diagnosis of dyslipidemia.

**Awadhesh Saran Memorial Oration:** Prof Saumitra Das, Director, NIBMG Kalyani :Hepatitis C Virus: Life in the liver.

**Dr. T. N. Pattabiraman Oration Award:** Dr Shyamali Pal Proficiency Testing - Purpose and Perspective

#### **Symposia: AACC-India Section: Technology Advances & Challenges**

- **Dr Stephen R. Master**, Philadelphia, USA: fundamental rationale for expanding the traditional laboratory emphasis on single-analyte diagnostics into higher-dimensional analytical frameworks
- **Dr. Joe El-Khoury**, Yale School of Medicine: evaluation of Pneumatic Tube Systems
- **Dr. Lakshmi V. Ramanathan**, New York: Interferences in immunoassays

#### **Symposia: Molecular Diagnostics and Genetics**

- **Dr Ashwin Dalal**: Various techniques used in molecular diagnosis of genetic muscle diseases
- **Dr Anju Shukla**: applications of microarray CGH and exome sequencing in genetic diagnostics
- **Dr Govindraj**: integrative approach for diagnosing mitochondrial disorders

#### **Symposia: IFCC- Global e-Learning/eAcademy**

- **Dr Hikmet Can Çubukçu**, Ankara University Stem Cell Institute, Turkey: Overview of e-learning in the context of e-learning platforms in laboratory medicine
- **Prof Rania El Sharkawy**: new e-learning trends in Clinical Laboratories in the post COVID era
- **Dr Adrian Park** from Addenbrooke's Hospital, Cambridge, UK: Role of IFCC Taskforce on Global E-learning;
- **Dr Prasenjit Mitra**: scenario of eLearning in India

#### **Symposia: Pediatric Biochemistry & Inborn Errors of Metabolism**

- **Prof. K Vaidyanathan** molecular diagnostics in inherited metabolic disorders
- **Dr Anibh M Das** biochemical, pathophysiology, clinical symptoms and therapy of



hepatorenal tyrosinaemia.

- **Dr Kallol K Set Prof. James R Bonham**, President of International Society for Neonatal Screening from Sheffield's Children's Hospital, NHS, UK Newborn Screening for Inherited Metabolic Disorders

**Mrs & Dr. G P. Talwar Oration Award** Lecture Prof. Partha P. Majumder Genomics of Immune-Response to Typhoid and Cholera Vaccines

**Symposia: IFCC-TFYS Artificial intelligence in clinical diagnosis'**

**Symposia: Clinical Immunology'**

**Symposia: Hormone related Disorder**

**IFCC- CCLM Symposium on Laboratory Management and Leadership**

- **Prof Praveen** Sharma Value based Laboratory Medicine Practice: Opportunities and Challenges
- **Dr. Ed Randell** High Impact initiatives that improve laboratory utilization.
- **Dr Raja Elina RajaAziddin** significant role of laboratory medicine specialists in clinical decision making
- **Dr. Merve Sibel Gungoren** the potential benefits of laboratory data and informatics tools for test utilization management.

**Free Paper Sessions** by 36 delegates

**Oral Award categories** :Thirteen young investigators presented their work and vied for the awards.

**236 poster presentations**

**AFMC Quiz contest**

**Industrial Workshop and Scientific activities:** MolBio Diagnostics Pvt, Agappe Diagnostics Ltd, Transasia BioMedicals Ltd, Abbott Healthcare Pvt Ltd., Thermo Fisher Scientific India Pvt Ltd, Roche diagnostics.

**Due to ban on physical meetings during the year, the association organized a series of webinars to keep our members engaged and informed. Eminent scientists from India and abroad were invited to participate in the webinars. The following webinars were organized;**

**ACBI Webinar** Flowcytometry & its Application in Laboratory Diagnostics  
26<sup>th</sup> March 2021

**MODERATOR**  
**Lal Chandra**  
Director Professor (Biochemistry)  
Maulana Azad medical College  
Delhi

**SPEAKERS**

**Amar Ranjan**  
Additional Professor (Pathology)  
All India Institute of Medical Sciences  
New Delhi

**Kannan Vaidyanathan**  
Professor (Biochemistry)  
Amrita Institute of Medical Science & Research Center  
Kochi

**Basics of Flowcytometry- Principle & Interpretation of Results**

**Role of Flowcytometry in Oncology Diagnostics**

Registration link (Please scan QR code)  
[https://zoom.us/join/zoom/register/WN\\_TG55NN3t3M2wF2Cct12A26w](https://zoom.us/join/zoom/register/WN_TG55NN3t3M2wF2Cct12A26w)  
Date: 26<sup>th</sup> March 2021 Time: 1 pm IST onwards

Contact: Dr Praseeraj Mitra, Coordinator, ACBI Webinar, AIIMS Jodhpur, [prasa@aiimsjodhpur.com](mailto:prasa@aiimsjodhpur.com)



**ACBI Webinar** **Practical applications of Six Sigma in Clinical Laboratory Medicine**  
5<sup>th</sup> February 2021





**ACBI Logo**

**MODERATOR**  
**Praveen Sharma**  
Professor  
Biochemistry  
AIIMS Jodhpur

**SPEAKERS**  
**Barnali Das**  
Consultant  
Biochemistry & Immunology  
Kokilaben Dhirubhai Ambani Hospital  
& Medical Research Institute, Mumbai


**Aditi Gupta**  
Lead Consultant  
Biochemistry  
Aster Labs, Bengaluru

**Saantwana Vernekar**  
Founder & Chief Trainer  
QTCMS, Mumbai



**In Quest of Laboratory Management Reform: Lean-Six Sigma Holds The Key**      **Demystifying the role of IQC and EQAS in Clinical Laboratory Medicine**      **Six Sigma - Requirements and way ahead**

**Registration link (Scan QR code)**  
Date: 5<sup>th</sup> February 2021 Time: 3 pm IST; 10.30 am CET  
Contact: Dr Prasenjit Mitra, AIIMS Jodhpur, [prasjit@gmail.com](mailto:prasjit@gmail.com), [mitraj@aiimsjodhpur.edu.in](mailto:mitraj@aiimsjodhpur.edu.in)



**ACBI Webinar** **Deciphering the Biochemical Conundrum of COVID-19**  
26<sup>th</sup> February 2021





**ACBI Logo**

**MODERATOR**  
**Medha Rajappa**  
Associate Dean (Research),  
Additional Professor (Biochemistry),  
JIPMER, Puducherry

**SPEAKERS**  
**Narayanan P.**  
Professor (Pediatrics),  
JIPMER, Puducherry


**Nandeeshu H.**  
Additional Professor (Biochemistry)  
JIPMER, Puducherry

**Ramesh R.**  
Professor (Biochemistry),  
JIPMER, Puducherry



**Multi-System Inflammatory Syndrome (MIS-C) in Children: Is it a new entity?**      **Laboratory Perspective of COVID-19: A Panoramic View from the Biochemistry Perspective**      **Teaching Biochemistry in COVID times: A Medical Educator's Perspective**

**Registration link (Scan QR code)**  
[https://zoom.us/join/zoom/register/WN\\_o0VKE2XVjRLmh5JNq5wt\\_1hw](https://zoom.us/join/zoom/register/WN_o0VKE2XVjRLmh5JNq5wt_1hw)  
Date: 26<sup>th</sup> February 2021 Time: 3 pm IST onwards  
Contact: Dr Prasenjit Mitra, Coordinator, ACBI Webinar, AIIMS Jodhpur, [prasjit@gmail.com](mailto:prasjit@gmail.com)



## REGIONAL RELATIONS

Many members of ACBI are also actively participating in the affairs of APFCB. Dr Praveen Sharma (Jodhpur), Dr. Pradeep Dabla, Dr Purvi Purohit, Dr Prasenjit Mitra as chairpersons/ members of various divisions & sub-committees.

## INTERNATIONAL RELATIONS

Many members of ACBI are actively participating in the affairs of IFCC. Dr Praveen Sharma, Dr. Pradeep Dabla, Dr Prasenjit Mitra, Dr Seema Bhargava, Dr Barnali Das & Dr Sudip Datta are chairpersons/members of various divisions & sub-committees of IFCC.

## ADDITIONAL INFORMATION

The 48<sup>th</sup> Annual National Conference of the association will be held in New Delhi in November-December 2022. The organizing secretary is Dr Seema Bhargava.

**The following were elected as office bearers of ACBI for the year 2022:**

### PRESIDENT:

**Dr. Subir Kumar Das,**  
Professor & Head,  
Department of Biochemistry  
College of Medicine & JNM Hospital, WBUHS  
Kalyani, Nadia 741235, West Bengal

## **VICE PRESIDENT (I) & ORGANIZING SECRETARY, ACBICON 2022**

### **Dr. Seema Bhargav**

Chairperson and Senior Consultant  
Department of Biochemistry & Professor  
GRIPMER, Sir Ganga Ram Hospital  
New Delhi, India

## **VICE PRESIDENT (II)**

### **Dr. Kanan Vaidyanathan**

Professor & Head  
Department of Molecular Biology  
Amrita Institute of Medicine  
Kochi - 682 026 Kerala, India

## **ADVISOR**

### **Prof. K.P. Sinha**

Director, Biochem Lab  
East Boring Canal Road  
Patna-800001, India

## **SECRETARY:**

### **Dr. Rajiv Ranjan Sinha,**

Professor & Head,  
Department of Biochemistry,  
Government Medical College,  
Bettiah. W. Champaran, India

## **TREASURER:**

### **Dr Krishna Ranjan Prasad,**

Professor, Dept.of Biochemistry, Katihar Medical College  
A-12 Sector D, Kankerbagh Colony  
Patna - 800 020. Bihar, India

## **JOINT SECRETARY:**

### **1. Dr. Prasenjit Mitra**

Assistant Professor, Department of Biochemistry  
PGIMER, Sector - 12  
Chandigarh – 160 012, India

### **2. Dr Tanmay Saha**

Assistant Professor, Dept. Of Biochemistry  
College Of Medicine & JNM Hospital  
WBUHS. Hospital Road  
Kalyani- 741235. WB, India

## **ZONAL COUNCIL MEMBERS**

### **North Zone:**

#### **Dr. Dharamveer Yadav**

Assistant Professor, Dept. of Biochemistry  
S.M.S. Medical College  
Jaipur – 302 004, India



**South Zone:****Dr Medha Rajappa,**

Additional Professor of Biochemistry,  
 Department of Biochemistry,  
 Second Floor, Academic Centre,  
 Jawaharlal Institute of Postgraduate  
 Medical Education & Research (JIPMER)  
 Dhanvantari Nagar, Puducherry-605006, India

**West Zone:****Dr Barnali Das**

Consultant, Laboratory Medicine,  
 Kokilaben Dhirubhai Ambani Hospital  
 & Medical Research Institute  
 Mumbai – 400053, India

**Central Zone:****Dr. Sukhes Mukherjee**

Associate Professor, Dept of Biochemistry  
 All India Institute of Medical Sciences  
 Bhopal- 462020  
 Madhya Pradesh, India

**East Zone:****Dr. Vanita Lal**

Professor & Head, Department of Biochemistry  
 AIIMS, Panchayat Training Institute  
 Daburgram, Jasidih  
 Deoghar- 814142, Jharkhand, India.

**HONG KONG**

**HONG KONG SOCIETY OF CLINICAL CHEMISTRY  
 (HKSCC)**

**NATIONAL MEETINGS**

<i>Name of the meeting</i>	<i>Date</i>	<i>Topic</i>
HKSCC Annual General Meeting	23rd January 2021	--
HKSCC Online Seminar	5th June 2021	1. QA and QC Monitoring in LC-MS Analysis by Dr. Richard Kin-ting KAM (PWH) 2. Result interpretation in RCPAQAPs: Experience sharing by Ms. Judy Po-shan LAI (QEH) 3. EQAP Problem Discussion Forum (Submitted cases from participants) by Dr. Iris Hiu-shuen Chan (PWH)



## EDUCATION

A seminar was held on 5th June via Zoom platform. There were three presentations by invited local speakers: 'QA and QC Monitoring in LC-MS Analysis' by Dr. Richard KT Kam, Prince of Wales Hospital, 'Result interpretation in RCPAQAPs: Experience sharing' by Ms. Judy PS Lai, Queen Elizabeth Hospital, 'EQAP Problem Discussion Forum (Submitted cases from participants)' by Dr. Iris HS Chan, Prince of Wales Hospital.

A 2-day Industrial Presentation Webinar was held on 9th October 2021 and 27th November 2021. Eleven presentations were delivered by representatives of eleven industrial partners include:

- Biomarkers In Traumatic Brain Injury - Exploring Utility in Clinical Care by Abbott
- Intelligent Automation system defines the next generation of clinical laboratory by Beckman Coulter
- Pre-analytical challenges: Impact HIL on patient results & importance to detect – QC approach around serum indices by Bio-Rad Laboratories, Inc.
- From underlying risk to early recognition and prevention of Heart Failure in Type 2 Diabetics by Roche Diagnostics (Hong Kong)
- How SCIEX ZenoTOF 7600 can help improving MS/MS data quality by SCIEX
- MicroSlide technology, A1c Slide design/performance and clinical uses of A1c by Ortho Clinical Diagnostics
- The application of M2BPGi for assessing HCC by Sysmex Hong Kong Ltd
- Implementing Cascadion: Analytical and clinical perspectives by Thermo Fisher Scientific
- New LC-MS Test Method to Advance Critical Infectious Disease Research by Waters China Ltd
- Rapid lab-quality BMP test benefits risk stratification and prioritization of high-risk acutely ill patients by Werfen



## HUNGARY

HUNGARIAN SOCIETY OF LABORATORY MEDICINE  
(MLDT)

## NATIONAL MEETINGS

<i>Name of the meeting</i>	<i>Date</i>	<i>Topic</i>
60th National Congress of the Hungarian Society of Laboratory Medicine	26-28 August, 2021	Clinical chemistry, molecular biological diagnostics, diagnostics of diabetes, diagnostics of COVID-19, extra-analytical phase of laboratory investigations, postgraduate education
QualiCont Forum 2021	7 May, 2021	External quality assessment, tumor markers, direct oral anticoagulants, COVID-19 in children

## EDUCATION

COVID-19 vaccination and immune response, 5 May, 2021, online, postgraduate education – SARS-CoV-2 variants, immune response, antibodies, antibody lab tests.

## REGIONAL RELATIONS

Regionally, Hungarian specialists in laboratory medicine conventionally have good relations with similar experts in Croatia, Austria and Romania. Some colleagues working in Hungarian labs originally come from Romania.

