EUROPEAN CYTOGENETICISTS ASSOCIATION (E.C.A.)
European Advanced Postgraduate Course in Classical and Molecular Cytogenetics
Director: Professor Jean-Michel Dupont, Paris - France

Objectives
This course was started by Professor Jean Paul Bureau 15 years ago and has been held in Nîmes under his directorship ever since. It is designed to provide advanced training in constitutional, haematological, and oncological cytogenetics to medical graduates, pharmacists, pathologists, biologists, health professionals and researchers, with an academic qualification. The students will be trained to identify genetic abnormalities for diagnosis and prognosis, and for fundamental and applied research using both classical and molecular cytogenetic techniques. The course is co-organized by E.C.A. and two French Universities, either as a stand-alone course with only the theoretical part or as a University Diploma including both theoretical and practical training. In previous years the course was given 42 European CME credit points (ECMEC, European Accreditation Council for Continuing Medical Education). An application for CME points will also be made for 2014.

Topics see the other side.

Practical information
**Theoretical training:** A ten-day course held in February/March of each year.
Venue: Faculty of Medicine, Nîmes, France. Accommodation: a hotel close to the Medical Faculty.
Official language: English.
**Practical training (only for students registered to the University diploma):** A training of maximum 2 months in a laboratory of your choice. A list of laboratories is provided during the theoretical course.
**Assessment (only for the University diploma):** There is an examination in June and another one in September (rescue session). It is necessary to pass this examination in order to receive the diploma.
Examination format: a written test (three questions) and an oral examination including a presentation (10-15 min) related to the practical training. At the end of each session the results of the examination are assembled by the administration, signed by the examiners, and sent to the Dean of the Faculty where the student is registered.

Registration
Registration opens in September and closes on January 30th.
To register please send a letter of application together with your CV by e-mail to one of the organizers mentioned below. If you are accepted you will receive a registration form.

**Université Paris-Descartes**
Prof. Jean-Michel DUPONT
Laboratoire de Cytogénétique, Groupe Hospitalier Cochin
Saint Vincent de Paul
123 Bd Port Royal, 75014 Paris, FRANCE
e-mail: jean-michel.dupont@cch.aphp.fr

**Université de Montpellier / Nîmes**
Prof. Thierry LAVABRE-BERTRAND
Laboratoire de Biologie Cellulaire et Cytogénétique Moléculaire
Faculté de Médecine Montpellier-Nîmes,
Avenue Kennedy, 30900 Nîmes, FRANCE
e-mail: tlavabre@univ-montp1.fr

Registration fees
Payment can be made either by bank transfer, or a cheque drawn on a French bank.
**E.C.A. registration includes hotel accommodation in Nîmes** (on the basis of a shared double room, an extra fee will be charged for a single room).

**Theoretical course only**

**Theoretical course and practical training**
E.C.A. registration: €700 for E.C.A. members and €800 for non-E.C.A. members. In addition, University registration: varies from €850 to €1400 depending on individual status (experience, citizenship of a European Union country).
2014 Course

This approximately 70 hour theoretical part of the course attempts to cover the field of cytogenetics in the broadest sense. The topics can be divided into the following categories:

**Technical aspects:**
Cell culture techniques; Chromosome staining methods (Q-, G-, C-, R-banding and high resolution banding); Methods and principles of Fluorescence In Situ Hybridization (FISH) and M-FISH; New methods in cytogenetics (QPCR, MLPA, QMPSF). Line Array CGH; Production and use of molecular probes; Laboratory quality assessment.

**Clinical cytogenetics:**
Basics: Frequency of chromosome disorders; Cell cycle, mitosis and meiosis, gametogenesis; Heterochromatic and euchromatic variants; ISCN 2013; Numerical chromosome abnormalities; Origin of aneuploidy; Mosaicism; Chimaeras; Origin and consequences of structural abnormalities: translocations, inversions, insertions, deletions, rings, markers; Risk assessment for balanced abnormalities; X inactivation, numerical and structural abnormalities of the X and the Y; Mechanism of formation of chromosome abnormalities.

Clinical: Phenotype of common autosomal and gonosomal aneuploidies; Chromosome abnormalities in recurrent abortions; Microdeletion syndromes; Uniparental disomy and its consequences; Genomic imprinting; Genetic counselling and ethical issues in cytogenetics.

Prenatal diagnosis: Indications, methods and interpretation; Risk assessment for chromosomal abnormalities; Non-invasive methods using foetal nucleic acids and foetal cells in maternal blood; Pre-implantation diagnosis.

Cancer Cytogenetics: Molecular approach to cancer cytogenetics; Predisposition to cancer, Chromosome instability syndromes; Chromosome mutagenesis; Solid tumors; Clinical application in onco-haematology.

**Other:**
Genome architecture; Structure of chromatin; Structure of metaphase chromosomes, Mechanisms of chromosome aberrations; Evolution and plasticity of the human genome; Animal cytogenetics; Plant cytogenetics.

The students will have an opportunity to evaluate the course.

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The European Cytogeneticists Association offers two fellowships for the European Advanced Postgraduate Course in Classical and Molecular Cytogenetics to candidates of excellence. The Education Committee of the E.C.A. will select the suitable candidates. The fellowships include the E.C.A. registration fees of the course (theoretical or theoretical and practical). This includes accommodation during the theoretical course in Nîmes but not during the practical training in one of the participating laboratories. The fellowships do not include any travel expenses or the university registration fees.