

International Federation
of Clinical Chemistry
and Laboratory Medicine



serving laboratory medicine worldwide

Handbook 2018-2020

International Federation
of Clinical Chemistry
and Laboratory Medicine



Handbook 2018-2020

IFCC will provide worldwide leadership in clinical chemistry and clinical laboratory medicine to professional societies, the diagnostic industry, governmental and non-governmental organisations to serve the public interest in health care.

1 May, 2018

IFCC HANDBOOK 2018-2020

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Note:

The order of this Handbook has been largely determined by the IFCC Numbering System that was originally designed and implemented by Prof. Mathias M. Müller. Wherever possible the numbering of Chapters and Paragraphs complies with this system. Where this is not possible the appropriate IFCC Number is given in brackets alongside the Handbook entry.

It is helpful to use the IFCC Numbering System when corresponding with IFCC about any topic. A summary of the full IFCC Numbering System is included in Chapter 16 of this Handbook (Paragraph 16.8).

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Handbook of the International Federation of Clinical Chemistry and Laboratory Medicine

2018-2020 Edition

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Chapter 1

Organisation, Structure and Function of IFCC

1.1. INTRODUCTION

The International Federation of Clinical Chemistry and Laboratory Medicine (IFCC) is a worldwide, non-political organization for clinical chemistry and laboratory medicine. As such, it has a range of roles that include (1) global standard setting in collaboration with other international organizations, (2) supporting its members through scientific and educational endeavour, and (3) providing a series of congresses, conferences and focused meetings for laboratory medicine specialists to meet and present original findings and best practice.

The IFCC relies very heavily on volunteers to run the organization and to undertake its range of activities and programmes. Those volunteers are constantly changing and so a reference document is required to assist people who want to learn more about IFCC and its operation. That reference document is this IFCC Handbook.

The production of the IFCC Handbook occurs once every three years to coincide with the term of each Executive Board. However, IFCC is a dynamic organisation that evolves constantly. The most up to date information about IFCC is always available from the IFCC website (www.ifcc.org).

The Handbook puts in one place all the information about the function and operation of IFCC. This includes the organization of IFCC and its aims and strategic objectives over the three-year life of the Executive Board. Also, it includes details of IFCC programmes and projects. The Handbook lists, in logical order, IFCC Regional Organizations, Divisions, Committees and Working Groups. The Full Members, Corporate Members and Affiliate Members are also included. Contact names and addresses are included for the many people who work with and for IFCC. Finally, the necessary Statutes and Rules of the IFCC are published in the Handbook.

We thank the many individuals responsible for preparing this useful document.

Howard Morris
President

David Kinniburgh
Secretary

1.2. ORGANISATION OF IFCC

The IFCC contains three Membership categories.

- Full Members that are recognised and established national societies of clinical chemistry and laboratory medicine.
- Corporate Members, that are individual companies, corporate entities or research establishments concerned with the field of clinical laboratory practice.
- Affiliate Members that are allied international or national societies or groupings interested in the science and practice of laboratory medicine.

The organisational structure of IFCC is illustrated in the Figure 1. The governing body is the Council that consists of one Representative appointed by each Full Member (voting), Affiliate Member, and Corporate Member. It convenes at the triennial International Congress of Clinical Chemistry and Laboratory Medicine. Between Council meetings, the business of IFCC is conducted by the Executive Board that is elected by the Council. Any important questions that arise between Council meetings, such as the admission of new Full Members to the Federation, approval of recommendations, and changes or amendments of statutes are decided by ballot of the Full Member Representatives voting on behalf of their societies.

Membership of IFCC is accorded to National Societies of Clinical Chemistry and/or Laboratory Medicine, each of which pays dues related to the number of members in its society. A Society applying for Full Membership of IFCC must show that it is recognised as the main society responsible for clinical chemistry and/or laboratory medicine in that country and satisfy the Executive Board that its statutes and by-laws are in accordance with the principles of the Federation.

The Executive Board comprises the President; Past President or President Elect; Secretary; Treasurer; one representative elected by each of the six Regional Federations; and an individual representing Corporate Members. The Executive Board normally meets three times a year; the Chairs of the IFCC Divisions attend at least one meeting per year.

The IFCC carries out much of its business through its Divisions and Committees. There are currently four Divisions, each of which has an Executive that reports directly to the Executive Board.

- Scientific Division
- Education and Management Division
- Communications and Publications Division
- Emerging Technologies Division

The Committee for Congresses and Conferences also reports directly to the Executive Board.

Every three years, the Executive Board appoints two further committees, namely, the Nominations Committee to prepare a slate of candidates for elections for the next Executive Board, and the Awards Committee to select the recipients of the IFCC awards. The Executive Board may also appoint Special Project Committees and Task Forces.

Much of the work of the Divisions is delegated to Committees, which report to the Division Executive. These Committees have broad responsibility areas and tend to function for several years. Members of the Division Executives, together with the Chairs of the Committees reporting to Divisions, are appointed by the Executive Board; ordinary members of Committees reporting to Divisions are appointed by the Division Executives. Divisions may also appoint Working Groups to work on defined projects or

to do less formalised work. Working Groups are dissolved when their specific projects are completed, although their work may lead to the establishment of Committees or other activities funded by IFCC.

All IFCC Members (Full, Corporate and Affiliate) are invited to suggest candidates to serve on Division Executives, Committees and Working Groups. Appointment is according to merit without respect to nationality or other affiliation. Members (Full, Corporate and Affiliate) are also invited to participate in the work of Division Committees, Working Groups and Task Forces by appointing Corresponding Members. Division Executives and Committees are funded by the IFCC, most of the work of Working Groups is done without financial support from the IFCC.

The other key part of the organisation is the IFCC Office which is located in Milan (IT). This office is responsible for most of the daily and organisational matters and is the point of contact for all IFCC activities. The IFCC Office has responsibilities for supporting the Executive Board, Division Executives and Committees, for maintaining the IFCC website and for all relevant documentation. The IFCC Office also supports the organisation of some IFCC Conferences. IFCC part funds the staff member of the European Federation of Clinical Chemistry and Laboratory Medicine (EFLM), which is co-located with the IFCC Office.

The address of the Office is:

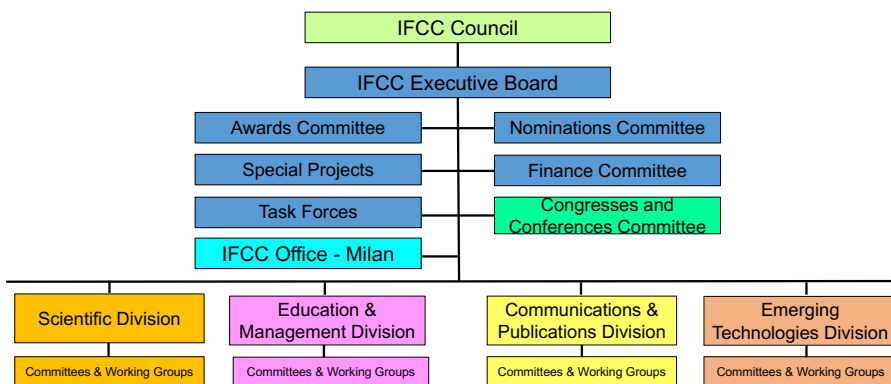
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The current Office Staff are:

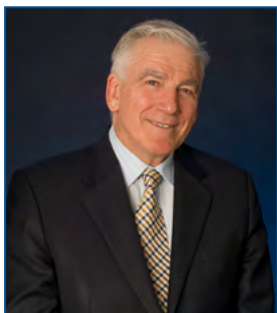
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Figure 1: IFCC Organisational Structure



1.3. THE IFCC EXECUTIVE BOARD 2018-2020

Biographies of the IFCC-EB members 2018-2020



President:
Professor Howard MORRIS

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Prof. **Howard Morris** (PhD, FAACB, FFSc(RCPA)) holds a joint appointment as Professor of Medical Science in the School of Pharmacy and Medical Sciences, University of South Australia and Clinical Scientist in Chemical Pathology at SA Pathology, Adelaide Australia. Between 2012 and 2014 he served as IFCC Vice-president, between 2003 and 2008 he was the Secretary of the Scientific Division of the IFCC and has served as Chair the IFCC-International Osteoporosis Foundation Joint WG on Standardization of Bone Turnover Markers (2012-2017) and as a member of the IFCC Task Forces on the Global Campaign on Diabetes Mellitus (2003-2008) and on International Clinical Liaison (2009-2011).