## INTERNATIONAL RELATIONS

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IFCC Communications and Publications Division, Vice Chair: Prof. János Kappelmayer  
IFCC, eJIFCC, Editor: Prof. János Kappelmayer  
IFCC Communications and Publications Division, Working Group-eJIFCC, Members:  
Prof. Tamás Kőszegi, Prof. Gábor L. Kovács  
IFCC Scientific Division, Committee on Bone Metabolism, Member: Dr. Harjit Pal Bhattoa  
EFLM Science Committee, Working Group: Postanalytical Phase, Expert/Consultant: Dr. Éva Ajzner  
EFLM Education and Training Committee, Working Group: Congresses and Postgraduate Education, Member: Dr. Zsuzsa Bagoly  
EFLM Communication Committee, Working Group: Promotion and Publications, Chair: Dr. Harjit Pal Bhattoa  
EFLM EuroLabNews, Editor: Dr. Harjit Pal Bhattoa  
EFLM Profession Committee, Task Group: EFLM Syllabus Course, Member: Dr. Harjit Pal Bhattoa

## ADDITIONAL INFORMATION

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There were also some other postgraduate educational courses in our field (laboratory medicine) organized by medical universities independently of our national society.



## IRELAND ASSOCIATION OF CLINICAL BIOCHEMISTS IN IRELAND (ACBI)

## NATIONAL MEETINGS

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<i>Name of the meeting</i>	<i>Date</i>	<i>Topic</i>
43rd Annual Conference	12th November 2021	Sepsis, Fertility, Renal

## EDUCATION

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ACBI Webinar 1st April 2021: Dr Michael Cornes. The Cress Checklist.

## REGIONAL MEETINGS

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<i>Name of the meeting</i>	<i>Date</i>	<i>Topic</i>
ACB Republic of Ireland regional scientific meeting	29th January 2021	Jointly organised with ACBI

## REGIONAL RELATIONS

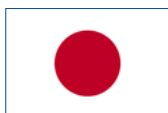
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EFLM working group corresponding members  
Pre-analytical Phase: Dr Seán Costelloe  
Register: Navidad Rico Rios  
Distance education and e-learning: Dr Graham Lee

## INTERNATIONAL RELATIONS

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IFCC Committee on Point of Care testing corresponding member: Ruth O'Kelly



## NATIONAL MEETINGS

<i>Name of the meeting</i>	<i>Date</i>	<i>Topic</i>
The 61th Annual Meeting of the Japan Society of Clinical Chemistry	2021/11/5-11/7	<p>1 Special Lectures:</p> <ol style="list-style-type: none"> <li>Past, present and future of Shinshu University Hospital, Department of Laboratory Medicine- (Honda T)</li> </ol> <p>2 Educational Lectures:</p> <ol style="list-style-type: none"> <li>Japanese thrombophilia and its test method: A new coagulation test that can recognize the hypercoagulable state</li> <li>Egg regeneration technology and future development</li> </ol> <p>1 International symposium:</p> <ol style="list-style-type: none"> <li>Current status of COVID-19 in Europe, Asia and Japan</li> </ol> <p>11 Symposia:</p> <ol style="list-style-type: none"> <li>Practice of biochemical test operation using plasma</li> <li>Contribution of clinical chemistry in Organ on a Chip</li> <li>Study the old to understand the new: A discovery story from Kyushu engraved in the history of medicine</li> <li>Quality assurance in gene-related tests</li> <li>Difficulties in developing clinical diagnostic agents</li> <li>Future quality assurance of clinical chemistry</li> <li>Fusion and application of knowledge and technology gained in pharmaceutical research to clinical chemistry research</li> <li>Pitfall case report / discussion meeting in clinical examination 2021</li> <li>Future of clinical chemistry with new liquid biopsy</li> <li>Future map of medical big data</li> <li>Future map of LC-MS in clinical examination</li> </ol>

## INTERNATIONAL RELATIONS

In all annual meeting of JSCC and regional meetings in Japan, educational lectures on various clinical chemistry related subjects, such as standardization, analytical methods, and laboratory related trouble shootings were performed by the specialists of clinical chemistry. In addition, clinical chemistry related companies held various types of symposiums and educational meetings in all over Japan all the year round.

Educational Lecture for Certified Clinical Chemistry and Immunochemistry Quality Assurance Medical Technologists and Professions were held in Tokyo on Nov 7, 2021.

## REGIONAL MEETINGS

<i>Name of the meeting</i>	<i>Date</i>	<i>Society's contribution for the meeting</i>
Hokkaido branch: The 31st branch general & regular meeting	Sep 4, 2021	Each branch supervises the meeting of each region
Kanto branch: The 29th branch general meeting	Jun 12, 2021	Each branch supervises the meeting of each region
Chugoku & Shikoku branch: The 31st branch general & regular meeting	Feb 13, 2021	Each branch supervises the meeting of each region

## INTERNATIONAL RELATIONS

SD Committees:

- Reference Standardization of Thyroid Function Tests (C-STFT): Akira Hishinuma, Member

- Nomenclature, Properties and Units (C-NPU) in collaboration with IUPAC: Koh Furuta, Member  
SD Working Groups:

- Immunosuppressive Drugs (WG-ID): S Masuda, Member
- Pancreatic Enzymes (WG-PE): Shigeru Ueda, Member
- Fecal Immunochemical Testing (WG-FIT): S Takehara, Y Doi, M Fujimura, T Fukuda, H Hayashi, T Ichiyanagi, T Kosaka, Y Masuda

Education Management Division (EMD) Committees:

- Education in the Use of Biomarkers in Diabetes (C-EUBD): Asako Sato, Member

Emerging Technologies Division (ETD) Committees:

- Committee on Mobile Health and Bioengineering in Laboratory Medicine (C-MHBLM):  
Kazuhiko Kotani, Member

International Journal Editor

Associate Editors for Annals of Clinical Biochemistry: Kazuhiko Kotani

Editorial Board of Clini Chimica Acta:

Nobuo Okumura, Editorial Board  
Masato Maekawa, Editorial Board  
Takashi Miida, Editorial Board  
Minoru Tozuka, Editorial Board  
Katsuyuki Nakajima, Editorial Board  
Akihiro Inazu, Editorial Board

## ADDITIONAL INFORMATION

About 1,950 members including MD and PhD belong to JSCC and 9 blocks were divided as each centre of JSCC.

The annual meeting is held once a year and more than 300 papers are discussed in the meeting and the regional meetings were held once a year in each region and interesting symposiums and special lectures are planned by an annual president of the meeting.



**KOREA**  
KOREAN SOCIETY OF CLINICAL CHEMISTRY (KSCC)

## NATIONAL MEETINGS

<i>Name of the meeting</i>	<i>Date</i>	<i>Topic</i>
Korean Society of Clinical Chemistry (KSCC) Biannual Spring Meeting	May, 21, 2021	Session 1-1. Practical Issues in Specimen Collection
		Session 1-2. Laboratory Tests for Endocrine Disorders in Children and Adolescents
		Session 2-1. Utilization of Healthcare Data
		Session 2-2. The Latest Laboratory Guidelines and Practices





<i>Name of the meeting</i>	<i>Date</i>	<i>Topic</i>
Korean Society of Clinical Chemistry (KSCC) Biannual Fall Meeting	October, 21, 2021	Session 1-1. Current State of Laboratory Quality Management VI
		Session 1-2. The Latest Trends in Drug of Abuse Testing
		Session 2-1. Education Workshop
		Session 2-2. The New Biomarkers

## EDUCATION

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The first half

- RC1. Laboratory Statistics
- RC2. Laboratory Management
- RC3. Tumor Markers
- RC4. Cardiac Markers
- RC5. Lipids & Lipoproteins

The second half

- RC1. External quality assessment in clinical chemistry
- RC2. Interpretation and corrective action of proficiency test results
- RC3. Basic requirements for total laboratory automation
- RC4. Useful information resources in clinical chemistry
- RC5. Standardization status of clinical chemistry tests
- RC6. Practical methods for evaluating assay performances
- RC7. Understanding POCT
- RC8. Preanalytical variables
- RC9. Enzymes part I
- RC10. Enzymes part II
- RC11. Urine dipstick test and sediment analysis
- RC12. Analysis of body fluids in clinical chemistry

## REGIONAL RELATIONS

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1. One council member for International Affairs in KSCC has the correspondence activity for the international (IFCC) or for the regional (APFCB) works.  
KSCC sent the 2021 annual report to APFCB on January 24, 2022.
2. Announcement of members of the web seminar hosted by APFCB.:  
APFCB Masterclass in Interpretative Commenting, Topic: Diabetes Tests (2021. 4. 28)

## INTERNATIONAL RELATIONS

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1. KSCC recommended Jehoon Lee, President of KSCC, as a member of ISAB. Worldlab-Euromedlab 2023 International Scientific Advisory Board (ISAB).
2. KSCC was delegated of logistics of authority from IFCC-EFLM to facilitate participation in the EuroMedLab (24th IFCC-EFLM European Congress of Clinical Chemistry and Laboratory Medicine).

## ADDITIONAL INFORMATION

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### The Officer Bearer of KSCC 2022

1. President: Jehoon Lee  
Department of Laboratory Medicine, The Catholic University of Korea, Eunpyeong St. Mary's Hospital  
e-mail: lyejh@catholic.ac.kr, kscc1111@gmail.com

2. Secretary General: Hyung-Doo Park  
Department of Laboratory Medicine and Genetics, Samsung Medical Center,  
Sungkyunkwan University School of Medicine  
e-mail: hyungdoo.park@samsung.com
3. Treasurer: Sung Eun Cho  
Green Cross Laboratories  
e-mail: secho0824@gmail.com
4. Scientific Affairs Director: Sollip Kim  
Department of Laboratory Medicine, Inje University, Ilsanpaik Hospital,  
e-mail: lalacopine@gmail.com
5. International Affairs Director: Jaewoo Chung  
Department of Laboratory Medicine, Dongguk University Ilsan Hospital  
e-mail: jwchung@dumc.or.kr
6. Secretary: Kyung A Choi  
Office Address: A1105-Asterium Seoul, 372 Hangang-daero, Yongsan-gu, Seoul, 04323,  
Republic of Korea  
e-mail: kscc@kscc.or.kr
7. Official email of KSCC: kscc1111@gmail.com



**LATVIA**  
LATVIAN SOCIETY OF LABORATORY MEDICINE (LLSB)

**NATIONAL MEETINGS**

<i>Name of the meeting</i>	<i>Date</i>	<i>Topic</i>
Association meeting	31.03.2021.	Topical issues in immunology
Association meeting	20.05.2021.	SARS-Cov-2 - actualities
Association meeting	25.11.2021.	Hemostasis



**LIBYA**  
LIBYAN ASSOCIATION OF CLINICAL  
PATHOLOGY (LACP)

**NATIONAL MEETINGS**

<i>Name of the meeting</i>	<i>Date</i>	<i>Topic</i>
The Sixth conference of sustainable development.	12-14 December 2021	<ol style="list-style-type: none"> <li>a. Dr. Aisha NASEF presented a talk on importance of "Organizational Cultures and Values in establishment of quality culture" as an essential requirement for sustainability.</li> <li>b. Dr. Najat El-Kemeshi, presented a talk on importance of Quality Services in good health.</li> </ol>
Quality in medical education	04-January-2022	Governance in Medical schools

## EDUCATION



	<b>Topic</b>	<b>Date</b>
1	Introduction to Quality	6 November 2021
2	Quality Culture	12 November 2021
3	Quality standards in medical laboratories (ISO 15189)	15 November 2021
4	Auditing and accreditation of medical laboratories	20 November 2021
5	WHO Model of Laboratory Quality Management system	04 December 2021
6	Laboratory Safety	11 December 2021
7	Occurrence Management	18 December 2021
8	Organization in Medical Laboratories	25 December 2021
9	Medical laboratory document and record Control	30 December 2021
10	Equipment's and Inventory Management	30 December 2021
11	Process Control and Continuous Improvements	08 January 2021
12	Customer satisfaction	08 January 2021
13	Personnel Management	15 January 2021
14	Assessment; EQA, PT in Medical Laboratories	15 January 2021
15	Process Control: QC of quantitative and semi- quantitative test	22 January 2021

<b>Date</b>	<b>Topic</b>	<b>Facilitator</b>
2021/10/10	Leukocyte type and function	Tahani Netfa
2021/10/11	leukocyte count in benign disorder relative and absolute increase or decrease	Tahani Netfa
2021/10/14	Acute leukemia	Tahani Netfa
2021/10/17	Chronic Leukemia	Tahani Netfa
<b>Date</b>	<b>Topic</b>	<b>Facilitator</b>
3/10/2021	Hemolytic anemia	Nafesa Al-Mahdawei
4/10/2021	Hemoglobinopathy	Nafesa Al-Mahdawei
2021/12/7	Morphology of anemia I	Nafesa Al-Mahdawei
2021/12/14	Morphology of anemia II	Nafesa Al-Mahdawei
16/12/2021	Myeloproliferative disorder investigation	Nafesa Al-Mahdawei
<b>Date</b>	<b>Topic</b>	<b>Facilitator</b>
27/06/2021	Donor selection criteria, Blood component, Blood group system (revision for 1st part exam)	Najat Be-Kasim
23/11/2021	blood transfusion: an overview	Najat Be-Kasim
1/12/2021	Blood component	Najat Be-Kasim
08/12/2021	Red blood cell: description, preparation, storage, dosage, indication, modified product	Najat Be-Kasim
2021/12/22	Platelets, Fresh frozen plasma, and Cryoprecipitate: description, preparation, storage, dosage, indication.	Najat Be-Kasim
<b>Date</b>	<b>Topic</b>	<b>Facilitator</b>
2021/11/22	HemostasisII: perform bleeding time, T.T, fibrinogen level & D.Dimer	Faiza Debaeba
2021/22/29	Determination of reticulocyte count, PCV, RBCs indices	Faiza Debaeba
2021/12/14	Interpretation Hb. Electrophoresis	Faiza Debaeba
<b>Date</b>	<b>Topic</b>	<b>Facilitator</b>
2021/9/26	Nutritional anemia IDA	Afaf Al-Denali
2021/9/27	Macrocytic anemia	Afaf Al-Denali
2021/10	Reference range of CBC, histograms analysis	Afaf Al-Denali



