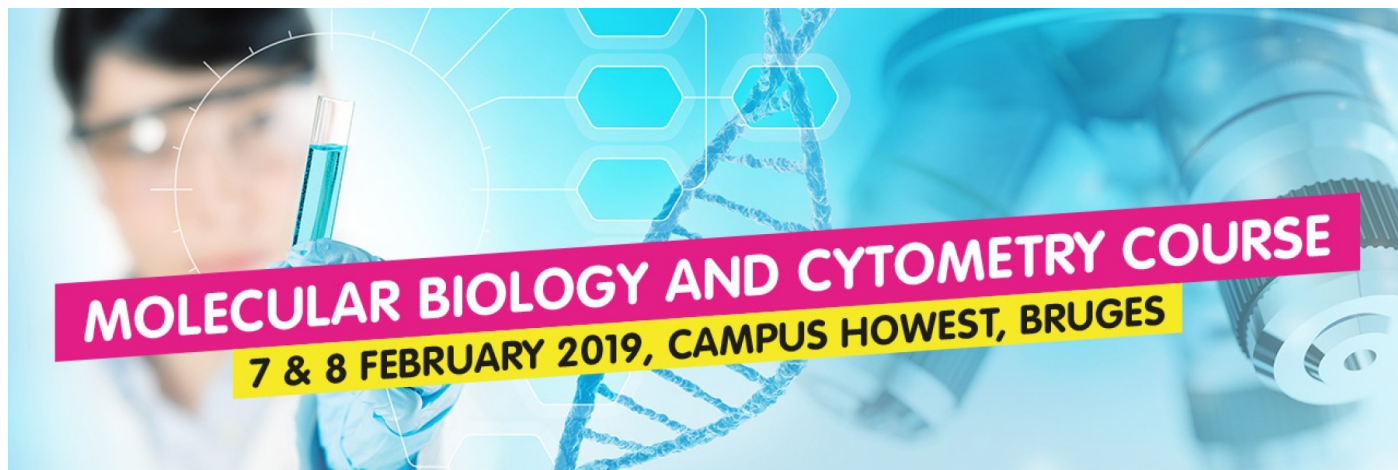


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Molecular biology & cytometry course

Howest University College, MolecularDiagnostics.be VZW and the Belgian Society for Advanced Cytometry kindly invite you to the fifth edition of the Molecular Biology and Cytometry Course.

The course is intended for all who work with molecular diagnostics, (flow)cytometry or microscopy techniques in a clinical laboratory. The training will review the actual techniques and illustrate their use in daily practice. We will focus both on the technical aspects and the clinical and scientific basis they relate to. We will mainly use the English language. Workshops (small groups of max. 25 persons) will be highly interactive, either in English or Dutch dependent on the participants.

DOWNLOAD PRESENTATIONS

Program

Thursday February 7th 2019

08h30-09h00	Coffee and registration	
09h00-10h30	Plenary sessions	
	09h00-09h10	Welcome
	09h10-09h50	"From PCR to NGS" (Friedel Nollet, AZ Sint-Jan Bruges)
	09h50-10h30	"From FCM to Cytof" (Pier Andrée Pentilla, Center for Brain & Disease Research, KULeuven)
10h30-11h00	Coffee break	
11h00-12h30	Parallel sessions Molecular Biology / Flow cytometry	
	Parallel sessions Molecular Biology	
	11h00-11h30	"Pro's and Con's of droplet digital PCR" (Karen Zwaenepoel, University Hospital Antwerp)
	11h30-12h00	"Fully automated sample to result: a journey inside the Idylla™ cartridge" (Bram Decraene, Biocartis)
	12h00-12h30	"Bio-informatics and computational biology: applications in translational research" (Steven Van Laere, University of Antwerp)
	Parallel session Flow cytometry	
	11h-11h45	"FlowSOM: an alternative view on your high-dimensional cytometry data" (Sofie Van Gassen, VIB-UGent Center for Inflammation Research)
	11h45-12h30	"Single cell technology toolbox" (Jurjen Tel, Faculty of Biomedical Technology, Immunoengineering, Technical University Eindhoven)
12h30-13h30	Lunch Break	
13h45-15h00	Workshop session 1 (topics see below)	
15h00-15h30	Coffee break	
15h30-16h45	Workshop session 2 (topics see below)	

