

## *Advanced Molecular Cytogenetic Methodologies*

This course consists of 3 modules/20 hours of study. Each module includes questions to be submitted to the instructor for review. A strong background in cytogenetics and/or clinical genetics is recommended.

### **COURSE FEES:**

#### **BCSLS Members**

**\$195.00**

#### **Non-members**

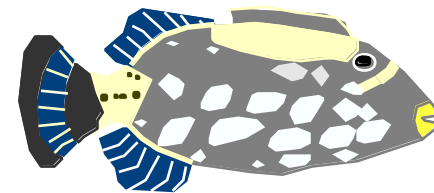
**\$260.00**

## *Advanced Molecular Cytogenetic Methodologies: A Guide to the Principles and Practice*

**YEAR 2002**

### **TOPICS INCLUDE:**

Comparative Genomic Hybridization  
24-colour Karyotyping (MFISH, SKY)  
High Resolution Multi-colour Banding  
(Mband)  
DNA Microarray Technology



*The BCSLS is pleased to present this sequel to our popular  
correspondence course FISH: A Practical Approach.*

# ***Advanced Molecular Cytogenetics Methodologies: A Guide to the Principles and Practice***

## **Course Instructor**

Brenda Lomax, BSc, RT (Cg)

## **Course Objectives**

This correspondence course is offered by the BCSLS to provide you with:

A colourful, well-illustrated course describing the advanced molecular cytogenetic methods that have been developed in the past decade. Students are provided the appropriate theory and practical knowledge to introduce these technologies into clinical cytogenetic practice.

### **Module One: Comparative Genomic Hybridization**

Comparative genomic hybridization (CGH) is a FISH-based technique that can detect chromosomal imbalances. Module One outlines the principles of each step in the CGH procedure and provides detailed protocols, including: DNA extraction and quantification, DNA labelling by nick translation, probe preparation, hybridization, CGH analysis and interpretation, ISCN nomenclature, troubleshooting. Applications of CGH are described using examples of numerous real clinical cases.

### **Module Two: 24-colour Karyotyping**

24-colour karyotyping labels each of the human chromosomes with a uniquely distinctive colour. This FISH-based approach to karyotyping readily identifies both simple and complex

chromosomal rearrangements. While this module describes both SKY (spectral karyotyping) and MFISH (multi-colour FISH) approaches, the major focus is on the use of commercially available MFISH assays (*Vysis, Metasystems*). Topics include: principles, analysis and interpretation, limitations, clinical applications, troubleshooting. The use of cross-species colour banding and high resolution multi-colour banding (Mband) is also described.

### **Module Three: DNA Microarray**

This third module provides an overview of the emerging DNA microarray technology with an emphasis on its significance to the clinical cytogenetic laboratory.

## **Course Authors**

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This course is being submitted to the CSMLS for review to establish eligibility for credits under the Continuing Professional Studies (CPS) program and competency assurance credits under the CSMLS Professional Enhancement Program. This course provides theoretical information only and is not intended to replace practical training in these areas.