2021\10	Preparation of blood smear, check RBCs, WBCs, Plt	Afaf Al-Denali
2021\10	PBF reading ,plt ,D /CRBCs morphology	Afaf Al-Denali
2021/9/26	Nutritional anemia IDA	Afaf Al-Denali
<b>Date</b>	<b>Topic</b>	<b>Facilitator</b>
19/09/2021	Hematopoesis	Amal Al-Fakhri
22/09/2021	Introduction to hemolytic anemia	Amal Al-Fakhri
12/2021	Nutritional anemias IDA	Amal Al-Fakhri
12/2021	Morphology of anemia	Amal Al-Fakhri
<b>Date</b>	<b>Topic</b>	<b>Facilitator</b>
2021/12/12	Nosocomial infection	Jamila Al-shiki
2021/12/12	Culture media	Jamila Al-shiki
2021/12/21	Collection of microbiological Samples	Jamila Al-shiki
<b>Date</b>	<b>Topic</b>	<b>Facilitator</b>
2021/12/2	Pre analytic requirements	Hanan Hassen
2021/11/12	Secondary homeostasis	Hanan Hassen
2021/11/2	Primary homeostasis	Hanan Hassen
<b>Date</b>	<b>Topic</b>	<b>Facilitator</b>
7\12\2021	Introduction of hematology	Luban Al-Oshibi
2021\12\12	Myeloproliferative disorder	Luban Al-Oshibi
2021\12\21	Chronic leukemia (Lymphoid)	Luban Al-Oshibi

**Clinical Immunology. Lectures and Practical, by Dr. Fatma Najem**

<b>Date</b>	<b>Topic/Lecture/(Immunology)</b>	<b>Practical</b>
2021\2\7	Introduction and general review for quality management system requirements	A tour of the laboratory sections and a follow-up of the samples from drawing to entering the result, with knowledge of the types of samples received in the laboratory
2021/2/8,11	Serological tests in clinical immunology : introduction	CRP test , Rheumatoid factor , pregnancy test
2021/2/14,15	Principle I of serology techniques visible (non-label) assay: agglutination, precipitation ,and complement fixation	Coombs test
2021/2/18,21	Principle of serology techniques non-visible (label ) assay : RIA , IFA, ELISA	HIV ELISA test, HbsAg , HCV ab ELISA
2021 /2/24,25	Immunoblotting assay	Confirmatory test for HIV (western blot)
2021/3/3	Mixed lymphocyte culture , Flow cytometry principle	Discussion of some previous flow cytometer reports ( immune phenotyping panel )
2021/3/4	Immune chromatographic assay	Rapid test for HIV, HCV, HBsAg
2021/3/7	lab diagnosis of syphilis	ASO TITRE, VDRL RAPID
2021 /3/10	Chemiluminescence techniques	RUBELLA lab diagnosis (IgG, IgM)
2021/3/14	Principle of molecular techniques (PCR)	HCV VIRAL LOAD PCR RUN , COVID 19 PCR RUN
2021/3/18	Autoimmunity assay	TWO RESULT OF ANA profile test (immunob-lotting assay)



<b>A series of activities were given by Dr. Hana Al-Monfe</b>	
<b>Dates</b>	<b>Topics</b>
5/1/2021	Introduction to diagnostic biochemistry laboratory
12/1/2021	Urine analysis
7/1/2021	Spectrophotometer \principles &Components
6/1/2021	Electrolytes and blood gas analysis/
13/1/2021	Immunochemistry

<b>Preparation of educational materials about the biological, Physical and Chemical hazards in medical laboratories.</b>		
1	1. Hanan Hussien 2. Faten abdalla Ahmed 3. Naja Mahmoud belgasem	Biological Hazards
2	1. Moner ALorefe 2. Rania AL-Mohandes	Physical Hazards
3	1. Ghada Ali Abbas 2. Fatma Mohamed Aldarat 3. Halima Yousef Alsaity 4. Saad Abdul Qader Hashem 5. Hend Rafa Awad 6. Zubida Ali Eljjhawe 7. Hend Alsheka 8. Awatef Mohamed zoubi 9. Sami - Alabed	Chemical Hazards

Preparation of educational materials:

A-Classification of Medical Laboratories according to safety.

Prepared by: Dr. Dalal Ahmed Thwood, Dr. Najat Alkomeshi, Dr, Aisha NASEF

B- O-microns : prepared by Dr. Maren Farhat.

## REGIONAL MEETINGS

<b>Name of the meeting</b>	<b>Date</b>	<b>Society's contribution for the meeting</b>
Palestinian Society		Two Talks
Quality Standards in occupational health and safety	13-14 June 2021	Attendance
Automated Anti-D quantification in immunization and prophylaxis.	Feb 13, 2021	Each branch supervises the meeting of each region
Part of Biorad transfusion Science webinar	15-April-2021	Attendance
From good practice to best practice in blood and blood components GPG GMP. EuBIS-PEI_WS	8-9 September 2021	Participation
Certificate of Laboratory Quality Management system, Basics. WHO	21 November 2021	Course Completion
Organizational learning	24 November 2021	Course Completion
Quality standards in higher education	24 April 2021	Participation

## REGIONAL RELATIONS

1. Institute de Pasteur /Tunis.
2. University of Monastir
3. Egyptian Board

## ADDITIONAL INFORMATION

LACP participated on following virtual meeting, where a summary regarding current situations and challenges facing our speciality in Libya:

1. Online meeting with GIZ for their project for health in Libya.
2. Online meeting with The Statistical, Economic and Social Research and Training Centre for Islamic Countries (SESRIC) for health reform in Libya.

### **Establishment of Clinical Pathology departments in the Faculty of Medicine/ Tripoli.**

LACP trying to highlight the primordial role of the clinical pathologist in bridging the gap between clinical services and the medical laboratories. So, a proposal has been prepared and presented to the Dean of Tripoli Faculty of Medicine, in order to replace the existing model of medical teaching by clinical teaching in clinical pathology departments in Faculty of Medicine.

### **Establishment of First Genetics Laboratory**

As, LACP are serve as an advocate to develop this speciality in Libya, we are going to meet Tunisians colleagues to start training on genetics and to transfer know how gradually, while working in parallel for procurements of equipment's and needed materials by solicitation for financial support and donation!

First Step was contact of Libyan personnel and collection of CVs to form the team. In process, 2 persons send thier CVs.

Second step: Visit of Tunisian genetic lab on 25 January 2022.

**LACP Members participated on the first on line clinical pathology examination** Organized by the Arab Board for Health Specializations on 29 November 2021 at Tripoli



## **LITHUANIA** LITHUANIAN SOCIETY OF LABORATORY MEDICINE (LLMD)

## NATIONAL MEETINGS

<b>Name of the meeting</b>	<b>Date</b>	<b>Topic</b>
Joint Conference of the LLMD, the Association of Private Healthcare Providers and Vilnius University (on-line)	03-02-2021	Current opinions in diagnostics of COVID-19 infection
Joint Conference of the LLMD, the Lithuanian Society of Cardiologists and Vilnius University (on-line)	04-03-2021	Anti-thrombotic treatment
13th Annual Conference of the Lithuanian Society of Laboratory Medicine (on-line)	28-04-2021	Aspects of the professional ethics in laboratory medicine
National LLMD Conference (hybrid)	14-10-2021	What clinicians should know, and what laboratories should perform (dedicated to World Thrombosis Day)
National LLMD Conference (on-line)	12-11-2021	Laboratory medicine of 2021: an overview

## REGIONAL RELATIONS

Lithuanian Society of Laboratory Medicine (LLMD) is member of Baltic Association of Laboratory Medicine (BALM). Other 2 members of BALM are: Latvian Society of Laboratory Specialists and Estonian Society of Laboratory Medicine. The main task of the Association – organization of Baltic Congresses of Laboratory Medicine held every second year in one of the Baltic Countries (upcoming scheduled for 2022).

## INTERNATIONAL RELATIONS

LLMD is the member of IFCC, EFLM and Clinical and Laboratory Standards Institute (CLSI); partner of The Global World Thrombosis Day Movement.



## MALAYSIA MALAYSIAN ASSOCIATION OF CLINICAL BIOCHEMISTS (MACB)

## NATIONAL MEETINGS

<i>Name of the meeting</i>	<i>Date</i>	<i>Topic</i>
<b>31st MACB Conference 2021 – A Virtual Conference</b>	21-22 June, 2021	The conference with the theme 'Empowering Laboratory Services in Keeping with Technology Advancement' highlighted the latest technology advancements in laboratory medicine and its possible future applications in Malaysia.
<b>Pre-AGM Scientific Meeting</b>	26 October, 2021	<ul style="list-style-type: none"><li>• Method Verification of Qualitative Tests</li><li>• Forum on Lot-to-lot Verification</li></ul>
<b>31st MACB Annual General Meeting (AGM) 2021</b>	26 October, 2021	The annual general meeting in 2021 was held virtually.

## EDUCATION

### 1. Method Verification on 5 May 2021

The lecture was delivered by Dr. Joshua Hayden, PhD DABCC FAACC, Chief of Chemistry for Norton Healthcare. This webinar discussed the practical approaches that laboratories can take to ensure adequate assessment of new methods. The webinar was supported by Medicins. A total of 631 participants registered for the webinar of which 350 attended the live event. Of the total participants, 64% were Malaysians. Other participants who registered were from Philippines, Macau, Singapore, United States, Sri Lanka, Palostan, Oman, Indonesia, India and Bangladesh. Recording and webinar presentation slides for the lecture are available at the following link:

### 2. Breathing Not Properly: Heart Failure – Insights on Natriuretic Peptides on 6 May 2021

The lecture was delivered by Dr Pearline Teo, the Clinical Marketing Manager for Laboratory Diagnostics at Siemens Healthineers. The webinar presented the pathophysiology, diagnosis and classification of heart failure and the importance of Natriuretic Peptides (BNP and NT-proBNP) in the diagnosis, prognosis and management of Heart Failure. The best practice sharing from AP region on the clinical utility of Natriuretic Peptide assays in Asia Pacific was also discussed. This webinar was supported by Siemens Healthineers and received 175 registrations and 69 attendees. Recording on the webinar is available on this link: <https://www.siemens-healthineers.com/en-my/news-and-events/events-malaysia/macb-heart-failure>



### 3. A Practical and Standardized Approach to tackle Reagent Lot-to-Lot using CLSI's EP26 on 5 Aug 2021

This lecture was delivered by Mr Norizhar bin Mohamed Zakaria, the Clinical Quality Manager at Siemens Healthineers. This lecture presented the utilization of a standardized and practical approach to document and evaluate reagent lot to lot difference with CLSI's EP26. It discussed the possible scenarios that may arise when evaluating or performing lot to lot differences using EP26's protocol and actions that can be taken. The webinar was supported by Siemens Healthineers and had 364 registered participants with 202 attendees for the live event.

### 4. Chemical Screening of Urine by Reagent Strip on 10 Aug 2021

The lecture was delivered by Associate Prof. Dr. Pavai Sthaneshwar, Chemical Pathologist in Pathology Department, University Malaya. The lecture emphasised on the correct urinalysis testing procedure and guidelines to ensure correct patient results. This webinar was supported by Siemens Healthineers. A total of 512 participants registered for the event with 198 live attendees.

## REGIONAL MEETINGS

Name of the meeting	Date	Society's contribution for the meeting
Asian Conference on Biomedical Research & Lab Medicine (ACBRLM) 2021	24-26 August, 2021	Conference Organiser  The virtual conference with the theme "Revolutionizing Laboratory Medicine Through Research and Innovation" was jointly organised by the Malaysian Association of Clinical Biochemists (MACB), the Malaysian Biomedical Science Association (MyBiomed) and the Association of Scientific Officers Ministry of Health (ASOMH).

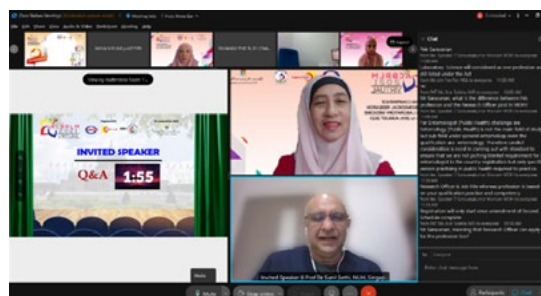
## REGIONAL RELATIONS

### 1. MACB is a member of APFCB

- The MACB has a good working relation with the APFCB and has representatives in several APFCB committees:
  - Chair of the APFCB Committee on Communications and Publications (C-CP) – Dr Raja Elina Raja Aziddin.
  - Chair of the Task Force on APFCB-WASPaLM TF-CKD – Associate Prof. Dr. Pavai Sthaneshwar.
  - Member of the APFCB Committee on Education and Laboratory Management (C-ELM) – Dr Raja Elina Raja Aziddin.

### 2. APFCB participation in MACB activities

- National society members of the APFCB attended webinars and conferences that were organised by the MACB.
- Professor Praveen Sharma, the Chair of the APFCB Conference and Congresses Committee delivered a lecture at the 31st MACB Conference 2021.
- Prof Sunil Sethi, President of APFCB and Dr July Kumalawati from the Indonesian Association of Clinical Chemistry (IACC) delivered lectures at the ACBRLM 2021.



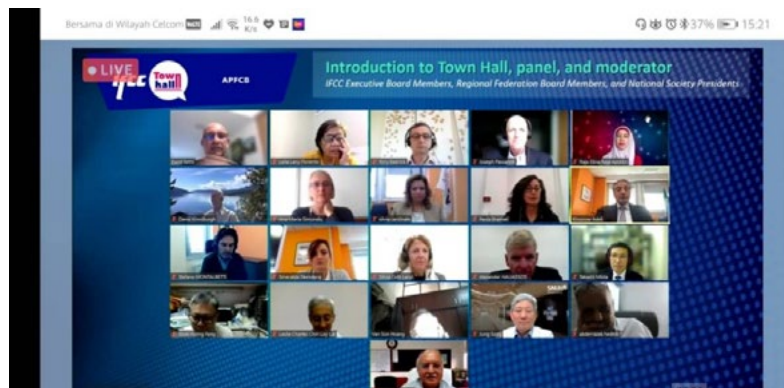
ACBRLM lecture on the topic of Innovations in Diabetes and its impact on Disease Monitoring by Assoc. Prof. Dr Sunil Sethi, President of APFCB



## INTERNATIONAL RELATIONS

### 1. MACB is a member of the IFCC

- The MACB has representatives in several IFCC committees:
  - Member of the IFCC Committee on Clinical Laboratory Management (C-CLM)- Dr Raja Elina Raja Aziddin
  - Corresponding member of the IFCC Committee on Point of Care Testing (C-POCT) – Dr Baizurah Mohd Hussain.
  - Corresponding member of the IFCC Committee on Reference Intervals and Decision Limits C-RIDL – Dr Raja Elina Raja Aziddin.
- The MACB participated in the IFCC Townhall that was organized for the APFCB region on 20th October, 2021.