Within the Asia Pacific Federation of Clinical Biochemistry (APFCB) Dr.Morris served as Chair, Scientific Committee (2002-2004) and Chair, Scientific Organising Committee, Member Organising Committee for 10th Asian Pacific Congress of Clinical Biochemistry (2002-2005). He was the Australasian Association of Clinical Biochemists (AACB) representative to the Councils of the IFCC and APFCB (1998-2004), served on AACB Council (1998-2002) and Editor of the Clinical Biochemist Reviews (1994-2002). He was awarded an AACB Outstanding Service Medallion (2003) and the W. Roman Travelling Lectureship (2004). Dr Morris is currently a Clinical Scientist in the Chemical Pathology Directorate, SA Pathology providing clinical advice and comments in the discipline. He has 30 years' experience working in diagnostic clinical biochemistry in the field of immunoassay and endocrinology including management of a major clinical endocrinology laboratory. In 1997/98, the laboratory reported some 245,000 patient results. Between 2003 and 2009 he was the Director of the Hanson Institute, the research arm of the IMVS and RAH. In 2009 the Hanson Institute administered infrastructure to support the research of some 300 staff and 100 postgraduate students who generated external grants amounting to approximately \$AUD 30 million annually.

Prof. Morris leads an active research team that has received over \$10 million in competitive research grants and has published 280 refereed publications, reviews and book chapters. His research interest includes the pathophysiology of metabolic bone disease and the effects of hormones including vitamin D. His research has been funded by the National Health and Medical Research Council and Australian Research Council, the major competitive funding bodies in Australia. His latest work has identified anabolic actions of vitamin D following metabolism within bone tissue providing a molecular mechanism for vitamin D requirement to reduce the risk of fractures amongst the elderly. He was awarded the Louis Avioli Memorial Lectureship for 2009 by the American Society for Bone and Mineral Research on this topic.



Past President
Prof. Maurizio FERRARI

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Maurizio Ferrari, (M.D.), is Full Professor of Clinical Pathology, University Vita-Salute San Raffaele, Director of Clinical Molecular Biology and Cytogenetics Laboratory, and Head of Genomic Unit for the Diagnosis of Human Pathologies, Division of Genetics and Cell Biology, IRCCS San Raffaele, Milan, Italy. He received his Degree in Medicine at the Milan University, is specialized in Pediatrics, Haematology and Medical Genetics. He was Post-doc at Hospital Paul Brousse, Villejuif, Paris and Honorary Registrar in Haematology at UCH, London.

He was Scientific Coordinator of Clinical Research, IRCCS H San Raffaele, Milan (1996-1999), Chairman of Committee on Clinical Molecular Biology Curriculum of IFCC (2002-2007), member of IFCC Task Force on Pharmacogenetics (2008-2013.), member of the Education and Management Division of IFCC (2008-2011). He was Chairman of the Education and Management Division of IFCC (2012-2014), advisor of CLSI Committee on Molecular Methods.

He was Dean of the Master's Degree in Molecular and Cellular Medical Biotechnology (2008-2017) and President of the European Society of Predictive Medicine (2009 at present).

He received in 2004 the IFCC-Abbott Award for Significant Contributions in Molecular Diagnostics.

His scientific interests are oriented mainly on molecular diagnostic methods, nucleic acid circulating in maternal plasma, molecular studies of several genetic pathologies. He developed methods for DNA analysis as multiplex PCR and capillary electrophoresis also in a temporal thermal gradient, set up a method involving the ligase chain reaction (LCR) and developed a new method known as double-gradient DGGE (DG-DGGE) for the identification of unknown mutations. In the last 4-5 years he has focused his research activity on the detection of foetal DNA in maternal plasma for non-invasive prenatal diagnosis and for diagnostic application in the genetic and oncology field. At present, his research is focused on the development of diagnostic tests with the application of the next generation sequencing and on liquid biopsy applications in oncology with specific focus on new technologies and methods standardisation.



Secretary:
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Dr. **David Kinniburgh** (MSc, PhD, DABCC, FCACB) is a board-certified clinical chemist and fellow of the Canadian Academy of Clinical Biochemists whose career in laboratory medicine spans more than four decades. He has worked in the public, private and academic sectors in clinical chemistry, toxicology and medical laboratory management and is recognized as a qualified expert witness in clinical chemistry, toxicology and laboratory operations for the Canadian justice system.

Currently a Clinical Professor with the Department of Laboratory Medicine and Pathology at the University of Alberta and an Adjunct Associate Professor with the Department of Physiology and Pharmacology at the University of Calgary's Cumming School of Medicine, Dr. Kinniburgh is also Director of the Alberta Centre for Toxicology (ACFT) and a consultant in clinical chemistry, toxicology and medical laboratory operations. As Director of the ACFT, he oversees operations to provide the highest quality of public health toxicology testing for the province of Alberta while leading an active research program in the areas of environmental toxicology and human health.

Dr. Kinniburgh began his career in laboratory medicine in 1972 as a lab technologist and went on to receive his MSc in clinical chemistry and PhD in analytical toxicology from the University of Calgary. He did his post-doctoral training in clinical chemistry at the University of Utah, and went on to become Vice President, Technical Director, and National Director of the Substance Abuse Testing Laboratory (SAMHSA accredited) at Dynacare Kasper Medical Laboratories in Edmonton and later, Vice President, Laboratory Operations and Diagnostics for Isotechnika Inc., an Edmonton-based drug development company.

Dr. Kinniburgh was the inaugural President of the IFCC North American Federation of Clinical Chemistry and Laboratory Medicine (NAFCC, 2015–2017) and as part of that role, also the representative to the IFCC Executive Board (2015–2017). He was President of the Canadian Society of Clinical Chemists from 2014 to 2015 and served previously as their Treasurer. He is currently President of the Alberta Association of Clinical Laboratory Doctoral Scientists and has served as President of the Alberta Society for Human Toxicology and the Alberta Society of Clinical Chemists.

Dr. Kinniburgh has also served on a number of committees related to laboratory medicine provincially and nationally and currently sits on the Canadian Leadership Council on Laboratory Medicine and the LabCANDx Steering Committee, an organization established to promote the value of laboratory medicine. He is a team leader for the College of American Pathologists Forensic Drug Testing Laboratory Accreditation program, and a member of the American Association for Clinical Chemistry Education

Core Committee. He has also served on several organizing committees for local, national and international scientific conferences. In 2010, Dr. Kinniburgh was awarded the CSCC Award for Outstanding Contributions to Clinical Chemistry.

As part of his commitment to research and training, Dr. Kinniburgh is co-coordinator for the medical laboratory science course Applied Toxicology at the University of Alberta and lectures in the University of Calgary Master of Biotechnology program. He also participates in the training and supervision of master's, PhD, and post-doctoral students as well as clinical biochemistry trainees. He is active in a number of professional societies, has published more than 30 articles and reports, made numerous scientific presentations to the medical and technical community and to the public sector, and has consulted to government groups and the private sector.

Dr. Kinniburgh lives in Calgary, Alberta, Canada with his wife Lynne, a retired nurse, and they have two grown children and five young grandchildren. His passion is laboratory medicine, but he has many other interests and hobbies including sailing, motorcycling, reading and being an amateur handyman.



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Dr **Tomris Ozben** (Ph.D., D.Sc. Med. Lab Specialist) is a full professor at the Dept. of Clinical Biochemistry, Faculty of Medicine, Akdeniz University, Antalya Turkey. She obtained her BSc. degree from American University “Robert College” in Istanbul, Turkey; Ph.D. in Biochemistry from Ege University, Izmir, Turkey; and Specialty in Clinical Biochemistry from Marmara University, Istanbul Turkey. During her tenure at Akdeniz University, she has been Vice Rector, Director of Research Funds, Chairman of the Dept. of Clinical Biochemistry and Founding Director of Central Laboratory at Akdeniz University Hospital which includes Clinical Chemistry, Microbiology, Virology, Toxicology, Haematology, Immunology, Coagulation, Therapeutic Drug Monitoring, Emergency, Preatalytical and Point of Care Services. She has worked for 10 years in the Ethical Committee of Akdeniz University Hospital and Medical School on themes concerning drug research in clinical trials.

Dr Ozben has served as the Commission Member of the Turkish Ministry of Health for restructuring Medical Education and Teaching and Member-Elect of the Turkish High Educational Council for four years. She has been appointed as the National Scientific Representative by the Scientific and Technological Research Council of Turkey (TUBITAK) with the approval of the Ministry of Foreign Affairs since 2008. Currently, she is one of the Directors at Akdeniz University Hospital Central Laboratory and principal investigator of many research projects.

