

From: Prof L.Lai, Chair of IFCC Education & Management Division
Prof. Dr. Evi Lianidou, Chair of EMD Committee on Clinical Molecular
Biology Curriculum (C-CMBC)

Date: May 20, 2015

Ref: C-CMBC, 6 Days Beginners' Course in Molecular Diagnostics

**Education and Management
Division (EMD)**

Chair

Prof. Leslie LAI
Department of Medicine
Gleneagles Kuala Lumpur
282 & 286 Jalan Ampang
50450 Kuala Lumpur – Malaysia
Tel: +603 42510433
Fax: +603 42520433
e-mail: lesliecharleslai@gmail.com

Secretary and VLP Chair

Dr. Elizabeth A FRANK
Learning 2 Lead Consultants
101 Begonia
Sankalap Central Park
Yadavagiri Mysore 570020
INDIA
Tel: +91 821 2432321
e-mail: anet21frank@gmail.com

Member

Prof. Paolo FORTINA
Kimmel Cancer Center
Dept of Cancer Biology
Thomas Jefferson University
1009 Bluemle Life Sciences Building
233 South 10th Street
Philadelphia, PA 19107
USA
Tel: +1 215 955-068
Fax: +1 215 503-9142
e-mail: paolo.fortina@jefferson.edu

Member

Dr. Ana Leticia MASELLI
6a. Ave. 8-92 zona 9
Guatemala City
GUATEMALA
e-mail:
analeticiamaselli@yahoo.com

Corporate Representative

Dr. Christoph EBERT
Roche Diagnostics GmbH
Nonnenwald 2
D-82377 Penzberg
GERMANY
Tel: +49 8856 603741
Fax: +49 8856 603752
e-mail: christoph.ebert@roche.com

IFCC OFFICE

Via Carlo Farini 81
20159 Milano, Italy
Tel: +39 02 66809912
Fax: +39 02 60781846
e-mail: ifcc@ifcc.org
http://www.ifcc.org

To: National Representatives of IFCC Member Societies

Dear Colleagues,

The IFCC announces the availability of a 6-day Molecular Diagnostics workshop to be presented in your own country by members of the Committee for Clinical Molecular Biology Curriculum (C-CMBC).

The dissemination of molecular techniques in laboratory medicine has been a goal of the IFCC for some years. Within the IFCC, the Education and Management Division (EMD) (<http://www.ifcc.org/ifcc-education-division/>) runs projects to provide IFCC member societies and their national healthcare communities with educational issues relevant to Clinical Chemistry and Laboratory Medicine. Within EMD, the Committee on Clinical Molecular Biology Curriculum (C-CMBC) has developed curricula and comprehensive hands-on laboratory training courses in basic diagnostic Molecular Biology techniques.

The dissemination of nucleic acids testing in the field of laboratory medicine, aims to improve skills and to tie IFCC members into molecular EQA systems in order to warrant a high level of analytical quality and diagnostic proficiency. Accordingly, the main course objectives are: i) to implement basic principles of molecular techniques or improve existing skills in a sustainable way rather than to exercise with pre-fabricated reagents and consumables, ii) to introduce laboratories to the principles of internal as well as external quality assessments (EQA), iii) to initiate networking amongst the participants of the C-CMBC courses assuming that they will benefit from each other's experiences using molecular genetic testing and iv) to improve the cooperation between the national societies and the IFCC in molecular diagnostic issues.

C-CMBC course

Our new C-CMBC course structure was developed around a "lab-in-a-suitcase" approach that was finally implemented in 2009. This concept aimed at: i) organizing all courses through the national laboratory societies of the IFCC member countries, ii) leaving the selection of participants to the national societies to maximize dissemination, iii) establishing a beachhead in the hosting country through a native-tongue trainee prior to the course, iv) bringing the molecular techniques to the participants' countries and perform them in their every-day working environments, v) providing extensive documentation of all teaching materials for further dissemination, vi) allowing free-of-charge access to an international external quality assessment (EQA) program on molecular diagnostics (DNA-isolation, genotyping and DNA sequencing) for all registered participants and vii) establishing a junior member structure using the best students as continued liaisons between the IFCC and the hosting member countries.