MACB participation at the IFCC Townhall organized for the APFCB region

### 2. MACB is a member of the EFLM- Academy

- The MACB made a block enrolment for its members to the EFLM e-Academy for 2021. On 3rd June 2021, the president of MACB attended a zoom meeting that was organised by the EFLM for National Societies who are members of the Academy.

## ADDITIONAL INFORMATION

### 1. Project on Method Evaluation for TSH, PCT and HFABP diagnostic kits

The MACB coordinated a research project in 2020 that was completed in 2021. The project was a collaboration between Hospital Canselor Tunku Muhriz UKM (HCTM UKM), Malaysian Association Clinical Biochemist (MACB) and Shenzhen New Industries Biomedical Engineering Co., Ltd. (SNIBE).

### 2. Ministry of Health Malaysia (MOH) Revised Guidelines on Method Verification

MACB representatives are members of the MOH Committee on Revised Guidelines on Method Verification.

### 3. Project on Measurably Better Healthcare Performance

The MACB launched the project to encourage inter-disciplinary collaboration and to promote a value-based approach in the delivery of laboratory medicine services. The first meeting on the project was held virtually on 9th December 2021. Representatives from leading government and private hospitals and laboratories attended the meeting. The MACB president gave a briefing on the project and Mr Lim Yew Khuay from Abbott presented some examples of projects from winners of the Univants Award program. This project is supported by Abbott Laboratories and is due to start in early 2022.





**NORWAY**  
NORWEGIAN SOCIETY OF MEDICAL  
BIOCHEMISTRY (NSMB)

### NATIONAL MEETINGS

<i>Name of the meeting</i>	<i>Date</i>	<i>Topic</i>
Annual meeting	28 oct 2021	New information concerning lipids, pediatric reference values, koagulation tests, ULTRADIAN - dynamic hormone diagnostics.

### EDUCATION

Working groups:

1. Lipids
2. Pediatric reference values
3. Environmental pollutants and human health

### ADDITIONAL INFORMATION

All members of NSMB are currently members of EFLM academy for 2022



**PALESTINE**  
PALESTINIAN MEDICAL TECHNOLOGY  
ASSOCIATION (PMTA)

### NATIONAL MEETINGS

<i>Name of the meeting</i>	<i>Date</i>	<i>Topic</i>
General Conference Meeting	4-6 June, 2021	General Assembly Meeting
PMTA Social Solidarity Fund Meeting	3-4 July, 2021	Yearly meeting of the assembly members of the Social solidarity fund.
Laboratory Services Pricing Committee	7-9, August, 2021	To price all the lab. Tests and services.

### EDUCATION

<i>Clinical Leadership and Management Course</i>		
<i>Lecture Name</i>	<i>Lecturer</i>	<i>Date</i>
Clinical Leadership and Management	Dr. Osama Najjar	15/1/2021
Laboratory Personal Management Techniques	Mr. Nidal Alawneh	16/1/2021
Corrections in Hematology Parameters	Mr. Ayman Najjar	17/1/2021
Team Development in the Lab	Dr. Amjad Hussein	18/1/2021
Time Management Skills to Benefit Lab	Dr. Wafa' Menawi	19/1/2021
The Leader as Visionary Motivator	Dr. Osama Najjar	23/1/2021
Laboratory Informatics Dealing with Laboratory Data to Enhance Laboratory Results	Mr. Basem Abu Al Rub	10/2/2021
Medical Laboratory Quality Management and Accreditation/ session1	Mr. Abd Al Raouf Saleem	21/3/202
Medical Laboratory Quality Management and Accreditation/ session2	Mr. Abd Al Raouf Saleem	22/3/2021
Design of Experiment (DOE) an easy Short Method to Access Research Results	Mr. Ahmad Saya'ra	3/11/2021



<b>Clinical Leadership and Management Course</b>		
<b>Lecture Name</b>	<b>Lecturer</b>	<b>Date</b>
Prevalence and Antimicrobial Susceptibility Patterns of Silent Bacteriuria among Pregnant Women	Dr. Ikram Fayyad	9/12/2021
Elisa Techniques Principles, Types and other Labeled Immunoassays	Dr. Noor Abu Tayem	11/12/2021
Elisa Standard Curve and Sources of Error	Dr. Noor Abu Tayem	12/12/2021
How to Deal with Data Obtained from Elisa	Dr. Noor Abu Tayem	13/12/2021
Phenotype and Genotype Identification of Catalase Negative Staphylo Coccus aureus	Dr. Ma'moun Aubeidia	22/12/2021
Impact of Delay Biopsy and Pathology Report Turned Around Time on Cancer Disease	Mr. Basem Abu Al Rub	29/12/2021

## REGIONAL MEETINGS

<b>Name of the meeting</b>	<b>Date</b>	<b>Society's contribution for the meeting</b>
COVID-19 National Epidemiology Committee	2021	<ul style="list-style-type: none"> <li>• Policy for PCR tests.</li> <li>• Policy for Rapid Ag test.</li> <li>• Monitoring COVID-19 Labs.</li> </ul>
ISO 15189 Accreditation Unit in the Ministry of Economics	All the year	
Lab. Reagents and instruments registration Unit in the Ministry of Health.	All the year	
Lab. Licensure in ministry of Health	All the year	
Continuing Education department in Ministry of Health.	All the year	
National Medical Research department in the Palestinian Universities	All the year	

## REGIONAL RELATIONS

Member of the AFCB.

PMTA president is the elected president of the AFCB.

PMTA is a member in the following:

- ISO 15189 Accreditation Unit in the Ministry of Economics.
- Lab. Reagents and instruments registration Unit in the Ministry of Health.
- Lab. Licensure in ministry of Health.
- Continuing Education department in Ministry of Health.
- National Medical Research department in the Palestinian Universities.

## INTERNATIONAL RELATIONS

Member in the IFCC.

More than 3000 participations from our members in the IFCC live webinars.

## ADDITIONAL INFORMATION

Since 2010 we establish the Palestinian National Laboratory Professionals week to raise the awareness of the vital role of the lab. in the health cycle. In this week (from 24th April – 1st of May) we do more than 100 activities in all our 11 subcommittees in Palestine. The final day 1st of May which is also the International Labour Day we make a festival for our members and their families.



## NATIONAL MEETINGS

Name of the meeting	Date	Topic
Meeting with the Minister of Public Health	May 07, 2021	Meeting with the Minister of Health, the Legal Department and representatives of Human Resources to promote the law of the sanitary career
Meeting Scientific Committee of the ABP	May 18, 2021	ALAM Congress 2021 organization
Commemoration of the Paraguayan Biochemist's Day	December 14, 2021	Commemoration cocktail of the Paraguayan Biochemist's Day and launch of the printed material of the Biochemist Law No. 5986/17 and its Regulation Decree No. 5412/21
Meeting with the Minister of Public Health	December 20, 2021	Request the rectification of Dinavisa (Dirección Nacional de Vigilancia Sanitaria) resolution 300/21, in relation to the collection and processing samples for detection of the SARS-CoV-2 virus in pharmacies

## EDUCATION

- Virtual Course: The importance of the Pre analytical Phase in Laboratory Analysis, **March 5 to 6, 2021.**
- Pre-Congress Course: Update in Clinical Biochemistry, **May 28 to 29, 2021.**
- IX National Congress of Clinical Biochemistry and 1st Congress of Biochemistry in Clinical Laboratory Sciences within the framework of the XXV Latin American Congress of Microbiology ALAM, **Virtual format.** Organizing Committee: President - Dr. José Pereira, Vice President - Dr. Raquel Cáceres, Secretary of Finance - Dr. Mercedes Álvarez, President of the IX National Congress of Biochemistry and the 1st Congress of Biochemistry in Clinical Laboratory Sciences - Prof. Dr. Montserrat Blanes. **August 27 to 30, 2021,**
- International Course "Leadership of Young Professionals in Clinical Laboratories. A challenge after the pandemic" Scholarship recipients: Bioq. Johanna Giménez and the Bioq. Verónica Baruja, **March, 2021.**
- "First Virtual Symposium on Updating in the Hematology Laboratory", fellow: Griselda Viviana Guillén Duarte, **May 11, 2021.**
- XIII AEFA-OF Virtual Ibero-American Conference, Candy Giannina Santacruz Ayala, **from May 29 to June 4, 2021.**
- XXVII International Congress of the Latin American Cooperative Group on Haemostasis and Thrombosis", Deisy Bordón Álvarez, **August 18 to 21, 2021.**
- Virtual International Diploma in Clinical Microbiology (1st Generation)", scholarship recipient: Saúl Andrés Añazco Duarte, **September 26, 2021.**
- 4th. Virtual Congress of Clinical Biochemistry VIRTUALAB 2021, Johanna Isabel Giménez Palacio, **November 1 to 13, 2021.**
- "International Course, Strategies and Tools for Laboratory Management", Cristina Mariel Britez Alderete, **November 10, 17, 24 and December the first, 2021.**
- II International Virtual Congress 2021: "The Laboratory in Times of Change", Natalie Weiler Gustafson, **from November 12 to 14, 2021.**

## REGIONAL MEETINGS

<i>Name of the meeting</i>	<i>Date</i>	<i>Society's contribution for the meeting</i>
Ordinary meeting of the Executive Committee of the Latin American Confederation of Clinical Biochemistry		attendance
Ordinary meeting of the Executive Committee of the Latin American Confederation of Clinical Biochemistry		attendance
Ordinary meeting of the Executive Committee of the Latin American Confederation of Clinical Biochemistry	November 17, 2021	attendance

## REGIONAL RELATIONS

- Quality Week in Clinical Laboratories **April 6 to 8, 2021**. Coordinators: Bioq. Johanna Isabel Giménez Palacio and Bioq. Veronica Baruja
- Accreditation Management Working Group, Bioq. Edgar Rodrigo Ayala Torres.
- Blood Bank Working Group, Dr. Elsi Vargas de Salinas
- Colabliocli Ethics Group, Dr. Marta Ascurra and panelist of the 2nd Cycle of Conversation Colabliocli 2021
- Colabliocli Group of Young Scientists, Johanna Isabel Giménez Palacio, **08-13-2021**

## INTERNATIONAL RELATIONS

- Participation in meetings of the Euromedlab Central Organizing Committee, **February 22, April 26, May 25, July 21 and October 11**; (plus 14 meetings and email queries), Prof. Dra. Montserrat Blanes.
- Online meetings of the Working Group IANT, Prof. Dra. Montserrat Blanes.
- WG IANT IFCC meeting within the framework of the XXV Latin American Congress of Microbiology ALAM, **August 25, 2021**; Prof. Dra. Montserrat Blanes.
- Application for sponsorship to the IFCC and processing of 2 visiting Lectureship Programme, Prof. Dra. Montserrat Blanes as President of the IX National Congress of Clinical Biochemistry and 1st Congress of Biochemistry in Clinical Laboratory Sciences within the framework of the XXV Latin American Congress of Microbiology ALAM.
- Member of the Clinical Molecular Biology Committee Curriculum (C-CMBC) period (2021-2023) IFCC, Prof. Dra. Graciela Russomando.
- IFCC Taskforce on Global Newborn Screening, Dr. Marta Ascurra
- Participation of the national representative in voting and in promoting the activities of the IFCC



## AUDI ARABIA SAUDI SOCIETY FOR CLINICAL CHEMISTRY

## NATIONAL MEETINGS

<i>Name of the meeting</i>	<i>Date</i>
3rd International Meeting in Clinical Chemistry & Laboratory Medicine & 7th Annual Meeting Saudi Society for Clinical Chemistry, Saudi Arabia (virtual meeting)	30th Nov. - 3rd Dec. 2021



<b>Name of the meeting</b>	<b>Date</b>
<p>Saudi Society for Clinical Chemistry held the 3rd International Meeting in Clinical Chemistry &amp; Laboratory Medicine &amp; 7th Annual meeting 30th November - 3rd December 2021 virtually.</p> <p>The Annual Conference started on 30th November 2021 with a Pre-conference workshop on Toxicology. The keynote lecture was presented by ex-presenter of AFCB Prof. Abderrazek Hedhili with a session dedicated for young scientists and other seniors covering latest update in forensic toxicology.</p> <p>The second and third day, 1st – 2nd December 2021 covered general topics in clinical chemistry including laboratory biomarkers of diseases, pre-analytic issues and a session dedicated to:</p> <ul style="list-style-type: none"> <li>- Post conference workshop was on POCT with speakers from USA, UK, Canada, Regional, and Local.</li> <li>- Four industry workshops covering, Automation, Biomarkers, POCT and New technology.</li> </ul> <p>Clinical laboratory companies including international and local representatives held a dedicated session within the conference. The sponsored companies were more than 10; Diamond (ROCHE, SNIBE DIAGNOSTIC, &amp; ABBOTT), Platinum (SIEMENS HEALTHINEERS), Golden (BECKMAN), Silver (AnalyticaOne, MINDRAY, BECTON DCKINSON, &amp; ABDULLA FOUAD), Bronze (ALREDWAN, SAMA MASA, BINDING SITE, ALJEEL, TAMER, SEBIA, &amp; DAR AL ZAHRAWI,).</p> <p>Conference partners; International Federation of Clinical Chemistry and Laboratory Medicine (IFCC), The Arab Federation of Clinical Biology (AFCB), American Society for Clinical Pathology (ASCP), Saudi Commission for Health Specialties (SCFHS), Saudi Society for Clinical Laboratory Sciences (SSCLS), Saudi Quality Council &amp; Virtual Medical Academy, Low Carbs Society, and Saudi Point-of-Care Testing.</p> <p>By the end of the meeting there was Poster Session Awards Announcement with 27 posters printed, and 5 prizes for the best 5 posters (photos attached below) with a total amount of 20,000 SR.</p> <p>The total activities held by the SSCC in 2021 are summarized in the following table:</p>	

	<b>ACTIVITY</b>	<b>PLACE</b>	<b>TYPE</b>	<b>DATE</b>	<b>CME</b>
1	Laboratory Biomarkers of Diseases-Liver Diseases	Online	workshop	Jan 25,2021	2 Hrs.
2	1st Journal Club Meeting	Online	Journal Club	Feb 07,2021	2 Hrs.
3	Participation in a virtual conference in Tunisia entitled: 1st EFLM-AFCB Conference "Laboratory Medicine For Mobile Societies" XXXIVth National Days of Clinical Biology Dr.Hosam Zowawi Topic: The Silent Pandemic of Antimicrobial Resistance in the GCC countries and MENA region	Virtual	Conference	Feb 18-20,2021	----
4	Laboratory & Clinical Application of High Sensitivity Cardiac Troponin Tests	Online	webinar	Feb 24,2021	2 Hrs.
5	Symposium on the occasion of World Rare Disease Day	Online	Awareness	Feb 28,2021	----
6	Video in conjunction with World Rare Disease Day	website	Awareness	Feb 28,2021	----
7	SPOCT Saudi Point of Care Testing Association POCT Series 1: Diabetes Mellitus	Online	workshop	Mar 09,2021	3 Hrs.
8	Series Laboratory Biochemistry of Diseases: Heart Disease	Online	webinar	Mar 22,2021	2 Hrs.
9	SPOCTA Club Meeting Saudi Council for Health Specialties	Online	webinar	Mar 24,2021	2 Hrs.
10	Entrepreneurship in the health field	Online	Awareness	Mar 30,2021	----
11	Patient-Centered Blood Gas Testing at the Point-of-Care with an Intelligent Approach to Quality Management	Online	workshop	Mar 31,2021	3 Hrs.