Teaching Clinical Laboratory Medicine to medical and non-medical students, residents, and fellows has been a primary activity in Dr Ozben’s career. She delivers lectures on a variety of topics to clinicians and laboratory scientists. She serves as a mentor to numerous graduate students and takes part at Post-Graduate Education Programmes (Specialty and PhD) at Akdeniz University. In 2003, she received “Akdeniz University Outstanding Contribution” award, and in 2006 “Akdeniz University Science” award. In 2002, she received AACC Van Slyke Society and in 2005 AACC TDM/Toxicology Division awards. In 2016, she received “Distinguished Abstract for Scientific Excellence” award of AACC’s National Academy of Clinical Biochemistry (NACB). She is the author of 240 peer reviewed manuscripts, 13 book chapters and editor of 3 books published by the International Publishers (Plenum Press, New York; IOS Press, Amsterdam). She has attended more than 200 international congresses as an invited speaker.

Dr Ozben has organised several International Congresses, Courses, Workshops, Young Scientists Forums and Meetings supported by IFCC-EFLM-FEBS-IUBMB-

BCLF-NATO-TUBITAK and served as an Organising and Scientific Committee Member of several EuroMedLabs (Innsbruck 2009; Berlin 2011; Milan 2013; Paris 2015); WorldLabs (Fortaleza 2008; Berlin 2011; Istanbul 2014); IFCC General Conferences (Antalya 2008; Corfu 2010; and Kuala Lumpur 2012); Steering Committee Member of IFCC-Roche Bergmeyer Conferences (2008-2015); Member of the International Advisory Board of the 18th ICCCLM 2002, Kyoto, Japan; IFCC/AACC 2005, Orlando, USA; EuroMedLab 2005 Glasgow, UK.

Dr Ozben has been the President (2000-2003), Past-President (2003-2006) and Executive Board member (2006-present) of the Balkan Clinical Laboratory Federation (BCLF); Advisory Board member of Forum of European Societies of Clinical Chemistry and Laboratory Medicine (FESCC; 2001-2008); Advanced Courses Committee member of the Federation of European Biochemical Societies (FEBS; 1997-2001); American Biographical Institute, Research Board of Advisors since 2001. She is a member of the Editorial and Advisory Boards of many Scientific Journals, reviewer for several journals, and scientific projects evaluator for the Italian Ministry for University Education and Research (MIUR; 2003-present), Ministry of Science and Environmental Protection of Republic of Serbia (2005-present) and Israel Science Foundation (2012-present).

Dr Ozben served actively to IFCC since 2001, as the Chair of the IFCC Congresses and Conferences Committee (C-CC) (for two consecutive terms; seven years); previously as Full Member (three years) and Corresponding Member (three years) of C-CC. She has completed her service to IFCC as the Treasurer elected by the IFCC Council between 2015-2017. She has been re-elected as the IFCC Treasurer starting service from 2018 till the end of 2020. She is a member of the Board of Directors of the IFCC Foundation for Emerging Nations (FEN), a non-profit making Charitable Trust established in 2016 under Swiss Law. The Foundation is devoted to fund raising and supporting programs that help to improve the quality and delivery of laboratory medicine services, particularly in emerging nations.

She is married to Professor Dr Aldo Tomasi having a daughter and twin sons, all three of whom are medical doctors.



**Corporate Member
Representative
Rolf Hinzmann**

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Rolf Hinzmann, (MD, PhD), is 'Head of Global Medical Affairs, Glucose Monitoring and Science' at Roche Diabetes Care and is based in Mannheim, Germany. The focus of his work is on self-monitoring of blood glucose and continuous glucose monitoring and the role of technology, combined with digital solutions, for achieving sustainable behavioral change in patients with chronic disease.

Dr. Hinzmann studied Medicine and Biochemistry at Hannover Medical School and Hannover University, Germany, and completed his PhD in Biochemistry at the Max Planck Institute for Experimental Endocrinology in Hannover. Thereafter, he worked in the field of laboratory diagnostics (clinical chemistry, immunology, haematology, immunohaematology, blood banking, microbiology, serology, molecular biology) and internal medicine at Hannover Medical School and qualified as Clinical Pathologist (in German: Arzt für Laboratoriumsmedizin).

He continued his medical career in the in-vitro diagnostic industry where he spent over 20 years in various management positions at Beckman Coulter as a European Scientific Marketing Manager, at Sysmex Europe as Medical Director Europe, and since 2010 in the above-mentioned position at Roche.

Dr. Hinzmann has many publications in the field of clinical chemistry, haematology and diabetes and is a requested lecturer at scientific conferences. Several times he was rated distinguished speaker by the American Association of Clinical Chemistry (AACC).

His special interests are evidence-based medicine, cardiovascular disease, diabetes and metabolism, standardization of laboratory tests, point-of-care testing, self-empowerment of patients and behavioral change, didactics in medicine and philosophy of science.

Dr. Hinzmann held various positions in the IFCC: Corporate Representative of the Executive Committee of the Scientific Division (2001-2006), Corporate Representative of the Executive Committee of the Education & Management Division (2007-2012), and Member of the Task Force POCT (2013-2014).

Since 2015 Dr. Hinzmann has acted as the interface between IFCC and the in-vitro diagnostic industry as Corporate Representative at the IFCC Executive Board.



**Regional Federation
Representative:
Prof. Adekunle B OKESINA**

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Professor **Okesina** graduated with MBBS degree from the University of Lagos in 1980. He held a clinical attachment at the Institute of Neurology Queens Square London and East Surrey Hospital between 1987 and 1988., He became Fellow of the National Postgraduate Medical College of Nigeria (NPGMCN) in 1988 and of the West African College of Physicians (WACP) in Chemical Pathology in 1989. From 1991 to 1993, he was a Commonwealth Medical Research Fellow in Clinical Endocrinology at Hammersmith Hospital and Royal Postgraduate Medical College in London. He was appointed Lecturer 1 at the University of Ilorin in 1989, Reader in 1994 and full Professor in 2000. He was appointed Consultant Chemical Pathology Unilorin Teaching Hospital in 1989. He was visiting lecturer to University of Transkei (Walter Sisulu University) in South Africa between 1997 and 2000. Professor Okesina was former Vice-Chancellor, Osun State University Nigeria.

Prof. Okesina has been involved with the annual revision and update courses of NPGMCN and WACP since 1993. He was Member of the Faculty Board of Pathology from 1993 to 1997 and Member of the Senate, NPGMCN from 2007 to 2011. He was Chairman, Faculty of Pathology of WACP from 2007 to 2011 and Chief Examiner for Faculty of Pathology, WACP from 2011 to 2013.

Prof. Okesina has served as external examiner to many Universities in Nigeria and Africa, including, Universities of Lagos, Ibadan, Jos, Ahmadu Bello, Port Harcourt, Calabar, Cape Peninsula South Africa, Nairobi Kenya and Ghana. He is also a member of the accreditation team to visit the University of Ghana Teaching Hospital, University of Gambia Queens Hospital and many Universities and Teaching Hospitals in Nigeria.

Prof. Okesina has won several academics distinctions and scholarships, including the Oyo State Merit Scholarship Award and the Commonwealth Medical Fellowship, which he spent in Britain as a Medical Research Fellow. He has over 80 publications peer-review journals. His research interest is in diabetes mellitus and chronic non-communicable diseases. He has trained more than 14 specialists in Chemical Pathology out of which four have become Professors.

Prof. Okesina was the National President of Association of Clinical Chemists of Nigeria 2007 to 2016 and the President of the African Federation of Clinical Chemistry (AFCC) from 2013 to date. He was appointed Foundation Fellow of the College of Pathology of East Central and South Africa (COPECSA) in 2014.

Prof. Okesina is married with children. He is a charter member of Ilorin Central Lions where he received many National and International Awards for services to the community.



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Professor **Abderrazek Hedhili** is Professor of Toxicology at the Faculty of Pharmacy of Monastir and at the Faculty of Medicine of Tunis and Health Institutes. He is Head of the Biology & Toxicology Laboratories in the Tunisian Poisoning Control Center Centre Mahmoud Yacoub de Medecine d'Urgence; Chair of the Laboratory of Toxicology & Environment research LR12SP07; Toxicologist consultant for the Tunisian ministries of Health, Social Affairs and Environment, member of the Tunisian Environmental Agency (ANPE) and of the Tunisian control Agency (ANCSEP); member of the Board of Directors INAS and Toxicologist expert for many international organizations; WHO advisor on drugs abuse; member of the OIT (atmospheric and work polluters) and of the Arab Organization of Work (polluters in the work areas) .