The workshop programme offers comprehensive training that aims to enable clinical laboratories to design, set up, perform and validate genotyping assays for their own Molecular Diagnostics portfolio. Participants are also introduced to external quality assessment concepts as well as "Ethical, Legal and Social Issues" (ELSI) of molecular genetic testing. Highly affordable and cost-effective basic, but fundamental methods will be introduced and the respective protocols practiced at the lab-bench under realistic home conditions. In addition, the training includes seminars and state-of-the art lectures on technical and methodological issues as well as their diagnostic applications and strategies in important molecular diagnostic fields. The program goals reflect the IFCC experiences of past years and the feedback given by participants of previous courses. The ultimate goal of the program is to develop sustainable training in your country and to "teach-the-teachers" for further dissemination. By courtesy of the German Society for Clinical Chemistry and Laboratory Medicine (DGKL), the graduates of the course are offered a 2-year free access to DGKL's wide external quality assessment programme for Molecular Diagnostics to assist the implementation of their acquired skills.

Since 2009, the C-CMBC Course was organized in five different countries: in Syria (2009), Uruguay (2010), Guatemala (2011), Malaysia (2012) South Africa (2013) and Philippines (2014). Taken together, these courses were attended by 81 participants from 9 countries. To warrant a high teacher-to-student ratio, registrations were limited to a maximum of 16-20 students. Most participants are healthcare professionals, PhD and MSc holders, postgraduate students and lab technicians. The selection of course participants was mainly based on their potential to serve as future disseminators of the course contents (teach the teachers).

During these courses, many participants have gained their first hands-on experience on practical work in Molecular Diagnostics starting with preparation of buffers and reagents, inexpensive and robust DNA isolation from whole blood, performance of a PCR reaction, ARMS-PCR, multiplex PCR, preparation of agarose gels, electrophoresis, dot blots and genotyping. We have noted that all participants needed training on genotyping issues, data interpretation and data navigation. Accordingly, much emphasis was put on *in-silico* work using public domain Internet sources for primer design, NCBI gene database work e.g. OMIM, assay design and prediction of PCR conditions etc. These demonstrations and workshops were among the most appreciated ones of the entire program and have been given increasing room in the program as demanded.

The course ends with a written multiple choice exam and distribution of a C-CMBC DVD containing the protocols, literature, tutorial videos and all lectures to the participants. IFCC certificates of attendance are issued to each participant. Evaluation of the exam and notes taken by the C-CMBC members leads to the identification of the best student by the end of the course. He/She is then invited to join the committee on next year's excursion as a guest of C-CMBC. In addition, these students are **official junior C-CMBC members** for a running period of three years by appointment of the IFCC. In their term, they keep contact with their fellow junior members, attend IFCC general conferences as invited C-CMBC members, establish/join young scientist networks and try to foster molecular diagnostics in their countries supported by their national societies. The expenses are generously being covered by the IFCC and supplemented by their societies in form of bursaries or additional support.

The programme for the course is described in detail in the IFCC webpage: <http://www.ifcc.org/ifcc-education-division/emd-committees/c-cmbc/> Moreover, our ten year experience will be soon published in Clinica Chimica Acta (Advancing the education in molecular diagnostics: The IFCC-Initiative "Clinical Molecular Biology Curriculum" (C-CMBC); A ten year experience. Lianidou et al, Clin. Chim. Acta, accepted).

Looking back at our ten-year's experience, this program represents an extraordinary support of young and enthusiastic laboratory scientists and will help young professionals to get started in analytical areas that can be foreseen to be of utmost importance to laboratory medicine. It should also provide between IFCC members in the area of molecular diagnostics and could be a role model for other innovative technologies to be spread in the professional community. This is a unique opportunity for young scientists in your country to learn the basic techniques of clinical molecular biology and diagnostic strategies from international experts and to establish or expand these new diagnostic services in your laboratories.

Prof. Leslie Lai

Chair of IFCC Education &
Management Division

Prof. Dr. Evi Lianidou

Chair of EMD Committee on Clinical
Molecular Biology Curriculum (C-CMBC)