16h45-17h15	Plenary session: "AI in Medical Imaging & life sciences, a window of opportunities for breakthroughs" (Koen Van de Perre, IBM)
18h00-23h00	Network event: reception at the City Hall kindly provided to all participants by the city council and dinner in brewery "De Halve Maan" (supported by MolecularDiagnostics.be VZW and the BSAC).

Friday February 8th 2019

08h30-09h00	Coffee and registration						
09h00-09h30	"Immune checkpoint inhibitors: where do we stand?" (Evelien Smits, University of Antwerp)						
09h30-10h45	Workshop session 3 (topics see below)						
10h45-11h15	Coffee break						
11h15-12h30	Workshop session 4 (topics see below)						
12h30-13h30	Lunch Break						
13h30-14h15	University colleges presenting research projects						
	<table> <tr> <td>13h30-13h45</td><td>Development of a qPCR platform for phage enumeration as an alternative to the conventional method of double agar overlay (Els Van Mechelen, Hogent)</td></tr> <tr> <td>13h45-14h00</td><td>Flow cytometry for fast antibiotic sensitivity testing (Maarten Hendrickx, UCLL)</td></tr> <tr> <td>14h00-14h15</td><td>Research and services of the Bioinformatics knowledge Center (BikC) @Howest (Paco Hulpiau, Howest)</td></tr> </table>	13h30-13h45	Development of a qPCR platform for phage enumeration as an alternative to the conventional method of double agar overlay (Els Van Mechelen, Hogent)	13h45-14h00	Flow cytometry for fast antibiotic sensitivity testing (Maarten Hendrickx, UCLL)	14h00-14h15	Research and services of the Bioinformatics knowledge Center (BikC) @Howest (Paco Hulpiau, Howest)
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14h15-14h45	Plenary session: "When do we make "unconscious" errors when we use "conventional" Flow Cytometry and how can the Imagestream help us in this" (Erik Mul, Sanquin)						
14h45-16h15	Parallel sessions Molecular Biology / Flow cytometry						
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16h15-16h45	Farewell reception and closing words						

Workshops in molecular biology

Thursday February 7th - Session 1

Title workshop	Short description
Liquid biopsy (Basic and Advanced)	Liquid biopsies are a hot topic in cancer research and diagnostics. During this workshop the different forms of liquid biopsies will be presented and discussed. Furthermore the different applications of liquid biopsies will be highlighted. Applications in different research fields will be presented. This workshop is intended for people new in the field as well as for more advanced researchers and technicians. (Nadine Van Roy, Ugent)
Massive Parallel Sequencing (Basic)	Within this workshop we will give an overview of the new Massive Parallel sequencing technologies, and their advantages and disadvantages for different applications. We will also briefly touch upon the data analysis of such sequencing data sets. (Ben Caljon, VUB)
FLT3 mutation analysis as companion diagnostics	Recent advances in the treatment of acute myeloid leukemia (AML) have resulted in the introduction of FLT3-inhibitors as first-line treatment in clinical practice. The identification of the patients who can benefit from this treatment requires a swift and complete analysis of the FLT3 mutation status. In this workshop, we will discuss the different types of FLT3 mutations, how to analyze these, how techniques as next-generation sequencing and capillary electrophoresis compare to each other, and what the pitfalls are in the analyses. (Karl Vandepoele, UZ Gent)

Thursday February 7th - Session 2

Title workshop	Short description
Interpretation of clonality analyses (Ig & TCR) and IgH hypermutation	A short basic overview will be followed by examples of daily practice following the guidelines of interpretation. This workshop is made for people with some experience in clonality and/or hypermutation analysis. Exceptions and tricky cases will be presented.