Prof Hedhili has been active in the promotion of Clinical Chemistry and Laboratory Medicine throughout the world and in particular in the Arab countries and in Africa. His research and professional activities have sizable impact on Clinical Chemistry in general and toxicology in particular. He has been designed as member of the International Scientific Board of IFCC congress (Berlin 2011 and Istanbul 2014).

Since 1998, Prof Hedhili activities include the organization of several international (Arab, African and Francophone) and national (15 annual "Journées Nationales de Biologie Clinique", JNBC) conferences, workshops, symposia and other scientific activities). In addition, he contributed to the organization of the Congresses of the Arab Federation (AFCB) in Morocco (2000), Tunisia (2004), Syria (2006), Lebanon (2009), Jordan, Sudan (2015) and 2nd IFCC Conference (Sousse –Tunisia, 2004), and the FIFBCML conferences in Morocco (2008) and Tunisia (2010).

Prof Hedhili is member of many International Journals as a scientific board member. He is the author and co-author of 80 published articles and he is responsible of the Laboratory of Toxicology & Environment research (50 researchers) and have supervised more than 50 researchers (thesis projects, masters). His mainly research areas are: pesticides, mycotoxins, drug abuse, chemical risks, trace elements, drug monitoring, environmental pollutants, bio and chemical hazards, impact of toxic elements on biological and clinical parameters.

Prof Hedhili has been the general secretary (1999-2005) and president of the Tunisian Society of Clinical Biology (2005-2011). He served as Secretary, President, Past President and Vice-President (2016) of the Arab Federation of Clinical Biology (AFCB) where currently he is President of the Scientific Committee. He was President, Vice-President and member of the Federation International Francophone de Biologie Clinique et de Medicine du Laboratoire, (FIFBCML). He was President of the Tunisian

Friendly Pharmacists and General Secretary and Vice-President of Tunisian pharmacists Council (since 2011). Prof Hedhili was IFCC representative of the Tunisian Society(2005 -2011), Corresponding Member of the IFCC C-CC and of the WG eNews, funding member of the AFCB. Between 2005 and 2011, as representative of the Tunisian Society, hespearheaded 2 IFCC sponsored activities in Tunisia . He is an elected member of the French Academy of Pharmacists since September 28, 2016.



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Prof **Sunil Sethi** (MBBS (S'pore), M.Med (Int. Med), MRCP(UK), FRCPath, MAACB, PhD) is Senior Consultant and Head of Clinical Chemistry at the Department of Laboratory Medicine at the National University Hospital (NUH), Singapore. He graduated from the National University of Singapore and completed his specialist degree in internal medicine with the Masters of Medicine (Internal Medicine) and the Fellowship of the Royal College of Physicians (UK). He subsequently went on to achieve his PhD in Clinical Biochemistry from the University of Surrey, United Kingdom, with his research work focused on postprandial lipid and lipoprotein metabolism. He is a Fellow of the Royal College of Pathologists (FRCPath) in Chemical Pathology.

As Associate Professor in the Department of Pathology at National University of Singapore, Prof Sethi is zealous in imparting his knowledge and experience to students. Besides his current appointments, he also holds esteemed positions in numerous boards and committees and he is the current President of the Singapore Association of Clinical Biochemists (SACB) and the President of the Asia-Pacific Federation for Clinical Biochemistry and Laboratory Medicine (APFCB).

In addition to his administrative responsibilities in the clinical laboratory, Prof Sethi conducts a regular lipid and metabolic disorder clinic at the National University Hospital, Singapore. Prof Sethi has a particular passion and research interests in laboratory workflow, laboratory automation, laboratory informatics and in clinical biomarker utilization.



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Prof. **Sverre Sandberg** (MD, PhD, Specialist in Laboratory Medicine) is director of NOKLUS, a Norwegian organisation for quality improvement of laboratory activity (www.noklus.no) which serves about 80 hospital laboratories and about 3000 users of POC equipment outside hospitals (GP offices, nursing homes, oil platforms etc); chair of SKUP, Scandinavian Evaluation of Laboratory Equipment for Primary Health Care (www.skup.nu); and director of the Norwegian Diabetes Registry. He is director of the Norwegian Porphyria Centre (NAPOS) (www.napos.no). He is professor at the Institute of Global Health and Primary Health Care at the University of Bergen. From 2002 – 2012 he was director of Laboratory of Clinical Biochemistry at Haukeland University Hospital in Bergen.

Prof Sandberg was from 1996 – 2002 chair of the Committee on Evidence-Based Laboratory Medicine and from 2002 – 2008 chair of The Global Campaign of Diabetes Mellitus in IFCC (International Federation of Clinical chemistry and Laboratory Medicine). Since 2000 he has been a board member of EPNET (European Porphyria Network), a partly EU-funded project. From 2012-14 he was president of the European Organization for External Quality Assurance in Laboratory Medicine (EQALM). In 2009 – 2014 he was chair of the Scientific Committee in EFLM (European Federation of Clinical Chemistry and Laboratory Medicine). From 2014-15 he was vice president and from 2016-2018 president of EFLM. He is chair or member of different working groups in EFLM and IFCC.

Prof Sandberg has written peer reviewed papers and book chapters and given international lectures in his fields of interests: evidence based laboratory medicine, quality improvement of point of care instruments, biological variation, performance specifications in laboratory medicine, quality assurance of the total testing process, laboratory aspects of diabetes, porphyria and photobiology. He has supervised numerous PhD students and received some awards.

Prof Sandberg likes the sound of raindrops and of the wind sighing through the trees.



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Rosa Isabel Sierra-Amor (PhD, MSc), Clinical Biochemist, received her MSc. and PhD degrees from the Autonomous University of México, UNAM. She did a fellowship in biochemistry at the Department of Endocrinology and Metabolism, Jewish Hospital and Washington University School of Medicine in St. Louis Mo. USA (1982), and a post graduate course in clinical chemistry, University of Reading, England (1986). From 1980 to 1990, she worked as faculty and Head of the Laboratory, Nephrology and Mineral Metabolism Department of the National Institute of Medical Sciences and Nutrition SZ in Mexico City; from 1990-2003, she directed the Bone and Mineral Metabolism Research Laboratory at the Division of Neonatology, Department of Pediatrics, University of Cincinnati, and Children's Hospital Medical Center in Cincinnati, Oh. USA. Since 2004 she is board member of Laboratory LAQUIMS, S.C. and QC/QM Consultant.

In Mexico, Dr Sierra-Amor has collaborated closely with the Mexican Accreditation Entity as member of the National Assessment Panel, and former Board Member www.ema.org.mx; she acted as external consulting member for the postgraduate program in clinical laboratory science at the University of Veracruz. With BIO RAD Mexico and Latin America, she initiated in 2006 the International Conference on Quality with the auspices of IFCC; she has lectured on laboratory accreditation, quality topics, and bone and mineral metabolism in Mexico, Latin America, and internationally. In 2012, she was elected president of the Mexican Association of Clinical Laboratory Sciences (2013-2014) www.cmclcmx.org

In IFCC, Dr Sierra Amor has participated as member of the Executive Board (1997-2002 and 2014-2017), e.JIFCC WG News, JIFCC Editorial Board; Awards Committee member; and WG-IANT/RIA member. She served as member of the WHO Laboratory Services Advisory Panel (1997-2001); she is member of the AACC Latin American WG (since 2010); former AACC Treasurer, Materno-Fetal Division; former Chair of Membership awards, Ohio Valley Section; and former AACC International Relations Committee member.

Dr Sierra-Amor was awarded with the Latin American Ames Award (1993), the AACC International Fellowship Award (1996). She has also received awards from several other professional and health organizations from Mexico.



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Ann Gronowski, Ph.D., is Professor in the Departments of Pathology & Immunology and Obstetrics & Gynecology at Washington University School of Medicine in St. Louis Missouri, USA. She is Co-Medical Director of the Clinical Chemistry and Serology/Immunology laboratories at Barnes-Jewish Hospital. Dr. Gronowski received her Ph.D. in Endocrinology- Reproductive Physiology from University of Wisconsin, and is a diplomate of the American Board of Clinical Chemistry.

Dr. Gronowski has held a number of professional representative roles in the United States including AACC board of directors, AACC treasurer and AACC president. She has also served as president of the American Board of Clinical Chemistry (ABCC) and secretary/treasurer of the Commission on Accreditation for Clinical Chemistry. She currently serves as editor for the clinical case studies feature in the journal Clinical Chemistry.

At the international level, Dr Gronowski has served as the AACC National Representative to IFCC, served on the IFCC Award's Committee and as chair of the IFCC Task Force on Ethics.

Dr. Gronowski has received a number of honors including the AACC Young Investigator Award in 1996, the AACC award for Outstanding Contributions Through Service in 2010, and in 2016 she received the AACC award for Outstanding Contributions Through Education.

