INTRODUCTION

This advanced online course focuses on how to assess biological results given activity level propositions in order to promote a safe administration of justice. It is designed to train practitioners in the most up-to-date approaches to the evaluation of biological results. The content is based on the use of likelihood ratios, an approach that is supported by the International Society of Forensic Genetics, and a variety of reference documents, guidance notes and standards, across jurisdictions.

The course relies on the use of Bayesian networks (BN) for the probabilistic evaluation of biological results, when the issue regards not so much the source of the DNA, but the activities from which it resulted.

OBJECTIVES

- To be able to address DNA casework given activity level propositions
- To be able to explain evaluative reasoning in court and feel at ease with expert debate and the published literature
- To have specialized and up-to-date knowledge in the field of evaluation of forensic biological results when accounting for transfer, persistence, recovery and prevalence of biological trace material
- To feel at ease in writing communications on how to convey the value of biological results when propositions refer to activities
MODULES

1. REVISITING UNCERTAINTY IN FORENSIC SCIENCE AND PROBABILISTIC INFERENCE
   - Laws of probability
   - Hierarchy of propositions and principles of forensic interpretation

2. EVALUATION USING BAYESIAN NETWORKS (BNs): GENERAL ASPECTS AND SOFTWARE FUNCTIONALITIES
   - Capturing probabilistic reasoning through BNs
   - Methodology for constructing BNs

3. CASE PRE-ASSESSMENT
   - Management of cases and needs
   - Use of BNs for case pre-assessment

4. ASSESSING THE ABSENCE OF DNA AND THE ABSENCE OF MATCHING DNA
   - Likelihood ratio formula, source of data, building BNs

5. EVALUATION OF TRACES RECOVERED ON A VICTIM OR A CRIME SCENE
   - Further technical issues
   - Case examples: assessing and reporting results

6. EVALUATION OF TRACES RECOVERED ON A SUSPECT
   - Case studies: from pre-assessment to reporting

7. COMBINING RESULTS IN ALLEGED SEXUAL OFFENCES
   - Assessing results from presumptive tests, differential extraction and DNA analysis

8. CASE STUDIES

EXAMINATION

The course delivers 5 ECTS credits if the candidate passes the written online examination that takes place at the end of the course. See specific ECTS credits conditions on the course website.

ACADEMIC DIRECTORS

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The instructors have theoretical and practical experience with evaluation and interpretation from laboratory to courtroom. They have published over the years numerous scholarly papers and textbooks on the subjects of evaluation and statistics in forensic science.

CONTACT

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