analysis (Advanced)	(Elke Boone & Sabine Franke, AZ Delta Roeselare & CHU Liège)
Mutation screening in Clinical Genetics (Advanced)	On the road to next generation molecular diagnostics, mutation detection and interpretation of generated data changed dramatically. The workshop will cover some challenges and pitfalls hidden in these data. (Kim Deleeneer, UGent)
qPCR assay and primer design (Basic)	In order to generate biologically relevant qPCR data, qPCR assay and primer design is crucial. This workshop will focus on the basic concepts important for amplicon selection and primer design and will go through the individual steps of the in silico primer design workflow. (Rita Verhelst, Hogent)
Taking PCR to the next level: Bio-Rad's droplet digital PCR explained	Digital PCR is a breakthrough technology that provides ultrasensitive and absolute nucleic acid quantification. It is particularly useful for low-abundance targets, targets in complex backgrounds, allelic variants (SNPs), and for monitoring subtle changes in target levels that cannot be detected with real-time quantitative PCR. Based on water-oil emulsion droplet technology, droplet digital PCR fractionates a DNA sample in 20,000 droplets. PCR amplification of the template subsequently occurs in each individual droplet, and counting the positive droplets gives precise and absolute target quantification. In this workshop we will explain the principle of droplet digital PCR and discuss the advantages the technology offers. The applications range from cancer research over microbiology to infectious diseases, food safety and gene editing. Some of these applications will be illustrated. We will give a hands-on demonstration of the workflow during the workshop. (Koen De gelas, Biorad)

Friday February 8th - Session 3

Title workshop	Short description
Automation in a molecular diagnostic laboratory (Basic and Advanced)	The design and implementation of an automated variable real time PCR plate set-up with a Janus liquid handling station and the use of the Fastfinder interpretation software for real-time PCR results will be illustrated. Challenges and advantages of using these systems in daily routine will be highlighted. (Karen Dierickx, OLVZ Aalst)
Bio-informatics for dummies (Basic)	An informatics system has become an essential part of every laboratory, imagine your workplace without the computers... Both in research laboratories and hospitals the use of bioinformatics for data storage, analysis and automation purposes has been clearly increasing. This workshop aims to introduce some basic bioinformatics concepts for laboratory technicians. (Jasper Decuyper, Howest)
Classification of somatic variants (basic and advanced)	Each detected somatic variant in solid or hematologic tumor samples needs to be given a biological and clinical class that best suits its effect on the tumor and the patient, respectively. The guidelines for both classifications that were recently installed for Belgian diagnostic labs will be discussed. (Guy Froyen, Jessaziekenhuis, Hasselt)

Friday February 8th - Session 4

Title workshop	Short description
Massive Parallel Sequencing (Basic)	Within this workshop we will give an overview of the new Massive Parallel sequencing technologies, and their advantages and disadvantages for different applications. We will also briefly touch upon the data analysis of such sequencing data sets. (Guy Froyen, Jessaziekenhuis, Hasselt)
Statistical methods in validation reports and QC (Basic)	This workshop will provide a short theoretical introduction about statistical methods necessary to perform validation and verification of a molecular test. Practical examples of validation reports will include validation of HCV, BCR-ABL by qPCR and others. Finally, we will explore recent developments in the field of quality control for qPCR. During this workshop, a specific emphasis will be put on non-conformities encountered in BELAC audits regarding chapters 5.5 and 5.6 of the ISO 15189:2012 norm (Jérémie Gras, Clinique St Luc, Bouge)
NGS in oncology and hemato-oncology using targeted DNA gene panels (Advanced)	Many different in-house and off-the-shelf gene panels for NGS are used in the Belgian Molecular Diagnostic labs (onco and onco-hematology). Short presentations will be given by participants about their workflows of NGS library prep and datamining, with a discussion of its advantages and disadvantages. (Multiple presenters)