Dr. Gronowski's research focuses primarily on the laboratory diagnostics of endocrinology and reproductive physiology with a particular emphasis on maternal fetal medicine. In particular, her laboratory has examined markers of pre-term delivery, markers of ectopic pregnancy and the analytical and clinical complexities of measuring hCG. She edited a book entitled Handbook of Clinical Laboratory Testing During Pregnancy. Dr. Gronowski has a passion for teaching and mentoring and a long-standing interest in biomedical ethics.

1.4. CLINICAL CHEMISTRY AND LABORATORY MEDICINE: ROLE IN HEALTHCARE

Clinical Chemistry and Laboratory Medicine is the application of chemical, molecular and cellular concepts and techniques to the understanding and the evaluation of human health and disease. At the core of the discipline is the provision of results of measurements and observations, together with interpretation and informed clinical advice relevant to:

- The maintenance of health
- The cause of disease
- The diagnosis of disease
- Predicting and monitoring the response to therapy
- Follow up investigations

The discipline is committed to deepening the understanding of health and disease through fundamental and applied research. The use of chemical techniques to examine biological fluids may be traced back more than 300 years. However, it is only in the past 100 years that reliable quantitative assays have become established for constituents in blood and urine. It was in the late 1940s that the first scientific societies and the first journals bearing the title Clinical Chemistry were established. The International Federation of Clinical Chemistry (IFCC) was established in 1955.

In the past 60 years there has been a rapid expansion in Clinical Chemistry and also in other disciplines of Laboratory Medicine including Haematology, Transfusion Medicine, Immunology, Medical Microbiology and Clinical Genetics. These disciplines often use similar technology and may be used in combination to assist the investigation and management of patients. As a result the term Laboratory Medicine is becoming more widely adopted, although its exact definition varies between countries. In recognition of this development the Federation changed its name in 1996 to the International Federation of Clinical Chemistry and Laboratory Medicine, although it maintained the abbreviation IFCC. Today it is widely accepted that as much as 70% of clinical decisions in healthcare are informed by Laboratory Medicine.

Advances in Clinical Chemistry and Laboratory Medicine have occurred as a result of improved knowledge and understanding of the pure sciences (mathematics, physics, chemistry); related medical sciences (biochemistry, physiology, genetics, cellular and molecular biology); and technology (instrumentation, automation, information technology, nanotechnology). As a result, modern medical laboratories incorporate highly sophisticated equipment and methodologies. High throughput analytical platforms capable of performing tens of thousands of tests per day sit alongside state of the art mass spectrometers, cell counters and micro-array systems. Consequently, modern medical laboratories require highly trained and skilled medical practitioners, scientists and technologists, including specialists in analysis, clinical application, information management, proteomics and bioinformatics.

Furthermore, the advances in technology have enabled increasing amounts of Clinical Chemistry and Laboratory Medicine to be delivered outside medical laboratories, closer to the patient. Point of care testing now occurs in hospital wards, clinics, doctor's offices, community pharmacies, places of work and in the home. Whilst point of care testing is designed for use by non-specialists, considerable education and support is required to ensure high quality results and an understanding of their clinical significance. The diversification of Clinical Chemistry and Laboratory Medicine has created a natural and positive partnership between Laboratory Medicine specialists in clinical laboratories and

in the in-vitro diagnostics industry. Typically, original science in research laboratories leads companies to develop new diagnostic products that are translated into service and validated in medical laboratories

In the modern era of Clinical Chemistry and Laboratory Medicine results are not enough. The quality of results has to be assured. Quality assurance is an all-embracing agenda that includes:

- Internal quality control
- External quality assessment
- Quality management and laboratory accreditation
- International method standardisation to the highest level of traceability
- Harmonisation of nomenclature, properties and units

Quality results are still not the finished product because they need to be converted into knowledge that is then used to shorten patient pathways and lead to improved patient outcomes. Knowledge management includes:

- The application of evidence-based medicine
- The development of practice based clinical guidelines
- Participation in multidisciplinary teams
- Translational research
- The development of personalised medicine
- Promoting the contribution of Clinical Chemistry and Laboratory Medicine to healthcare

As the leading worldwide professional organisation for Clinical Chemistry and Laboratory Medicine IFCC has a responsibility to be at the forefront of international scientific and clinical development whilst providing education and management support to its members to improve the quality of their service and to convert that quality into transferable and clinically valuable knowledge. The following paragraphs on the IFCC Mission, Strategic Plan and Strategic Objectives explain how IFCC discharges that responsibility.

1.5. MISSION STATEMENT AND AIMS OF IFCC

Mission statement

Our mission is to be the leading organisation in the field of Clinical Chemistry and Laboratory Medicine worldwide.

Aims of IFCC

“Through leadership and innovation in science and education we will strive to enhance the scientific level and the quality of diagnosis and therapy for patients throughout the world. We will build on the professionalism of our members to provide quality services to patients. We will aim to communicate effectively with our members, other healthcare providers and the public to ensure knowledge of our excellent scientific and educational achievements. We will focus always on scientific standards, publications, education and communications. We will communicate effectively through a variety of electronic media. We will hold outstanding congresses and conferences to bring the efforts of IFCC to the global community”.

The specific aims of IFCC are:

- To complement and enhance the activities of its members
- To transcend the boundaries of a single nation or a single corporation, or a geographical, cultural or linguistic group of nations in developing the field of Clinical Chemistry and Laboratory Medicine
- To provide a forum for standardisation, in the broadest sense, at a high level
- To disseminate information on “best practice” at various levels of technology and of economic development
- To promote a vision of Clinical Chemistry and Laboratory Medicine that extends beyond traditional narrow perceptions of the field.

IFCC achieves these aims by:

- Publishing information and guidelines relating to the education of clinical chemists and laboratory physicians
- Defining principles and publishing recommendations for the standardisation of analytical procedures and for the interpretation of analytical results
- Promoting meetings of clinical chemists and laboratory scientists through congresses, symposia and workshops in Clinical Chemistry and Laboratory Medicine, and by encouraging dialogues with clinicians on matters of common interest.

IFCC has a major responsibility for co-ordinating the development of Clinical Chemistry and Laboratory Medicine on an international basis. In fulfilling this responsibility, it cooperates with many other international, regional and national organisations, particularly in the fields of education and standardisation. IFCC also assists and encourages the creation and organisation of national societies of Clinical Chemistry and Laboratory Medicine in countries where these do not yet exist and establishes and maintains contact with individual clinical scientists in parts of the world where there is no professional body specifically concerned with Clinical Chemistry and Laboratory Medicine. IFCC is a non-political organisation that believes in high ethical standards, equal opportunities and freedom of movement for laboratory professionals around the nations of the world.

In January 2016 IFCC convened a strategic workshop to re-examine and update its Mission Statement and Aims. This workshop resulted in a new Vision Statement and a series of eight Areas of Expertise to support the Vision Statement. These are listed below:

Vision Statement

‘We advance excellence in laboratory medicine for better healthcare worldwide’.

Areas of Expertise

The eight areas of expertise to support the IFCC Vision Statement are:

- Applying science to promote harmonization and innovation in laboratory medicine by drawing on worldwide expertise
- Developing and delivering educational programmes globally to foster expert laboratory medicine professionals
- Using evidence-based processes to define and promote the value of laboratory medicine in healthcare worldwide
- Being responsive to the unique and regional needs of our Members
- Being open-minded and aware of innovations and new developments in the science of laboratory medicine
- Striving for efficiency and effectiveness within our organizational structure
- Being transparent and responsible in our financial affairs
- Being mindful of the international ethical codes pertaining to our activities.

In formulating its strategic action plans for 2017 and beyond the Executive Board takes heed of both the original IFCC Mission Statement and Aims and the updated Vision Statement and Areas of Expertise.

1.6. OVERALL STRATEGIC PLAN FOR IFCC

The original IFCC strategic plan was conceived and refined during the period 1990-1994 by the Executive Board and reviewed by National Societies and Corporate Members. This strategic plan was subsequently revisited and revised by successive Executive Boards. The ongoing strategic plan is intended to achieve a number of principal objectives, with the priorities and tactical implementation being guided by the IFCC Membership. These internal and external changes are all intended to maintain IFCC as a valid and credible resource of expertise for the improvement of patient care through laboratory medicine, and to fulfil our vision: “We advance excellence in laboratory medicine for better healthcare worldwide”.