	ACTIVITY	PLACE	TYPE	DATE	CME
12	International Lab Week and Quality Seminar Program	Online	Seminar	April 07,2021	7 Hrs.
13	2nd Journal Club Meeting 2021 King Abdulaziz Medical City - Jeddah	Online	Journal Club	April 11,2021	2 Hrs.
14	Type 2 diabetes	Online	Awareness	April 28,2021	-----
15	Hepatitis : Common Facts	Online	Awareness	May 26,2021	----
16	Series Laboratory Biomarkers of Diseases: Thyroid Diseases	Online	workshop	May 31,2021	2 Hrs.
17	SPOCTA: Saudi Point of Care Testing Association POCT Series III: Coagulation	Online	workshop	June 8,2021	3 Hrs.
18	3rdSSCC Journal Club Meeting 2021	Online	Journal Club	June 15,2021	3 Hrs.
19	Med Lab 2021	Dubai	Booth	June 24-21 ,2021	----
20	Improving Pre-Analytical Practice for Blood Gases and Related Analyses	Online	webinar	July 14,2021	2 Hrs.
21	Laboratory Biomarkers of Diseases: COVID-19 Disease: Vaccination & Serology Markers	Online	webinar	Sept.14, 2021	3 Hrs.
22	Patient Safety in Acute Care setting The role of Point of Care testing in patient safety, implications on clinical practice	Online	webinar	Sept. 17,2021	3 Hrs.
23	4th SSCC Journal Club Meeting 2021	Online	Journal Club	Sept. 20,2021	2 Hrs.
24	POCT Series IV: Blood Gas Testing	Online	webinar	Oct.12,2021	3 Hrs.
25	Osteoporosis and its treatment	Online	Awareness	Oct.19, 2021	----
26	Breast cancer between health empowerment and the role of science	Online	Awareness	Oct. 31, 2021	----
27	Role of Laboratory G6PD testing and clinical interpretation	Online	webinar	Nov. 9, 2021	2 Hrs.
28	Our lifestyle and diabetes	Online	Awareness	Nov.14, 2021	---
29	Successful Strategy for Laboratory Accreditation	Online	webinar	Nov. 20, 2021	2 Hrs.
30	3rd International Meeting in Clinical Chemistry & Laboratory Medicine & SSCC 7th Annual Meeting	Virtual	Conference	Nov. 30, 2021 To Dec. 3, 2021	23 Hrs.
31	Immune Deficiency Syndrome	Online	Awareness	December 21,2021	---
	Total				73 Hrs

## EDUCATION

- Many free educational webinars and workshops were held throughout 2021. They are shown in the table above. Most of them were focused on COVID-19 lab updates, prevention and precaution.
- Saudi Society for Clinical Chemistry supported some members to attain AACC (POCT) certificate program.

## REGIONAL MEETINGS

<i>Name of the meeting</i>	<i>Date</i>	<i>Society's contribution for the meeting</i>
MedLab Dubai	June 21-24, 2021	Speakers for Scientific Sessions Med Lab 2021, Dubai.

## REGIONAL RELATIONS

- 1st March 2021 the SSCC joined the Arab Federation Clinical Biology (AFCB) and has become part of the one of the regional federations of the IFCC. This will support the society to share common goals for education of laboratory medicine with the AFCB.
- SSCC participated with a lecture 1st EFLM –AFCB conference – February 18-20, 2021, Laboratory Medicine for Mobile Societies, XXXIVth National Days of Clinical Biology, The Silent Pandemic of Antimicrobial Resistance in the GCC Countries and MENA Region: Dr. Hossam Zawawi (KSA).

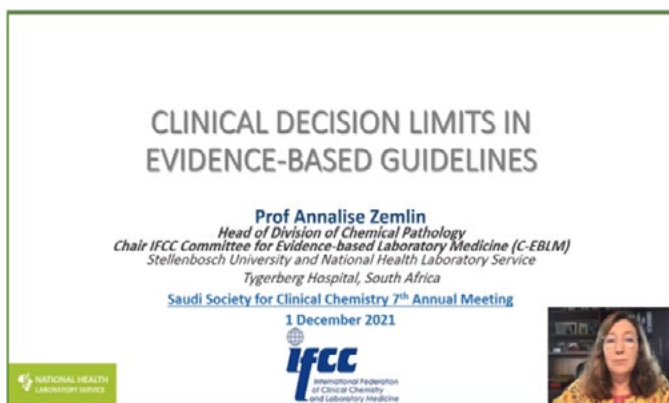
## INTERNATIONAL RELATIONS

- Collaboration between the ASCP and SSCC has continued

## ADDITIONAL INFORMATION

Photos from different events throughout 2021:

The 7th Annual meeting for the SSCC held on 30th November – 3rd December 2021:



**Report** prepared by  
Anwar Borai, PhD, FAACC  
Section Head, Clinical Biochemistry  
Associate Prof. KSAU-HS, Jeddah, Saudi Arabia  
King Abdulaziz Medical City





## NATIONAL MEETINGS

<i>Name of the meeting</i>	<i>Date</i>	<i>Topic</i>
22 <sup>nd</sup> Serbian Congress of Medical Biochemistry and Laboratory Medicine with international participation, and 16th Belgrade Symposium for Balkan Region	September 23-25th 2020 Due to COVID-19 Congress and Symposium moved to September 2022	The new concept in quality management in medical laboratories, organization of external quality control in laboratory and pre-analytical and analytical errors management: Diagnostics and treatment by utilizing new generation of laboratory methods and innovations in personalized medicine; Novel trends in laboratory medicine and the risk assessment of metabolic and endocrine disorders.  Accreditation in medical laboratories  <a href="http://www.dmbj.org.rs">www.dmbj.org.rs</a>
23 <sup>th</sup> Annual Ivan Berkeš Scientific Conference	November 7th 2021, Belgrade III CONGRESS OF MEDICAL BIOCHEMISTS SRUDENTS TIM (TMB-BPSA) on November 7th at the Pharmaceutical Faculty, University of Belgrade.	In 2020, the year of the global pandemic the activities of the Society of Medical Biochemists of Serbia (SMBS) were suspended. and the annual scientific conference "Professor Ivan Berkeš" did not take place. However, the year 2020 was also the year of the 110th anniversary of the birth of Professor Ivan Berkeš. On this occasion, SMBS published the monograph "Life and work of Professor Ivan Berkeš and Foundation laureates: where are they and what are they doing today" dedicated to professor Berkeš's life and work, and to the laureates of its annual award. The authors of the monograph are Professor Nada Majkić-Singh, the founder of the Foundation and its spiritus movens, and Snežana Jovičić, who, as the IFCC eNewsletter liaison member, was writing a series of articles covering the conference over the past years.  However, the Foundation did not miss to hand the well-deserved awards to the best students of the Faculty of Pharmacy in 2021, Suzana Savić (Master of Pharmacy-medical biochemist) and Andrea Atanasov (Master of Pharmacy). SMBS congratulate them on their first success, wishing them fruitful careers in pharmacy and medical biochemistry, like the ones their predecessors have.

## EDUCATION

1. Quality Indicators: pre-preanalytical and pre-analytical phases of laboratory diagnostic investigation
2. Laboratory Management
3. Novelties in Laboratory Medicine
4. QM development and application in accredited laboratory
5. Laboratory safety
6. Validation of the Laboratory Methods
7. Laboratory Medicine Environmental Health and Safety

16<sup>th</sup> NTK – Accredited Laboratories Conference was held on September 08, 2021.

Under the auspices of Society of Medical Biochemists of Serbia (SMBS), the 16th NTK – Accredited Laboratories Conference was held on September 08, 2021. This Conference was traditionally held within International Conventions on Quality in the organization of the United Association of Serbia for Quality (UASQ), Belgrade, Serbia. Lectures within the Conference

were accredited by the National Accreditation Body of Serbia, held via the online platform Cisco webex, and lasted 6-hours. The Conference was chaired by Prof Nada Majkić-Singh (SMBS), Belgrade, Prof Zorica Šumarac, Center for Medical Biochemistry, Clinical Center of Serbia, Belgrade and Assistant Professor, Neda Milinković, Department of Medical Biochemistry, University of Belgrade - Faculty of Pharmacy, Belgrade, Serbia. The 16th NTK-Accredited Laboratory Conference was dedicated to innovations and trends in the implementation of overall quality management in routine medical biochemical laboratories, which contributes to the development of safe laboratory diagnostics. Interpretation of laboratory results was discussed. The importance of knowing bias regarding the challenges in standardization and harmonization of routine measurement methods was also topic of this Conference. The participants of this conference are extremely satisfied with the content of the lectures and presentations, which was confirmed by the average grade of 5.0, which was given to the all lecturers and presentations.

## REGIONAL MEETINGS

<i>Name of the meeting</i>	<i>Date</i>	<i>Society's contribution for the meeting</i>
28th Meeting of Balkan Clinical Laboratory Federation, Sofia	September 08-11, 2021	SMBS MEMBERS PARTICIPATEs WITH FOUR LECTURES and posters

## REGIONAL RELATIONS

Cooperation with all Societies from Balkan region, members of Balkan Clinical Laboratory Federation (BCLF) (see [www.bclf.info](http://www.bclf.info))

## INTERNATIONAL RELATIONS

Participations in Meetings organised by IFCC and EFLM:

Dr Snežana Jovičić

Corresponding Member PFLM-WG:

My activities in the EFLM WG Patient Focused Laboratory Medicine included a survey of mobile health applications using laboratory medicine data. I had worked with other members of the WG on the quality evaluation of these apps, and I presented results of that work as a lecture at the 3rd EFLM Strategic Conference in Mannheim. At the WG meeting held at that time, it was decided to pursue further with this work, and to focus on the benchmarking for the quality of apps not intended for medical professionals.

Zorica Šumarac, corresponding member of the EFLM WG-PRE

Activities in 2021.: Participation in projects of the EFLM WG-PRE:

1. Venous Blood Sampling Guideline
2. Catheter sampling
3. Diagnostics pathway/Demand management
4. Awareness Campaign
5. Unsuitable Specimens
6. Management of Haemolysed Specimens – practical recommendation
7. Haemolysis in blood tubes for glucose
8. Manufacturer declarations
9. Citrate tubes
10. Stability project

EFLM Task Group for Syllabus Course.

IFCC LEPS, laboratory errors and patient safety.

## Activity of Corresponding members in 2021:

WG: Postanalytical Phase (WG-POST)	<b>Svetlana</b>	<b>IGNJATOVIC</b>	Corresponding Member	Serbia	3 <sup>rd</sup> term: 2017-2018
WG: Preanalytical Phase (WG-PRE)	<b>Zorica</b>	<b>SUMARAC</b>	Full Member	Serbia	3 <sup>rd</sup> term: 2017-2018
WG: Accreditation and ISO/CEN standards (WG-A/ISO)	<b>Neda</b>	<b>MILINKOVIĆ</b>	Corresponding Member	Serbia	3 <sup>rd</sup> term 2017-2018
WG: Register (WG-R)	<b>Snezana</b>	<b>JOVICIC</b>	Corresponding Member	Serbia	1 <sup>st</sup> term: 2017-2018

Jelena Munjas: Corresponding Member of the International Federation of Clinical Chemistry and Laboratory Medicine IFCC Task Force for Young Scientists.

Svetlana Ignjatović: Corresponding Member of EFLM WG-POST.

Neda Milinković: Corresponding member of EFLM WG Accreditation and ISO/CEN Standards.

### ADDITIONAL INFORMATION

The Society of Medical Biochemists of Serbia published international JOURNAL OF MEDICAL BIOCHEMISTRY, the Official Journal of the Society, in which many scientists from region published own papers ([www.dmbj.org.rs/jmbj](http://www.dmbj.org.rs/jmbj);  
SCIndex <https://scindeks.ceon.rs/journaldetails.aspx?issn=1452-8258&lang=en>)



## SLOVAK REPUBLIC

### SLOVAK SOCIETY OF CLINICAL BIOCHEMISTRY (SSKB)

### NATIONAL MEETINGS

<i>Name of the meeting</i>	<i>Date</i>	<i>Topic</i>
How to interpret the results of laboratory tests COVID-19	June 3, 2021	<b>Online half-day virtual meeting</b> in co-operation with the Slovak Medical Association, Slovak Chamber on Allied Health Professionals. Sponsored by Roche and Ewopharma
Medical Diagnostics Forum	September 17-18, 2021	<p><b>Two-day hybrid meeting</b></p> <p>Plenary speaker Prof. Mario Plebani</p> <ul style="list-style-type: none"> <li>• What were the key challenges for your lab when pandemics started and how did this evolve? Organization of the work, demand for tests, supply, staff...</li> <li>• What are the key takeaways from this period for the future, can you observe any changes that will stay?</li> <li>• Do you see in particular the shift to novel and digital technologies? What technologies do we need over the next few years, in which technologies we are lagging behind?</li> <li>• How to strengthen laboratory profession?</li> </ul>

## EDUCATION

- Due to pandemic restrictions on mass events related to the persistence of COVID-19 in the world, and all over the country, the Slovak Society of Clinical Biochemistry (SSCB) enables an extensive use of up-to-date information on accessible forms of education on the website [www.sskb.sk](http://www.sskb.sk) (webinars, recent information from EFLM and IFCC, etc.).
- EB SSCB organized regular online meetings with broad scale of topics for preparation of expert recommendations, cooperation with other scientific societies, encouraging of publications, etc.
- EB SSCB promoted, popularized, and made available education and training opportunities to the professional public for doctors and scientists within EFLM Academy.
- EB SSCB developed and pioneered detailed Slovak version on the registration procedure of doctors and scientists EFLM Register of Specialists in Laboratory Medicine (EuSpLM).