Workshops in flow cytometry

Thursday February 7th - Session 1

Title workshop	Short description
Flow cytometric MRD applications in hemato-oncology (advanced)	MRD in acute leukemia, chronic lymphocytic leukemia and myeloma is more and more recognized to be extremely important as independent prognostic factor in the follow-up of these diseases. Therefore the analysis should be sensitive enough and to reach that sensitivity in flow cytometry, a well standardized analysis and a number of technical issues must be taken into account. (Barbara Denys, UZ Gent)
Flow cytometry of tissue biopsies (Advanced)	Approach used to identify all cells (normal and abnormal) in tissue biopsy using multicolor flow cytometry. (Bernard Husson, Hopital de Jolimont, Haine-Saint-Paul)

Thursday February 7th - Session 2

Title workshop	Short description
Blood and bone marrow differentiation by flowcytometry (Basic)	Description will soon be available (Olivier Pradier, ULB)
Harmonisation of flow cytometric protocols (Advanced)	The objective of this is workshop session is to understand the differences between cytometers in order to setup the right processes and use the right tools, during acquisition, for a better harmonization of flow cytometric data. (Antoine Pacheco, Beckman-Coulter)

Friday February 8th - Session 3

Title workshop	Short description
Image processing primer (Basic)	Hands-on (PC) involving the basic concepts of biological image annotation, processing and analysis. (Marlies Verschuuren & Alfonso Garcia (UA))
Acute leukaemias: diagnostic workup and case presentations (Advanced)	Description of routine haematological methods in the diagnostic workup of acute leukaemias according to the WHO 2016 guidelines. Illustrated cases will be given. (Brigitte Cantinieaux, Institut Bordet, Brussels)
State of the Art Standardization! Instrument Setup, calibration and Assay Portability on a flow cytometer (Basic)	Description will soon be available (Jean-pierre Sepers, BD Life sciences)

Friday February 8th - Session 4

Title workshop	Short description
Quality assurance in flow cytometry : discussion of guidelines (Basic)	Presentation of ISO accreditation requirements and their relevance to clinical flow cytometry; discussion of guidelines published by expert cytometry panels on compliance to ISO standards. (André Gothot, CHU Liège)
Multicolour panel design: tips & tricks (Advanced)	With all the recent technological advances in the field of flow cytometry, both on the instrumentation and reagent side, researchers now have the possibility to increase the complexity of their flow cytometry experiments. During the experimental design of these multicolour panels, one needs to take multiple things into consideration. The goal of good panel design is to make an optimal combination of antibody and fluorophore conjugations, while keeping constraints, such as fluorochrome spillover and data spread, in mind. During this workshop the practical considerations of panel design will be highlighted and we will inform the attendees of tools that can assist in panel design and provide them with tips & trick in order to achieve good quality flow data/ (Gert Vanisterdael, UGent)

Practical information**Registration fee**

Registration will be open from the 18th of December untill the 14th of January. Registration for each workshop will be limited to a specific number of participants.

- **Registration fee for one day:**
 - € 120.00 (working in a non -profit organization)
 - € 200.00 (other)
- **Registration fee for both days:**
 - € 200.00 (working in a non-profit organization)
 - € 300.00 (other)
- **Participation networkevent:** 40€ (reception at the City Hall and dinner in brewery De Halve Maan, supported by Molecular diagnostics.be VZW and the Belgian Society for Advanced Cytometry).

Location

University College Howest, campus Bruges, is the host institution for the fifth edition of the MB&C course.

Howest campus Rijselstraat
Rijselstraat 5 - 8200 Brugge
Telefoon: 050 38 12 77
Fax: 050 38 11 71

Accessibility

Coming by public transport

The campus is easily accessible by train. It is only a 5 minute walk from the back exit of the Bruges railway station (choose direction Sint-Michiels).

Coming by car

The parking on the campus will be reserved for speakers, workshop teachers and sponsors. Participants to the course coming by car are advised to park their car in the parking at the back or front side of the railway station (3,50€/day). It is only a 5 to 10 minute walk from the back or front parking to the campus. The surrounding area of the campus is a "Blue Zone" where you may park for only up to four hours without charge.

Partners

The course is organized by:



Sponsors

The course is sponsored by:



More information

For more information you can contact [Griet Vanbillemont](#).

Dit formulier is momenteel afgesloten voor nieuwe inzendingen.

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