Principal objectives of the strategic plan:

- To improve and maintain the multidisciplinary and international leadership of IFCC in standardisation activities.
- To ensure that its standardisation and research activities are more oriented towards the patient and towards the health of the individual.
- To ensure consistency between its activities and the stated expectations of the IFCC members, recognising the needs of both developed and developing countries.
- To develop and maintain IFCC communications, to promote publications and products from IFCC, including publications and reference materials, and to set up joint promotion activities with international organisations such as WHO, WASPaLM, IUPAC, IRMM, CLSI and others.
- To establish collaborations, joint meetings and projects with international organisations having interest in the field of Laboratory Medicine such as IUPAC, ISTD, IATDMCT, IRMM, CLSI.
- To promote IFCC through international and regional congresses.
- To promote Members’ activities.
- To encourage professional development of individuals in National Societies and Corporate Members, and the recruitment of new members and experts to IFCC functional units.

- To develop and maintain Public Relations.

Each new IFCC Executive Board revisits and interprets these principal objectives so that they are fresh and relevant to current issues, challenges and opportunities. The result is a series of specific strategic objectives for the three-year period of an Executive Board.

1.7. STRATEGIC OBJECTIVES 2015-2017

The Executive Board for 2018-2020 has identified the following strategic objectives for its term of office. They are in accord with the overall IFCC strategic plan and the principal objectives outlined in Section 1.6. They are intended to be in addition to the ongoing work of Divisions and the Regional Federations.

Introduction

This document was developed from a focused meeting of the Executive Board (EB) held in February 2018. It represents the consensus of EB on its priorities for the next three years. The document concentrates on EB priorities and it is intended to complement the planning and actions of IFCC Divisions, Committees, Working Groups and Task Forces. Some of the identified priorities may overlap with the work of Divisions and Regional Federations, and dialogue is required to ensure a co-ordinated approach.

The document identifies 16 strategic actions which have been classified into the following four broad areas:

- A. Supporting our Membership
- B. Broadening our Horizons
- C. Improving the Quality of Laboratory Medicine
- D. Improving the effectiveness of IFCC

Each strategic action will be assigned a timeline over the period February 2018 – December 2020. Each strategic action will also be assigned to a member of EB who will lead that particular initiative. Progress with, and review of the strategic development plan will be an integral part of all future EB meetings during 2018-2020. It is intended that the plan will be modified in the light of changing circumstances.

Area A: Supporting our Membership

Number	Strategic Action
1	<ul style="list-style-type: none"> a) Vertical integration of educational programs b) Continue to publicize educational resources available from IFCC c) Work with National Members and Federations to make better use of the educational resources available from IFCC d) Continue to promote 2-way communication with National Members and Federations and coordinate activities. e) Continue to develop and present a series of webinars to meet the needs of Members.
2	<ul style="list-style-type: none"> a) Maintain and improve communication with COLABIOCLI and Members in Latin America, as required. b) Maintain and improve communication with AFCB and Members in Arab countries, as required. c) Maintain and improve communication with AFCC and Members in African countries, as required. d) Maintain and improve communication with EFLM and Members in the European countries, as required. e) Maintain and improve communication with APFCB and Members in the Asia-Pacific countries, as required. f) Maintain and improve communication with NAFCC and Members in the North American countries, as required.
3	Conduct a survey of age, sex, geography and corporate membership for all IFCC functional groups, and develop a plan to address any disparities.
4	Establish a Working Group made up of Corporate Members to identify and prioritize their needs, and possible projects, along with recommended membership. Assign to appropriate Division.
5	Promote to Corporate Members the use of the IFCC registry of experts.

Area B: Broadening Our Horizons

Number	Strategic Action
6	Translate the principles of metrology to one new project each year in areas of laboratory medicine other than clinical chemistry. Work through Divisions.
7	Establish at least one new collaboration each year with an international clinical organisation. An international scientific association, the European Society for Clinical Cell Analysis (ESCCA, President Anna Konstanti), is interested to join IFCC.
8	Invite organisations from outside laboratory medicine to contribute to the IFCC meetings to promote better interaction with healthcare professionals. Project based.
9	Reach out to LIS vendors to collaborate on symposia presentations and development guidelines and standards of practice. Identify possible projects to standardize and harmonize post analytical LIS processes. Encourage IFCC Corporate membership.
10	Explore the use of electronic meetings by IFCC functional groups. CPD into this.
11	Explore the potential evolution of congress format to include electronic participation. CCC to look into this.

Area C: Improving the Quality of Laboratory Medicine

Number	Strategic Action
12	In conjunction with others develop a route to laboratory accreditation for developing countries - DQCLM
13	Identify the objectives with respect to a media campaign to promote the IFCC and the value of lab medicine.
14	Strengthen the links and collaboration with the World Health Organization (WHO)

Area D: Improving the Effectiveness of IFCC

Number	Strategic Action
15	Performance evaluation of functional units including EB
16	Develop a new fee structure and implementation plan for Affiliate members

1.8. A BRIEF HISTORY OF THE IFCC

1.8.1. Introduction

In 1952, Professor E J King of the Royal Postgraduate Medical School in London suggested that the then emerging national societies of clinical chemistry should organise into an international body under the auspices of the International Union of Pure and Applied Chemistry (IUPAC). This was accomplished on July 24, 1952, at the Second International Congress of Biochemistry in Paris, by the formation of the International Association of Clinical Biochemists. A year later, in Stockholm, it was resolved to change the name to the International Federation of Clinical Chemistry, and this was formally adopted at the next meeting which took place in 1955 in Brussels.

The initial objectives of the Federation were to “advance knowledge and promote the interests of biochemistry in its clinical (medical) aspects”. In the early years, IFCC was closely associated with the IUPAC Commission (later Section) of Clinical Chemistry, and initially, the Committee of IFCC comprised the members of the IUPAC Commission. It was recognised, however that the IFCC should become independent, but would retain its contacts with IUPAC through affiliation as an Associate Member.

This was accomplished in 1967, when the two organisations were formally separated.

With time, the organisational structure of IFCC developed so that its efforts in science, education, and publishing, as well as its financial affairs, and congress activities were dealt with by Divisions or Committees and, where appropriate, supported by other Committees and groups responsible for specific tasks. IFCC is now a Federation of 89 Full Member national societies of Clinical Chemistry and Laboratory Medicine and 9 Affiliate Members, representing about 45.000 individual clinical chemists, laboratory scientists, and laboratory physicians and 52 Corporate Members covering the major areas of clinical laboratory developments. In 2002 John Lines and Jacques Heeren published “IFCC Celebrating 50 Years”. This book is a more comprehensive history of the Federation and is available from the IFCC office.

1.8.2. IFCC Presidents

The history of IFCC must include reference to the eminent clinical chemists who have served as President and guided its development. Professor E J King conceived the idea of the Federation, brought it into being, and guided it through its early years to become the group to which all national societies of Clinical Chemistry could look for guidance. His untimely death created a vacuum which Professor Monroe Freeman ably filled for three years.

He was followed by Professor J E Courtois until 1967, during which time the statutes and bylaws, upon which the whole working of IFCC is based, were created. During the seven to eight years of the presidency of Professor Martin Rubin, IFCC became accepted as a major international organisation and was recognised as a non-governmental organisation in official relations with the World Health Organisation (WHO). It became a member of the Council of the International Organisations of Medical Sciences and established its own regular Newsletter, developed education programmes in South America; formed Expert Panels became authoritative groups in their own fields, and established constructive relationships with industry.

In 1976, Dr Jörg Frei was elected President after an eight-year period as Secretary.

Dr Rene Dybkaer followed him in 1979 after six years as Vice-President. During these years the collaboration with industry was formalised by creation of Corporate

Membership, IFCC Archives were established, Congress Guidelines were formulated, an IFCC Travelling Lectureship implemented, a major educational programme conducted in Thailand, and the IFCC Distinguished International Services Award established in addition to the earlier Distinguished Clinical Chemist Award. As a new concept, a General Conference of IFCC Officers, Divisions and Committees, together with Associate Members, was launched in Denmark in 1982. Finally, a Task Force prepared new Articles for the Federation which were approved by Council in 1984.

Dr Donald Young became President in 1985, after a three-year term as Vice-President. During his six years as President, Dr Young reorganised the committee structure of the IFCC. The previous Expert Panels were redefined as Committees and an integrated structure was formed to allow better communications and delegation of responsibility and activity. Dr Young initiated a further review and modification of the IFCC Statutes which was completed in 1993. During Dr Young's tenure IFCC initiated the publication of its own journal - Journal of the International Federation of Clinical Chemistry. A broader interpretation of clinical chemistry to include other areas of laboratory medicine was developed. Formal associations were initiated with clinical chemistry organisations in Latin America and the Asian and Pacific region.