## ADDITIONAL INFORMATION

- Standard safety precautions to reduce the risk of transmission of blood-borne and other pathogens from known and unknown sources in clinical laboratories. Guidelines of the Slovak Society of Clinical Biochemistry regarding Covid 19. Usmernenie Výboru Slovenskej spoločnosti klinickej biochémie v súvislosti s koronavírusom 2019-nCoV. Ján Balla, Hedviga Pivovarníková, Vladimír Heriban, Jana Netriová, Katarína Lepejová, Eva Ďurovcová, Daniel Magula, Oliver Rácz, Mária Kačániová <http://www.sskb.sk/portal/wp-content/uploads/2020/03/Usmernenie-VSSKB-v-s%C3%BAvislosti-s-koronav%C3%ADrusom-2019-nCoV-prv%C3%A1-aktualiz%C3%A1cia.pdf>
- Choosing Wisely: SSKB recommendations for the rational indication of laboratory tests/ Odporúčania Slovenskej spoločnosti klinickej biochémie pre racionálnu indikáciu laboratórnych vyšetrení. Pivovarníková, Hedviga; Sečník, Peter; Ďurovcová, Eva; Magula, Daniel; Rácz, Oliver; Heriban, Vladimír; Kačániová, Mária; Lepejová, Katarína; Netriová, Jana; Balla, Ján; Štefanec, František; Hvozdovičová, Beáta. Laboratórna Diagnostika, XXVI, 2, 2021: 10–13. <https://zenodo.org/record/5758605#.Ydv12v7MluU>
- Joint EFLM-COLABIOCLI Recommendation for venous blood sampling v 1.1, June 2018. Slovak edition 2021. Spoločné odporúčania EFLM-COLABIOCLI pre odber venóznej krvi. Branislav Kavuliak, Ján Balla, Eva Ďurovcová, Hedviga Pivovarníková
- Joint WG on the History of the Slovak Society of Clinical Biochemistry.



## SPAIN SOCIEDAD ESPAÑOLA DE MEDICINA DE LABORATORIO (SEQC<sup>ML</sup>)

## NATIONAL MEETINGS

<i>Name of the meeting</i>	<i>Date</i>	<i>Topic</i>
XV National Congress of Clinical Laboratory (LabClin). Virtual meeting. (Co-organizer)	November 7 <sup>th</sup> -13 <sup>th</sup>	



XVIII Meeting of Scientific Committees.	2-5 March 2021. Virtual meeting	<ul style="list-style-type: none"> <li>• An update on Urine sediment.</li> <li>• Patient Safety.</li> <li>• Quality specifications. EFLM Biological Variation Data Base.</li> <li>• Ovarian cancer.</li> <li>• Gonadal function.</li> <li>• Accreditation in genetics laboratories</li> </ul>
Inter-hospital Meeting with Residents and Young Scientists,	June 15th 2021. Virtual meeting.	Pregnant women approach in a multidisciplinary team. Laboratory medicine Importance.
I External Quality Assurance Programs Conference	October 20th 2021. Virtual meeting.	<ul style="list-style-type: none"> <li>• Pilot programs and new projects.</li> <li>• Programs quality accreditation.</li> <li>• Preanalytical program: Results interpretation and practical application.</li> <li>• 2020 Results EQA SEQCML. Contribution to laboratories quality</li> </ul>

## EDUCATION

### Annual Educational Program 2020-2021:

- XXIV General Educational Program 2020- 2021..... 744 participants
- VII Clinical Cases in Hematology Program 2020-2021 ..... 432 participants
- VI Clinical Cases General Educational Program 2020-2021..... 435 participants
- Clinical Cases in Andrology and Clinical Embryology. Program 2020-2021..... 340 participants
- Implementation of the management requirements of the UNE-EN ISO15189:
- 2012 Standard: Case study. Program 2020-2021... ..... 309 participants
- Molecular diagnosis of congenital metabolic diseases. Program 2020-2021.....448 participants

### SEQC<sup>ML</sup> Academy: Virtual courses and webinars.

- Interpretation of essential trace elements (Cu, Zn, Se, Fe) in inflammatory processes including COVID-19. International course. March 2021
- Advances in neonatal screening: a new horizon for newborns with spinal muscular atrophy. Webinar. April 2021.
- Clinical Research Methodology and Statistical Analysis. Course. April 2021.
- The clinical laboratory facing a new pandemic. Critical success factors. Webinar. July 2021.
- Measuring Inflammatory Biomarkers in Covid. Webinar. October 2021.
- Advances in neonatal screening for congenital hypothyroidism: current status and future prospects for new detection strategies. Webinar. November 2021.
- Study of monoclonal protein in the follow-up of patients with multiple myeloma. Webinar. November 2021.
- When is a urine study necessary? Webinar. November 2021.
- Contribution of the laboratory in the diagnosis of multiple sclerosis. Webinar. December 2021.

## REGIONAL RELATIONS

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SEQC<sup>ML</sup> has relationships with:

- The European Federation of Clinical Chemistry and Laboratory Medicine (EFLM)
- The Federation of European Societies on Trace Elements and Minerals (FESTEM)
- The Ibero-American Working Group WG IAN through “Radio Microscopio”
- The Latin-American Confederation of Clinical Biochemistry (COLABIOCLI).

## INTERNATIONAL RELATIONS

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SEQC<sup>ML</sup> has relationships with:

- The International Federation of Clinical Chemistry and Laboratory Medicine (IFCC).
- The Clinical and Laboratory Standards Institute (CLSI)

## ADDITIONAL INFORMATION

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SEQC<sup>ML</sup> organizes the following EQAS programs:

- Extranalytical processes: Preanalytical Phase.
- Biochemistry: General biochemistry tests in serum and urine, HIL indices, Commutable sera with reference values, Urinary sediment analysis, Hormones, TDM, Proteins, Blood gas-POCT, Cardiac markers, Tumor markers, Hemoglobin A1c, Drugs of abuse in urine, Trace elements, Autoimmunity and Allergy.
- Microbiology and Serology.

SEQC<sup>ML</sup> also participates in the European Project EurA1c.

In 2021, the total number of registrations was 8,100. We are accrediting our programs according to ISO 17043 and are expanding SEQC<sup>ML</sup>- EQAS Programs and Educational Programs to Latin-American countries.

SEQC<sup>ML</sup> maintains the Spanish version of Lab Tests Online with more than 300 tests and a glossary with more than 500 contents. LTOES website has registered an average of 584,155 visits/ month.

The SEQC<sup>ML</sup> has recently published the first white paper on Laboratory Medicine in Spain, with the aim of shedding light and giving visibility to clinical laboratories in Spain and thus obtaining an updated image of them, gathering information that did not exist before. With the data included therein, it is possible to analyze current and future needs, evaluate decisions to be made, and act in the best interests of the future of our profession.

Advances in Laboratory Medicine / Avances en Medicina de Laboratorio (Adv Lab Med) is the official journal of the Spanish Society of Laboratory Medicine (SEQC<sup>ML</sup>). Adv Lab Med is a bilingual Open Acces journal and publishes both in English and Spanish.

SEQC<sup>ML</sup> has a total of 2932 memberships, 374 members of 33 Commissions/ Committees/ Working Groups and 37 SEQC<sup>ML</sup> Representatives in International Federations (IFCC/EFLM/ FESTEM/CLSI/ICSH).





## NATIONAL MEETINGS

<i>Name of the meeting</i>	<i>Date</i>	<i>Topic</i>
Molecular Diagnostics 2021, virtual meeting, Zurich	May 31	First Experience of Clinical Application of Metagenomics in Viral Diagnostics, Human Genetic Factors and Distribution of Tick-Borne Encephalitis Viruses Switzerland, Update SARS-CoV-2 and COVID-19, Human Breast Cancer: Genetic Testing Dr. Benno Röthlisberger and Counselling, Genetics of Childhood-Onset Diabetes, Plasma Cell Free DNA Marker as Diagnostic Tools in Lymphomas, Implementing Various Applications of Cell-Free Circulation DNA Analysis in a Clinical Laboratory
SSCC Annual Assembly 2021, Neuchâtel, "to test or not to test?"	September 08 – 10, 2021	Biomarkers for Alzheimer's disease: which, when, how ?, Biomarkers in multiple sclerosis: from hope to reality, Biomarkers in Parkinson's disease: from periphery to the core, Laboratory testing as monitoring, benchmarking, and call to action tool, in the Ticino public hospital Choosing Wisely campaign, Smarter Medicine aux soins intensifs, SARS-CoV2: The ever-evolving reality, Laboratoire en mode gestion de crise, Diagnostic de la COVID aux urgences: vitesse ou précision ?, Hereditary Cancer Predispositions, Pharmacogenetics: to test or not to test?, CAH: from newborn screening to LCMS profiles to genetics, Nucleic Acid Metrology: Ensuring reliable and comparable nucleic acid measurements

## EDUCATION

26 days of further education as a CAS in laboratory medicine, which is part of the further education curriculum in laboratory medicine in Switzerland. This CAS is offered in German at the University of Zurich (<https://www.cas-labmed.uzh.ch/de.html>) and in French at the University of Geneva (<https://www.unige.ch/formcont/cours/cas-medecine-laboratoire>). In 2021 about half of these courses were held as virtual courses.



**NATIONAL MEETINGS**

<i>Name of the meeting</i>	<i>Date</i>	<i>Topic</i>
<b>WEBINAR</b>	05/05/2021	Proteinuria: Clinical Approach and Laboratory Clinical Approach To Proteinuria Bulent Altun Nephrotic Syndrome In Children . Fatih Ozaltin Laboratory Approach To Proteinuria Flame Rule Albuminuria: Preanalytic, Analytical And Postanalytic Current Problems Fatma Ucar Urinary Protein Electrophoresis: Its Role In Proteinuria Muammer Yucel
<b>WEBINAR</b>	27/05/2021	Clinical Biochemistry from the Perspective of Biogerontology and Geriatrics Free Radicals and Aging Sukru Anil Dogan Biochemical Changes and Interpretation of Laboratory Tests in the Geriatric Age Group Asli CURGUNLU Evidence-Based Healthy Aging and Check-up Abdullah OLGUN
<b>TBS Academy Virtual Course on Molecular Techniques</b>	20-26 May, 2021	Molecular Laboratory Techniques Used in Research and Medical Practice: Applied Training Course-2 Aylin Sepici Dincel, Abdullah Tuli, İrfan Kufrevioglu, Levent Kayrin, Saltuk Bugrahan Ceyhan, Ebru Dundar Yenilmez, Deryanur Kılıç, Burak Arslan, Melda Sisecioglu, Yagmur Unver, Buket Aksu, Harun Budak
<b>6th Turkey In Vitro Diagnostic (IVD) Symposium_ TBS Izmir Branch</b>	25-26 May 2021	Liquid Biopsy in Oncology <ul style="list-style-type: none"> <li>• Circulating tumor cells</li> <li>• Non-coding RNAs and liquide biopsy</li> <li>• Liquide biopsy technologies and their use</li> <li>• Product Development and Biotechnology</li> <li>• Biotechnology in drug discovery in oncology</li> <li>• Liquide Biopsy in Cancer Diagnosis</li> <li>• Importance and applications of liquide biopsy in clinical oncology</li> <li>• Liquide biopsy in breast cancer</li> <li>• Liquide bioppy in NSCLC</li> <li>• Liquide biopsy in prostate cancer</li> </ul>
<b>TBS Academy Vistual Course on Flow Cytometry</b>	4-5 June, 2021	<ul style="list-style-type: none"> <li>• Entrance to the "Flow Cytometry" universe – Habib Ozdemir and Oguzhan Zengi</li> <li>• Life adventure of the blood cells – Fatma Meric Yilmaz</li> <li>• CBC and blood smear and further tests – Nurgul Ozcan and Klara Dalva</li> <li>• Calibration and compensation in flow cytometer – Cagdas Adas</li> <li>• Increasing role of flow cytometry in the clinical lab – Cigdem Sonmez</li> <li>• Sample preparation in flow cytometry – Cigdem Sonmez</li> <li>• Panel design in practice – Didem Ozkazanc and Klara Dalva</li> <li>• Step by step flow cytometric analysis – Nurgul Ozcan</li> <li>• Traps in flow cytometric analysis – Derya Sonmez and Cigdem Topkaya</li> <li>• What we see and what we can see in flow cytometry?</li> <li>• The flow cytometry patient report – Habib Ozdemir and Oguzhan Zengi</li> </ul>