Professor G. Siest, who was President from 1991 to 1996, worked with the Board and Members to develop a Strategic Plan which would guide the organisation into the 21st Century. This involved the identification of six key Strategic issues, relating to: Scientific Credibility, Linkage of Clinical Chemistry to Improved Patient Care, Communication, Promotion of IFCC Products and Services, People and Succession, and Finance. New agreements with the European region (FESCC) and the Latin American Region (COLABIOCLI) were signed. The strategic plan was endorsed by the IFCC Council in 1996.

From 1997-99 the President was Professor Matthew McQueen who was previously a member of the Scientific Committee from 1982-87, Treasurer from 1989-90 and Vice President 1991-96. During his Term the Executive Board translated the Strategic Plan into specific actions. These included increasing scientific activity in the areas of standardisation and reference materials and improved scientific co-operation with other international laboratory professional organisations. The Education and Management Division expanded its role in the pre-analytical and post-analytical phases, while the Communication and Publications Division restructured to meet the challenges of electronic publication. One highlight was the very important name change to the International Federation of Clinical Chemistry and Laboratory Medicine, highlighting the clinical relevance and importance of our profession. The Statutes of the Federation were modified to implement "term limits" for members of the Executive Board. Representatives from the Corporate members were formally included in the structure of each Division. This Executive Board successfully concluded discussions with the World Association of Societies of Pathology and Laboratory Medicine producing a joint policy statement on "Principles of Clinical Laboratory Accreditation". This clearly stated that the Laboratory could be directed by Scientists or Physicians, with the appropriate initial qualifications and specialised post-graduate professional education and training in clinical laboratory work.

Prof. Mathias M. Müller served as President for the period 2000 - 2005, having previously served the Federation as Secretary, Vice-President, and Vice-Chair and Chair of the Scientific Division. Under his guidance the Federation continued to stress high quality scientific endeavour as the backbone of the Federation. Since 2000, the Executive

Board emphasised the interdisciplinary character of our discipline and has focused on clinically relevant topics. In this context, the establishment of reference systems for glycated haemoglobin and enzyme activity measurements as well as a global campaign for monitoring diabetes mellitus were initiated. With the growing complexity of IFCC projects, the requirement for an intellectual property policy became evident. This has been developed. A working relationship with the National Committee for Clinical Laboratory Standards/NCCLS (now known as the Clinical and Laboratory Standards Institute/CLSI) was formalised and joint NCCLS/IFCC projects started. Standardisation on high metrological levels has always been a major undertaking and has contributed to the credibility of IFCC. As a consequence of this policy, collaboration with the Bureau International des Poids et Mesures (BIPM), the National Institute of Standards and Technology (NIST), the Institute of Reference Materials and Measurements (IRMM), European, American and Japanese IVD Associations, and the International Laboratory Accreditation Cooperation (ILAC) is being established for the implementation of traceability in Laboratory Medicine. New awards for significant contributions in molecular diagnostics, in education and in-patient care were created. With the opening of the IFCC Office in Milan the IFCC website was restructured becoming the main communication vehicle between the Federation and the membership.

Professor Jocelyn Hicks served as President from 2005 to 2008. She also served the Federation as Chair of the Publications Division and as Treasurer. She continued to encourage the scientific excellence for which IFCC is justifiably proud. She assembled a group of clinicians from the key diabetes bodies to develop a consensus statement regarding the use of the new standard for glycated haemoglobin. As President she worked to enhance the quality of laboratory testing worldwide with the able assistance of the Education and Management Division. Under her direction the Communications and Publications Division took public relations and communications to a new level. They, for example, published a PR brochure in many languages. She considered assistance to the lesser developed country Members to be paramount, as it is the patient who benefits. Under her leadership the Visiting Lecturer Programme was greatly expanded with the substantial grant from Abbott Laboratories. Travel scholarships to attend major IFCC Congresses were introduced with a generous grant from Roche Diagnostics GmbH. These were awarded on a competitive basis to young scientists from developing countries. Siemens Healthcare Solutions assisted us greatly with starting a distance e-learning programme for all members, but with emphasis on topics to assist those in developing countries. A new conference that links the clinician with the clinical laboratory was started with the substantial grant from Ortho Clinical Diagnostics. The first of these was held in Birmingham in the UK in 2008. The topic was on Cardiac Biomarkers. Two new awards were introduced, one in Laboratory Medicine and Patient Care sponsored by Ortho Clinical Diagnostics and one on outstanding contributions to Standardization sponsored by The National Institute on Standards and Technology and the Clinical Laboratory Standards Institute.

Professor Hicks developed a new programme for National and Corporate Representatives to be involved actively in the General Conference in 2008. This Conference was organised with the assistance of The Congress and Conference Committee, the Turkish Association and the IFCC Office. A successful International Congress of Clinical Chemistry and Laboratory Medicine was held in Brazil in 2008 with the able assistance of the Brazilian Association. The number of full Members grew from 72 to 83 during this period. Professor Hicks visited many of our Member countries. The number of Corporate Members also increased despite many mergers. All of these activities were made possible with the assistance of the Executive Board, the Divisions, the Committees, working Groups and the IFCC office.

Dr Graham Beastall from the UK served as President from 2009-2014, during which time the number of Full Members grew to 89 and the number of Corporate Members grew to 52. Dr Beastall increased transparency and accountability of the Executive Board to the Members. He oversaw changes to the composition of the Executive Board; the introduction of electronic voting; and the introduction of differential membership fees. Devolution of responsibility to the Regional Federations was a key programme, which greatly increased the number of individuals who are actively involved in the 'family of IFCC'. The IFCC WorldLab congresses in Berlin (2011) and Istanbul (2014) were hugely successful and the General Conferences held in Corfu (2009) and Kuala Lumpur (2012) played an important role in IFCC understanding the needs and priorities of its Members. IFCC communications and publications improved significantly during this period. A much-improved website was introduced and the quality of IFCC News and the electronic journal of IFCC both advanced. Distance learning programmes were developed and an e-Academy was conceived and developed. The Scientific Division enhanced its international reputation, especially in the area of method standardisation. The Education and Management Division increased its educational support to developing countries through a range of programmes, including the Visiting Lecturer Programme, educational scholarships and a new mentorship scheme. Dr Beastall encouraged greater focus on the clinical importance and clinical effectiveness of laboratory medicine. New cross-Divisional Task Forces were created to collaborate with international clinical organisations. Adding value to high quality laboratory medicine services through the application of 'SCIENCE' was Dr Beastall's flagship programme.

Professor Maurizio Ferrari from Italy, having previously served the Federation as Chairman of Committee on Clinical Molecular Biology Curriculum, member of IFCC Task Force on Pharmacogenetics, member of the Education and Management Division of IFCC, Chairman of the Education and Management Division, was President from 2015-2017 during a period of change and development for the profession worldwide arising from growing recognition of the importance of laboratory medicine to quality healthcare. Professor Ferrari facilitated a formal review and SWOT analysis to ensure that IFCC could position itself to respond to this changing global scene with the result that IFCC adopted a new Vision Statement, focused on advance excellence in laboratory medicine for better healthcare worldwide and a series of strategic aims and a detailed action plan. During his term in the Executive Board saw its first change in structure with the President Elect (Professor Howard Morris) joining the Board one year ahead of becoming President. The election of six Regional Federation representatives took place during this period to join a more dynamic and representative Executive Board from January 2018. The activities of the Scientific Division, Education and Management Division and Communications and Publications Division improved significantly during this period. Further influence from Professor Ferrari saw the creation of the new Emerging Technology Division, which will be operational from 2018, and the consolidation of most of the Task Forces into the Divisional structure. Professor Ferrari made 'meeting IFCC Members' a priority and he was in great demand as an expert lecturer on molecular diagnostics and as a source of advice on the future of the profession. Moreover, he considered paramount to support the lesser developed country. Professor Ferrari presided the EuroMedLab in Paris 2015, a successful IFCC General Conference in Madrid in 2016, and the first IFCC WorldLab meeting in Africa, which was held in Durban in 2017. The number of Full Members increased to 93 and there was an encouraging rise in the number of Affiliate Members to 13 during this period.

1.8.3. IFCC Office

As the scope of the Federation's activities has expanded, so has the requirement for the exchange of information and the documentation of the various activities which were taking place. As with most other professional groups, the initial secretarial functions were provided by the individual officers and scientists within the Federation.

A considerable debt is owed to these individuals and their employing organisations.

However, it was obvious to the Executive Board that for the Federation to continue its development, a Secretariat was required. The Federation was fortunate originally to be supported by Radiometer A/S of Copenhagen, which agreed to provide office space and secretarial support. This facility was generously placed at the disposal of the Executive Board and became known in 1983 as the IFCC Technical Secretariat. During this period, the Federation was fortunate in obtaining the services of Mrs Maj-Britt Petersen, who provided invaluable support, in particular for the Scientific Division. In order to facilitate the appropriate distribution of documents, the Technical Secretariat also kept a master file of names and addresses of all those who play a part in the Federation's affairs. During 1988-1990 the Executive Board devoted considerable effort to determining the role and structure of a central office. In 1990 a new Technical Secretariat was established in Nancy, France with the assistance of Prof Gerard Siest. The opening of this office was a major event for the IFCC as for the first time the IFCC employed its own staff. The Technical Secretariat was transferred into the hands of Mrs Chantal Thirion and remained in Nancy until 2001. In 2001 when additional professional administrative services were needed, the Office was transferred to Milan, Italy where it shares resources with a major Professional Conference Organiser. The IFCC Office currently employs three members of staff, Mrs Paola Bramati, Mrs Silvia Cardinale and Mrs Silvia Colli Lanzi.

1.8.4. External Links

The IFCC has maintained its relations with WHO and transferred its International Medical Laboratory Information System to WHO. In addition, it has expanded its support of regional organisations and regular regional congresses that are held in Europe, in the Arab Region, in the Asian and Pacific Region, in the Latin American Region and in Africa. IFCC has signed Memoranda of Understanding with its Regional Federations.

The IFCC has accepted the ICSU Principles of free circulation of scientists and has assured the attendance of visiting scientist at all meetings. The interests of IFCC continue to expand. It has addressed the policy of patenting key products for analytical methods and continues to work collaboratively with many international organisations to sponsor major educational programmes. The IFCC is also working with a number of other International Organisations such as IRMM, NIST, CLSI and BIPM in developing new standards and in the area of standardisation of methods. The IFCC continues to be very influential in defining and reviewing appropriate terminology in Laboratory Medicine and other fields of chemistry. In addition, the management structure of the Federation has been reorganised continuously to enable it to respond effectively to contemporary issues.

IFCC has signed Memoranda of Understanding agreements with ILAC and WASPaLM to formalise and improve collaboration.

1.8.5. Membership of IFCC Executive Boards

President

EJ. King (UK)	1952 - 1960	G. Siest (FR)	1991 - 1996
ME. Freeman (US)	1960 - 1963	MJ. Mc Queen (CA)	1997 - 1999
JE. Courtois (FR)	1963 - 1967	MM. Müller (AT)	2000 - 2005
M. Rubin (US)	1967 - 1975	JMB. Hicks (US)	2006 - 2008
J. Frei (CH)	1976 - 1978	GH. Beastall (UK)	2009 - 2014
R. Dybkaer (DK)	1979 - 1984	M. Ferrari (IT)	2015 - 2017
DS. Young (US)	1985 - 1990	H. Morris (AU)	2018 - 2020

Vice President

E. Werle (DE)	1966 - 1972	MM. Müller (AT)	1997 - 1999
R. Dybkaer (DK)	1972 - 1978	CA. Burtis (US)	2000 - 2005
RG. Edwards (AU)	1979 - 1981	V. Palicka (CZ)	2006 - 2008
DS. Young (US)	1982 - 1984	CWK. Lam (HK)	2009 - 2011
A. Kallner (SE)	1985 - 1990	H. Morris (AU)	2012 - 2014
MJ. Mc Queen (CA)	1991 - 1996		

President Elect

H. Morris (AU)	2017
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Secretary

IDP. Wootton (UK)	1952 - 1958	R. Vihko (FI)	1988 - 1990
ME. Freeman (US)	1959 - 1960	P. Garcia Webb (AU)	1991 - 1993
B. Josephson (SE)	1960 - 1963	O. Zinder (IL)	1993 - 1996
MC. Sanz (CH)	1963 - 1967	J. Whitfield (AU)	1997 - 1999
J. Frei (CH)	1967 - 1975	R. Bais (AU)	2000 - 2005
PMG. Broughton (UK)	1976 - 1978	PH. Laitinen (FI)	2006 - 2011
A. Kallner (SE)	1979 - 1981	S. Bernardini (IT)	2012 - 2017
JG. Hill (CA)	1982 - 1984	DW. Kinniburgh (CA)	2018 - 2020
MM. Müller (AT)	1985 - 1987		

Assistant Secretary

G. Siest (FR)	1972 - 1975	A. Kallner (SE)	1976 - 1978
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Treasurer

L. Hartmann (FR)	1966 - 1972	NC. Den Boer (NL)	1991 - 1996
PMG. Broughton (UK)	1972 - 1975	P. Mocarelli (IT)	1997 - 2002
RG. Edwards (AU)	1976 - 1978	JMB. Hicks (US)	2003 - 2005
JG. Hill (CA)	1979 - 1981	G. Shannan (SY)	2006 - 2011
A. Kallner (SE)	1982 - 1984	B. Gouget (FR)	2012 - 2014
ML. Castillo de Sanchez (MX)	1985 - 1987	T. Ozben (TR)	2015 - 2020
MJ. Mc Queen (CA)	1988 - 1990		

Members of Executive Board

A. Sobel (US)	1952 - 1954	N. de Cediél (CO)	1991 - 1993
P. Fleury (FR)	1952 - 1954	O. Zinder (IL)	1991 - 1994
B. Josephson (SE)	1952 - 1960	JB. Whitfield (AU)	1994 - 1999
JCM. Verschure (NL)	1954 - 1959	H. Wetzel (DE)	1994 - 1999
WM. Sperry (US)	1955 - 1960	TD. Geary (AU)	1994 - 1999
K. Hinsberg (DE)	1958 - 1963	P. Mocarelli (IT)	1994 - 1999
JE. Courtois (FR)	1958 - 1963	A. Kallner (SE)	1994 - 1999
MC. Sanz (CH)	1958 - 1963	L. Muszbek (HU)	1997 - 1999
NF. Maclagan (UK)	1960 - 1967	RI. Sierra Amor (MX)	1997 - 2002
VN. Orekhovich (SU)	1960 - 1967	W. Hölzel (DE)	2000 - 2002
SH. Jackson (CA)	1960 - 1967	CWK. Lam (HK)	2000 - 2005
M. Rubin (US)	1963 - 1967	V. Palicka (CZ)	2003 - 2005
R. Ruyseen (BE)	1963 - 1967	H. Wetzel (DE)	2003 - 2005
J. de Wael (NL)	1966 - 1967	D. Mazziotta (AR)	2003 - 2008
I. Nagy (HU)	1980 - 1987	N. Madry (DE)	2006 - 2008
N. Montalbetti (IT)	1981 - 1985	M. Thomas (UK)	2006 - 2008
FW. Sunderman Jr (US)	1981 - 1985	JB. Lopez (MY)	2006 - 2011
H. Wishinsky (US)	1985 - 1987	B. Gouget (FR)	2009 - 2011
SS. Brown (UK)	1985 - 1990	T. Brinkmann (DE)	2009 - 2014
J. Jaervisalo (FI)	1985 - 1990	U. Tuma (BR)	2009 - 2014
D. Scheuch (DE)	1985 - 1990	L. Kricka (US)	2012 - 2014
I-K. Tan (SG)	1985 - 1990	V. Steenkamp (SA)	2012 - 2017
F. Dati (DE)	1988 - 1993	R. Hinzmann (DE)	2015 - 2017
N. Montalbetti (IT)	1990 - 1992	D. Mazziotta (AR)	2015 - 2017
HP. Lehmann (US)	1990 - 1994	RI. Sierra-Amor (MX)	2015 - 2017

Corporate Representatives

H. Wetzel (DE)	1994 - 1999	N. Madry (DE)	2006 - 2008
W. Hölzel (DE)	2000 - 2002	T. Brinkmann (DE)	2009 - 2014
H. Wetzel (DE)	2003 - 2005	R. Hinzmann (DE)	2015 - 2020

IFCC Regional Federation Representatives at Executive Board 2018-2020

AB Okesina (NG)	African Federation of Clinical Chemistry (AFCC)
A. Hedhili (TU)	Arab Federation of Clinical Biology (AFCB)
S. Sethi (SG)	Asia-Pacific Federation for Clinical Biochemistry and Laboratory Medicine (APFCB)
S. Sandberg (NW)	European Federation of Clinical Chemistry and Laboratory Medicine (EFLM)
RI Sierra-Amor (MX)	Latin-American Confederation of Clinical Biochemistry (COLABIOCLI)
A. Gronowski (US)	North American Federation of Clinical Chemistry and Laboratory Medicine (NAFCC)