<p><b>32nd International Biochemistry Congress - Gaziantep</b></p>	<p>27-30 October 2021</p>	<p>Diets, Mitochondria, and Calcium: A Metabolic Triad Alicia Kowaltowski, Brazil</p> <p><b>CANCER</b> The Fate of the Cell That Cannot Die: Cancer Engin Ulukaya Single Cell, Multi Function: Cancer Saadettin Kilickap Why Preclinical Studies in Cancer Are Not Reflected on the Clinic: Usual Suspects and New Players Ali Burak Ozkaya</p> <p><b>CARDIAC BIOMARKERS</b> High Sensitivity Cardiac Troponin: Need For Collaboration Between Laboratory Medicine and Clinical Practice / Discussions on Recent ESC NSTEMI &amp; NICE Guidelines Fred Apple, USA</p> <p>Clinical Approach to Sensitive Cardiac Troponin Testing (accompanied by up-to-date guidelines) ROCHE Satellite Symposium Speaker: Prof.Dr. Bülent Görennek, Eskişehir Osmangazi University, Department of Cardiology, Cardiology Specialist</p> <p>Approach to Blood Sample Collection from Intravenous Catheters and Children with Guided Guides BECTON DICKINSON Satellite Symposium Speaker: Dr. Nedim Albayrak / Middle East Medical Affairs Department Manager</p> <p><b>PEDIATRIC LABORATORY MEDICINE</b> Childhood Diabetes and Its Treatment: Current Situation Sukru Hatun Pediatric Reference Intervals: Gaps and Recent Advances Khosrow Adeli, Canada The Story of Discovery of 4 New Genes, Mutations of which Cause Hereditary Nephropathy, in Hacettepe Fatih Ozaltin</p> <p><b>HOT AGENDA IN THE CLINICAL LABORATORY: ISLAB and CITY HOSPITALS</b> M. Ertugrul Egin, Kemal Memisoglu &amp; Ibrahim Karakus</p> <p><b>MONOCLONAL GAMMOPATHIES: DIAGNOSIS AND MONITORING BINDING SITE</b> Satellite Symposium Dr. Mohannad Ali Yacoub / Medical Scientific Liaison at The Binding Site, pHD in Molecular Genetics</p> <p><b>COVID-19 PANDEMIC and VACCINE</b> COVID 19: A Biological Weapon? Levent Edge COVID-19 Vaccines: Efficacy, Safety and Future Prospects Erkan Ozcengiz COVID-19 in Childhood Yasemin Ozsurekci</p>
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	<p>The Great Value of Clinical Laboratories in the Pandemic Process MINDRAY Satellite Symposium Speaker: Prof. Sergio Bernardini, Italy</p> <p>Epithelial Barrier Hypothesis and Autoimmunity, Allergy and Other Chronic Conditions Cezmi Akdis, Switzerland Mechanisms that Trigger or Break the Allergen-Specific Tolerance Mübeccel Akdis, Switzerland</p> <p>Recombinant DNA Technology and Development of Biopharmaceutical Medicines Sadettin Ozturk, USA</p> <p>Clinical Decision Support System and Applications in the Laboratory ABBOTT Satellite Symposium Umar Ansari / Chief Professional Services (CSO) / Abbott</p> <p>FORUM: POSTGRADUATE BIOCHEMISTRY EDUCATION. HOT AGENDA IN EXPERTISE AND RESEARCH (MA, PhD) EDUCATION: SESSION OF PROBLEMS, SOLUTIONS AND EXPERIENCE SHARE Günnur Dikmen &amp; Umut Akyol &amp; Aylin Sepici Dincel &amp; Mübeccel Akdiş</p> <p>Clinical Testing for Early Detection and Management of Sepsis Sedef Yenice</p> <p>New mass spectrometry workflows and fragmentation pathways for the in-depth analysis of complex samples Speaker: Volker Kruff, Senior Manager Business Development SCIEX</p> <p>GOOD PRACTICES IN BIOCHEMISTRY EDUCATION An Example of Active Learning in Graduate Education: Molecular Biology Techniques Sevcan Atay Learning to Analyze Urine at Home: Findings from a Pilot Study Ali Burak Ozkaya “Flip-Face Learning” Approach in Medical Biochemistry Laboratory: Success and Satisfaction of the Medical Student Rabia Semsî, Aylin Sepici Dincel</p> <p>HERITABLE METABOLIC AND NEUROIMMUNOLOGICAL DISEASES Importance of Amino Acid Comatograms in Urea Cycle Defects and Contribution to Diagnosis Tijen Tanyalcin Bile Acid Metabolism Disorders and Laboratory Incilay Lay Organic Acidemias: Clinical and Laboratory Ozlem Unal Long Clinical Tests Used in the Diagnosis and Follow-up of Neuroimmunological Diseases Zubeyde Erbayraktar</p> <p>The Role of Metabolomics for the Investigation of Inborn Errors of Metabolism Roy Peake, USA</p>
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## EDUCATION

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- TBS Academy - Applied Basic Bio-statistics Course by TBS- Working Group of Information Technologies (15-17 January 2021).
- During the epidemic, we carried out the following activities in the field of biochemistry:
  - The book titled "The Increasing Role of Medical Biochemistry in the COVID-19 Pandemic" has been published as a book in the Journal of Medical Sciences of Turkiye Klinikleri (February 2021).
  - Studies on COVID-19 continue.
- TSD ACADEMY COURSES  
"Internal Quality Control and External Quality Evaluation from Theory to Practice: Problems and Solutions" with Bome Trivitron  
Course Instructors  
Muhittin Serdar  
Dogan Yucel  
Gaziantep, 28-29 October 2021
- COURSE: Use of Separation Techniques in Clinical Laboratories,  
Course Instructors  
Ali Unlu  
Elif Isbilen  
Hulya Cicek  
Sedat Abusoglu,  
28 October 2021
- WORKSHOP (on line)  
Errors Authors Make When Writing Scientific Papers  
Thomas Annesley, USA  
29 October, 2021

### GUIDELINES /EXPERT OPINION

- Expert Opinion for Clinical Performance of Laboratory Tests  
Dogan Yucel, Ankara, 2021
- Quantification of Atherogenic lipoproteins for lipid-lowering strategies: The joint recommendations of the EAS and EFLM GUIDE are presented in Turkish Translation, Ankara, 2021.
- Guideline for Complete Blood Count in Medical Laboratories: Effects of Preanalytical Parameters published in English, Ankara, 2021.

### SURVEY

- Evaluation of the Application Rate of the Rational Laboratory Use Project in Medical Biochemistry Laboratories: A National Survey Study
- TBS - The Qualification Board has been updated.
- The impact factor of the Turkish Journal of Biochemistry (TJB) increased to 0.401.

### INTERVIEWS

Instagram Interviews of TBS were held by Istanbul Branch.

- Physicians Sing, 13 May 2021
- From Molecule to Kitchen, 28 May 2021
- EFLM Activities, 10 June 2021
- Our Fearful Dream: Statistics, 24 June 2021



- Approval Support System, Artificial Intelligence and Data Mining in Medical Laboratories, July 08, 2021
- Next Generation Nutrition – Flavonoids and Bee Miracle Propolis, 29 July 2021
- Microbiota, 25 November 2021
- Doctoral Education in Health Sciences: International Perspectives and Approaches, 16 November 2021

## REGIONAL MEETINGS

<i>Name of the meeting</i>	<i>Date</i>	<i>Society's contribution for the meeting</i>
Laboratory Techniques Used in Research and Medical Practice: Applications (Online) Training Course	5- 20-26 May 2021	ADANA Branch of TBS Trainers: Abdullah Tuli, Ebru Dundar Yenilmez Mustafa Muhlis Alpaslan Kezban Kartlasmis, Ümmühan Fulden Aydın Umut Kökbaş Aylin Sepici Dincel
Laboratory Techniques Used in Research and Medical Practice: Applications (2. Online) Training Cours	6- 13-18 June 2021	ADANA Branch of TBS Trainers: Abdullah Tuli, Ebru Dundar Yenilmez Mustafa Muhlis Alpaslan Kezban Kartized, Ümmühan Fulden Aydın Umut Kökbaş Aylin Sepici Dincel

## INTERNATIONAL RELATIONS

- Scientific studies of international organizations of which we are members as TBS, such as FEBS, IUBMB, IFCC, BCLF, EFLM, are announced to all researchers on our website and via e-mail.
- Symposium Cutting Edge of Laboratory Management in Europe, 30 Sep - 01 Oct 2021  
New Date Reminder, Charles University in Prague, Prague, Czech Republic
  - Personalised reference interval – a valuable tool in diagnosis and monitoring  
Abdurrahman Coşkun
- EFLM Award for **Excellence in Outcomes Research in Laboratory Medicine** - sponsored by Abbott Diagnostics. The award 2021 goes to Prof. Abdurrahman Coşkun, as First Author of the paper:
  - Personalized Reference Intervals in Laboratory Medicine: A New Model Based on Within-Subject Biological Variation. Abdurrahman Coşkun, Sverre Sandberg, Ibrahim Unsal, Coşkun Cavuşoglu, Mustafa Serteser, Meltem Kilercik, Aasne Karine Aarsand. Clin Chem 2021,30;67:374-84
- EFLM Academy Webinars
  - Myths and facts about vitamin D  
June 15, 2021  
Dr.Ali Ünlü (Turkey)
- -Why we are not using old and novel bone markers as a routine biochemical marker?
  - 21 December 2021  
Dr. Sepici Dincel Aylin (Turkey)



## ADDITIONAL INFORMATION

- Scientific support was provided to the studies of Ministry Of Health And Social Security Institution.
- The opinion on the establishment of the “Grand National Assembly of Turkey, Research Commission on climate change, combating drought and efficient use of water resources”, published in the Official Gazette, was reported on March 19, 2021.
- Scientific support was provided for the studies of The Turkish Medical Association (TMA) and TMA- Coordination Committee of Medical Specialty Societies (CCMSS).
- Active participation in all sessions within the scope of TMA Medical Specialization Education Congress (5 December 2021) was provided by TBS.
- Participation to the HUV Advisory Board Meeting on “Determining the criteria/criteria to be taken into account in determining the annual TTB Coefficient” for the year, 2022 was provided by TBS; 08, December, 2021.
- A response was given to the Opinion Request of the Turkish Medical Association, on the prices of the Health Implementation Notification Of Social Security Institution; December, 2021
- General assembly was made on 12 December, 2021.
- The renewed TBS- statute was accepted at the general assembly.
- TBS continued to conduct the External Quality Control Program produced in Turkey.

## REGIONAL RELATIONS

Good relations

## INTERNATIONAL RELATIONS

Good and frequent relations with IFCC. Interesting participations of VACB members in the IFCC live Webinars from 15/7/2021 to 10/11/2021.



## VIETNAM VIETNAMESE ASSOCIATION OF CLINICAL BIOCHEMISTS (VACB)

## NATIONAL MEETINGS

<i>Name of the meeting</i>	<i>Date</i>	<i>Topic</i>
24th Scientific Conference of the Hanoi and Northern Provinces Society of the VACB in Hanoi	25-26/12/2021. Due to the Corona virus Pandemic, postponed to 7-8/1/2022	Corona virus ,Lab Tests in Covid-19 Pandemic, Molecular Biology, QA & QC, Immunology, Tumor markers, Diabetes, Hepatitis

## EDUCATION

Five on- line training courses in March (QA & QC), June (Hepatitis) July (SARS-COV-2), August (SARS-COV-2), November (External quality assessment).

## REGIONAL RELATIONS

Good relations

## INTERNATIONAL RELATIONS

Good and frequent relations with IFCC. Interesting participations of VACB members in the IFCC live Webinars from 15/7/2021 to 10/11/2021.

# AFFILIATE MEMBER SOCIETIES



## INDIA ASSOCIATION OF MEDICAL BIOCHEMISTS OF INDIA (AMBI)

### NATIONAL MEETINGS

<i>Name of the meeting</i>	<i>Date</i>	<i>Topic</i>
28 <sup>th</sup> AMBICON 2021	2 <sup>nd</sup> to 5 <sup>th</sup> December 2021	Molecular Ingress in the Realm of Molecular Diagnostics
28 <sup>th</sup> AMBICON 2021 Pre-conference Workshop	2 <sup>nd</sup> December 2021	Indirect immunofluorescence, HPLC, cell culture, molecular diagnostics and flow cytometry.

### EDUCATION

Indian Journal of Medical Biochemistry, peer-reviewed journal is published three issues in 2021. Celebration of lab professional week i.e. 18-24 April 2021.

### REGIONAL MEETINGS

<i>Name of the meeting</i>	<i>Date</i>	<i>Society's contribution for the meeting</i>
4 <sup>th</sup> State Conference Telangana Chapter AMBI-TS 2021	8 <sup>th</sup> February 2021	Conference of state chapter
West Bengal Chapter of AMBI	14 <sup>th</sup> August 2021	Seminar on Immunofluorescence: <ul style="list-style-type: none"><li>• Basics of Indirect Immunofluorescence assay</li><li>• Technicality and interpretation of ANA by IF.</li><li>• Interference and pitfalls in IF assay</li></ul>
7 <sup>th</sup> State level Conference of Association of Medical Biochemists of India – Karnataka Chapter, AMKCCON 2021	25 <sup>th</sup> to 27 <sup>th</sup> August 2021	Paediatric Laboratory Medicine
7 <sup>th</sup> State level Pre- Conference symposia of AMKCCON 2021 (Association of Medical Biochemists of India – Karnataka Chapter)	25 <sup>th</sup> August 2021	Liquid Biopsy- A paradigm shift Advanced QC Practices
A Workshop by Association of Medical Biochemists of India – West Bengal Chapter	9 <sup>th</sup> October 2021	Ion Exchange Chromatography. Early and Recent Perspective
Virtual CME New Delhi Chapter of AMBI	5 <sup>th</sup> November 2021	Lipid Profile Testing – Current challenges and new guidelines



<i>Name of the meeting</i>	<i>Date</i>	<i>Society's contribution for the meeting</i>
Virtual CME New Delhi Chapter of AMBI	20 <sup>th</sup> November 2021	Updates in cancer diagnostics Lectures on Tumor markers, Lipid Biopsy in cancer Molecular markers in cancer diagnostics

## REGIONAL RELATIONS

Numerous educational seminars in the country.

Various topics held in local areas with small gatherings and mostly virtual.

Many Medical colleges like Lady Hardinge, Delhi and many other states such as Orissa, West Bengal, Tamil Nadu to name a few held numerous one or two days seminars on latest trends in Molecular technology and recent trends.

## INTERNATIONAL RELATIONS

Participation of AMBI members at APFCB & IFCC virtual meetings, during the year.

Many AMBI members were nominated as corresponding members in TF of various committees. Such exposure as we have seen, help them grow not only individually but help guide other members in various activities and lead to enthusiasm in the youngsters.

## ADDITIONAL INFORMATION

Though AMBI is an affiliated member, the past ten years, we request recognition to hold an International workshop or conference under auspicious of IFCC/APFCB, as many members have been recognised for their work as TF members.



## PHILIPPINES PHILIPPINE COUNCIL FOR QUALITY ASSURANCE IN CLINICAL LABORATORIES (PCQACL)

The Philippine Council for Quality Assurance in Clinical Laboratories (PCQACL) continuously strengthen its diplomatic relationship and collaboration with the IFCC for continuing educational activities and development with its regular application to the IFCC Visiting Lecturer Program. With this program, the PCQACL is privileged to invite renowned Speakers in the field of Laboratory Medicine and other relevant medical fields during the PCQACL Annual Convention. Hence, we are so grateful to the IFCC for being able to invite the following IFCC- VLP Speakers for the Virtual 18th PCQACL Annual Convention this year.



Gerald Joseph Kost, MD, PHD, MS, FAACC

The IFCC Consultant to the POCT Task Force, Dr. Gerald Joseph Kost has graced with his virtual presence, the PCQACL 18th Annual Convention Opening Ceremonies as the Keynote Speaker addressing over two thousand delegates comprising Pathologists, Medical Technologists, clinical laboratory Supervisors and Managers with his Keynote Message on the topic “ Transforming the Future Before It Happens-- What COVID Taught us” held last Sept. 22, 2021. Furthermore, the PCQACL 18th Annual Scientific Programme has been privileged to have Dr. Kost as one of the distinguished IFCC-VLP Speakers as he shared his knowledge and expertise on the topic“



Tony Badrick, PhD, MBA, FAACB, FRCPA

The Chief Executive Officer of the Royal College of Pathologists of Australasia (QAP), Professor Tony Badrick has also been one of our invited eminent IFCC-VLP Speakers in the virtual 18th Annual Scientific session on the topic “ Internal Quality Control using Patient Samples: Concept of Moving Averages” held on Sept. 24, 2021

### NATIONAL MEETINGS

<i>Name of the meeting</i>	<i>Date</i>	<i>Topic</i>
Virtual 18 <sup>th</sup> PCQACL Annual Convention	September 22 - 24, 2020	“Moving on, Moving forward Beyond COVID-19”

The Philippine Council for Quality Assurance in Clinical Laboratories (PCQACL) has conducted its Virtual 18th Annual Convention with the team “Moving on, Moving forward Beyond COVID-19” held last Sept 22-24, 2020 through an online platform of Microsoft Teams. This event was well attended and participated by more than 2,000 delegates from the different clinical laboratories and medical institutions nationwide. An array of scientific lectures and panel discussions by renowned and distinguished Speakers are all very informative, timely, and relevant to this time of pandemic. They have really satisfied and fulfilled the gain in knowledge and learning updates of our convention participants.

The 3- day virtual convention started on Sept. 22, 2020 with the Opening Ceremonies highlighted by the Keynote Address of Dr. Gerald Joseph Kost, IFCC Consultant to the POCT Task Force on the topic “Transforming the Future Before It Happens-- What COVID Taught us” followed by the pre-recorded scientific sessions covering the track on Challenges in the Pandemic with the following presented lectures and panel discussion topics: 1) Panel Discussion 1: Directions for Molecular Laboratories: Current and Future applications of RT-PCR , 2) Updates on Testing Strategies for COVID-19 in the Philippines , 3) Panel 2: Quality Monitoring in Molecular laboratories, 4) Implications of mutations in SARS-COV2, and 5) Tests for Monitoring Clinical Course of COVID Patients and Beyond.

The second day of the convention on Sept. 23, 2020 was loaded with the following lectures and panel discussion topics covering the track on Quality Laboratory Management: 1) Panel Discussion 3: National Reference Laboratories in the Philippines, 2) Quality Assurance in Cytology, 3) Risks Management in the New Normal, 4) Panel 4: Rising out of the Hard Times: Make your Laboratory Stay Afloat in Crisis, 5) Financial Analysis, Taking It a Step Further, 6) Critical Risk Results Reporting, 7) Accreditation and Quality in COVID Era in Indonesia, and 8) Method Validation.

Onward to the third day on Sept. 24, 2020 was the track on Moving Forward with the following lectures and panel discussion topics: 1) Diagnostic Testing for COVID-19: Mathematics, Prevalence, Special Scenarios and Quality, 2) Panel 5: Quality management of Point of Care testing





covering the topics on Instrument Selection, Quality Training, and Quality Monitoring, 3) Internal Quality Control using Patient Samples: Concept of Moving Averages 4) ARSP Accreditation for Bacteriology Laboratories, 5) Panel 6: Post- vaccination Monitoring of Antibodies to SARS-COV-2, and 6) Next Generation Sequencing: Current and Future Applications. This last day of the convention was highlighted with the culminating activities of the 3-day convention and the Closing Ceremonies.

The PCQACL Continuing Education, Training & Research (CETR) Committee has successfully conducted such a virtual convention and made it possible via Microsoft Teams online platform through the technical assistance of our IT Provider (Progressive Productivity Solutions) on the technical issues, queries and concerns of the participants with the guidance and supervision of the PCQACL Committee on Information, Communication & Technology System (ICTS).

## EDUCATION

The Committee on Continuing Education, Training & Research of PCQACL has conducted the following Webinars last year 2021:

<i>Title</i>	<i>Speaker/s</i>	<i>Date</i>	<i>Number of Participants</i>
<b>P.O.W.E.R. 1</b> Blood Gas Analysis in POCT and its Challenges	Dr. Ana Daliela B. Masiman	March 26, 2021	324 registered participants
<b>P.O.W.E.R. 2</b> “Beyond the Usual CBC Analysis: Digging deeper into Histograms” “ Automated ESR: What’s the point?”	Dr. Alejandro Arevalo	June 11, 2021	831 registered participants
<b>P.O.W.E.R. 3</b> Topic Lecture 1: “ The Purpose, Practicality and Current Situation of Body Fluid Testing” Topic Lecture 2: “ Standardization Discussion of Body Fluid Testing”	Dr. Anna Merino Gonzales  Prof. Chutitorn Ketloy	July 2, 2021	1,018 registered participants
<b>P.O.W.E.R. 4</b> The Best Practices in Quality Control and Quality Assessment Topic Lectures: 1. IQC Laboratory Management Strategies 2. Achieving and Maintaining Quality in the Laboratory	Navapun Charuruks, MD, FRCPATH  Yi Huang, MD, PhD	November 10, 2021	1,107 registered participants

Since PCQACL is an accredited CPD Provider by the Philippine Professional Regulation Commission, we have partnered with the diagnostic companies in providing the following webinars to our valued members:

<b>Title</b>	<b>Speaker/s</b>	<b>Date</b>	<b>Number of Participants</b>	<b>Industry Partner</b>
Topic Lecture 1: Doing More with Less: Systemisation Solution in Haematology Lab  Topic Lecture 2: Advanced Clinical Parameters in Haematology Lab: A Case Illustration	Dr. Rodelio D. Lim  Prof. Dr. Mansyur Arif	March 17, 2021	181 registered participants	Sysmex Philippines
Topic Lecture 1: SARS-COV-2 Antigen Testing in the New Normal  Topic Lecture 2: D-Dimer, A Significant Coagulation Marker in Inflammatory and Infectious Condition  Topic Lecture 3: Therapy System for COVID-19 Infection	Dr. Arvin C. Faundo  Dr. Prasanna Kumar  Dr. Premkumar Jarayaman  and  Ms. Audrey Li, m	March 21, 2021	182 registered participants	Zafire Distributors, Inc.
Haemocytometry in the Management of Infectious Diseases such as COVID-19	Prof. Andre Van der Ven	July 29, 2021	271 registered participants	Sysmex Philippines

## REGIONAL MEETINGS

<b>Name of the meeting</b>	<b>Date</b>	<b>Society's contribution for the meeting</b>
Amidst the challenging times of the COVID- 19 pandemic with the national and international travel restrictions for safety reasons, some of the members of the PCQACL Board of Trustees still managed and were able to attend the following webinars conducted by the IFCC:		
1.IFCC Global Conference on Covid – 19 Pandemic Topic: Critical Role of Clinical Laboratori in the Covid-19 Pandemic	Feb. 15-17, 2021	Dr. Emil Bryan Garcia - PCQACL President and Dr. Edna May-Lasp Go- PCQACL Board of Trustee have attended this IFCC virtual webinar



<b>Name of the meeting</b>	<b>Date</b>	<b>Society's contribution for the meeting</b>
2.Application of Laboratory Techniques in the diagnosis of infectious diseases		
3.Risk Mangement in the Clinical Laboratories	April 6, 2021	Dr. Anacleta Pring- Valdez, PCQACL Press Relation Officer and a Trustee has attended the following stated IFCC Live Series Webinars for 2021
4.Quality in Clinical Laboratory	May 10, 2021	
5.POCT in Resource Limited settings : Dotting the"i's" and crossing the "t"	June 15, 2021	
6. Newborn Screening		
7. Evidence-Based laboratory medicine	July 15,2021	Dr. Aileen Riego Javier- PCQACL Past President and Chair of the PCQACL Committee on Nominations and Election has also attended these webinars.
8. Quality Management of medical test results during the pandemic	July 20,2021	
9. Proficiency testing / EQA: Program designs and practical approaches for addressing unexpected results	Sept. 8, 2021	Dr. Edna May Lasap- Go - PCQACL Board of Trustee has attended these IFCC virtual webinars
10. Town Hall Meeting with Dr. Khosrow Adeli	Sept. 29, 2021	
	Nov. 22, 2021	Dr. Elizabeth Y. Arcellana-Nuqui, PCQACL Past President, PCQACL incumbent Board of Trustee and Chair of Committee on Advocacy & External Relations has attended this meeting.
	December 13, 2021	

## **REGIONAL RELATIONS**

Member of Asian Network for Clinical Laboratory Standardization and Harmonization (ANCLS)  
 Member of Asian - Pacific Federation of Clinical Biochemistry and Laboratory Medicine (APFCB)  
 PCQACL was a Member of Clinical and Laboratory Standards Institute (CLSI) which has given PCQACL the authority to be the distributor of their books and other documents in the Philippines, procuring of such in bulk and distributing them to facilitate their adoption and implementation by the clinical laboratories.

## **INTERNATIONAL RELATIONS**

PCQACL is an active member of the International Federation of Clinical Chemistry and Laboratory Medicine (IFCC)

The IFCC-Visiting Lecturer Program has always been requested to provide Speakers / Panel Discussants at the plenary lectures / panel discussions of the PCQACL annual conventions, seminar-workshops and other scientific sessions. However, it was so unfortunate that due to the COVID - 19 pandemic and for safety reasons, we just got the opportunity to have our invited IFCC-VLP Speakers shared their pre-recorded presentations in the Virtual18th PCQACL Annual Convention.

## **ADDITIONAL INFORMATION**

### **PCQACL Officers and Board of Trustees, Standing Committees and Chairpersons for C.Y. 2021**

#### **Officers**

President: Emil Bryan M. Garcia, MD, FPSP

Vice-President: Sarah Jane L. Datay-Lim, MD, FPSP

Secretary: Estela Marie C. Tanchoco, MD, FPSP, MBA

Treasurer: Hasmin D.C. Miroy, RMT  
 Auditor: Erlinda C. Pijuan, RMT  
 P.R.O. : Anacleta P. Vadez, MD, FPSP  
 Assistant Secretary: Laurie Anne M. Reyes, RMT  
 Assistant Treasurer: Gerrick Joseph C. Dolor, RMT  
 Immediate Past President: Godwin N. Hernaez, MD, MDM, FPSP, CESE  
 Founding President: Tomas P. Maramba, Jr., MD, FPSP

**Trustees**

Elizabeth Y. Arcellana-Nuqui, MD, FPSP  
 Edna May Lasap-Go, MD, FPSP  
 Januario D. Veloso, MD, FPSP  
 Bernadette R. Espiritu, MD, FPSP  
 Rodelio D. Lim, MD, FPSP  
 Paulo Enrico P. Belen, MD, DPSP  
 Maximo Saavedra, Jr., MD, FPSP  
 Giselle Gay Bermejo, RMT

**Standing Committees and Chairpersons**

Committee on Membership: Estela Marie C. Tanchoco, MD, FPSP, MBA  
 Committee on Continuing Education, Training & Research: Marissa A. Orillaza, MD, MSCE, FPSP  
 Committee on Advocacy & International Relations: Elizabeth Y. Arcellana-Nuqui, MD, FPSP  
 Committee on Information, Communication & Technology Systems: Gerrick Joseph C. Dolor, RMT  
 Committee on Finance: Erlinda C. Pijuan, RMT  
 Committee on Publications & Public Relations: Anacleta P. Valdez, MD, FPSP  
 Committee on Annual Convention: Sarah Jane L. Datay-Lim, MD, FPSP  
 Committee on By- Laws & Legislation: Anacleta P. Valdez, MD, FPSP / Atty. Joyce Mendoza  
 Committee on Nominations & Elections: Aileen Riego-Javier, MD, FPSP  
 Committee on Awards: Edna May Lasap-Go, MD, FPSP  
 Committee on Special Projects: Januario D. Veloso, MD, FPSP



**SERBIA**  
 SERBIAN SOCIETY FOR CLINICAL LABORATORY  
 MEDICINE AND SCIENCE (SCLM)

**NATIONAL MEETINGS**

<i>Name of the meeting</i>	<i>Date</i>	<i>Topic</i>
The Third International Congress of Private Sector Health Workers	February 25-26, 2021 Belgrade, Serbia	Scientific Committee Membership
Serbian Congress of endocrinologists of Serbia with international participation	March 11-14, 2021 Virtual Mode	Invited lecture
8 <sup>th</sup> Congress of the Association of Preventive Pediatrics of Serbia with international participation	May 13-15, 2021 Virtual Mode	Invited lecture



<i>Name of the meeting</i>	<i>Date</i>	<i>Topic</i>
V Congress of Association of Coronary Units of Serbia with international participation	September 10-12, 2021 Belgrade, Serbia	Invited lecture

## EDUCATION

SERBIS on-line tests with educational materials (Accredited by The Health Council of Republic of Serbia)

Test 1: Molecular testing of SARS-CoV-2 infection and serological testing of antibodies against SARS-CoV-2 (50 questions)

Test 2: Biochemical and haematological monitoring of COVID-19 patients (50 questions)

Test 3: Biomarkers in interstitial lung diseases (50 questions)

Test 4: Biomarkers in diagnostic and treatment community-acquired pneumonia (50 questions)

## REGIONAL MEETINGS

<i>Name of the meeting</i>	<i>Date</i>	<i>Society's contribution for the meeting</i>
8 <sup>th</sup> International Symposium «Critical Care Testing and Blood Gases»	June 10-11, 2021 Biarritz, France	Session chairmanship
POCT: Making The Point	September 6-7, 2021 Rome, Italy	Session chairmanship
7 <sup>th</sup> Meeting of the European Section and the 8 <sup>th</sup> Meeting of the North American Section of the International Academy of Cardiovascular Sciences (IACS)	September 20-23, 2021 Banja Luka, The Republic of Srpska, Bosnia & Herzegovina Hybrid format	Invited lecture, Session chairmanship
ESPT congress «Latest developments in Pharmacogenomics research and clinical implementation»	November 17, 2021 Virtual Mode	Session chairmanship, Organizing Committee Membership
JIB 2021 e-Round Table «The Vital Role of Lab Medicine Professionals in the Fight against the COVID-19 Pandemic»	December 1-2, 2021 Virtual Mode	e-Round Table Presentation
47 <sup>th</sup> Annual Conference of Association of Clinical Biochemists of India (ACBICON2021)	December 13-15, 2021 Virtual Mode	Invited lecture

## INTERNATIONAL RELATIONS

IFCC Affiliate Membership

IFCC Communications and Publications Division (CPD)

eJIFCC (WG-eJIFCC), Sanja Stankovic

IFCC ETD Committee on Mobile Health and Bioengineering in Laboratory Medicine (C-MHBLM),  
Sanja Stankovic

EFLM Science Committee

EFLM WG: Cardiac Markers, Corresponding Member Sanja Stankovic

European Society of Pharmacogenomics and Personalised Therapy (ESPT)

General Secretary/Board Member Sanja Stankovic

### **ADDITIONAL INFORMATION**

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SCLM joined the EFLM Academy in 2021 (55 members)







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