

II Module

The Weight of Evidence: Bioethics & DNA , Biostatistics & DNA profiles

Is a 2 week academic summer programme plus the first 3 days of the following week to offer discussion on the mainly advanced topics on the Social, Ethical and Legal aspects of current and emerging uses of forensic genetics, as soon as, statistical analysis for mixture interpretation and haploid markers.

A practical workshop entitled “*Application of open-source software LRMix Studio to analyse complex DNA profiles*” will be also provide the opportunity for participants to analyse their own challenging case examples. Participants must bring a portable PC for the computer exercises. Some information will be sent prior to the workshop itself. The aim is to provide participants with sufficient information and training so they are able to run the software in their own laboratory. This practical workshop will be held by Prof. **Peter Gill** (Principal research Scientist of the Forensic Science Service, since 27 years, Birmingham (UK) and professor of Forensic genetics at Oslo University) together with Dr. **Hinda Handed** from the Netherlands Forensic Institute (NFI), Ministry of Justice.

Dr. Haned’s research focuses on developing statistical models to facilitate the interpretation of biological data analyzed by forensic laboratories, with a particular focus on forensic DNA samples. She developed the Forensim R package and the LRMix tool dedicated to the interpretation of complex DNA mixtures.

II Module

II – Module- The Weight of Evidence : Bioethics & DNA , Biostatistics & DNA profiles							
22 June - 27 June 2015							
Week III							
Week 22 – 27 June	Mon. 22	Tues.23	Wed.24	Thu.25	Fri.26	Sat.27	San. 28
9.00 – 10.30	Welcome & participant registration	Forensic Pharmacology-2 ⁴	Bioethics & DNA Databases ⁸	Social, Ethical and Legal aspects of current and emerging uses of forensic genetics ¹²	DNA & ethical and legal guidelines ¹⁶	Open seminars ¹⁹	Free Day
10.45 – 13.15	Course presentations ¹	Quality, Standard & Guidelines on Forensic Toxicology ⁵	Sexual abuse & Forensic Investigations ⁹	The importance of DNA in sexual assaults: preserving and collecting forensic evidence ¹³	Expert Reports and Testimony ¹⁷		
13.30 -14.30	Lunch provided by CERISDI						
14.30 -15.30	Overview of Forensic Toxicology ²	Ethical and legal issues in forensic genetics ⁶	Ethical and legal issues in forensic genetics ¹⁰	Expert Reports and Testimony ¹⁴	Open seminars ¹⁸	Free Afternoon	
15.45 – 17.15	Forensic Pharmacology-1 ³	Expert Report and Testimony ⁷	Expert report on the Italian law on assisted reproductive technologies (n. 40/2004) ¹¹	Expert report on the Italian law on assisted reproductive technologies (n. 40/2004) ¹⁵			
					Dinner Talk with Speakers		

1 - Course presentations:
Antonina Argo , M.D. - Department of Sciences for the Promotion of Health G. D'Alessandro - University of Palermo: Forensic use of Bio-information: ethical issues; Forensic and Medical Legal aspect on sexual abuse
Ulrike Bartz - Hochschule Bonn-Rhein-Sieg University of Applied Sciences - Bonn, Germany: Introduction on Forensic Pharmacology
Elena Carra , Ph.D. - Department of Biological, Chemical and Pharmaceutical Sciences and Technologies - University of Palermo, Italy : DNA profile application & ethical issues; Introduction on Biostatistics and DNA profiles
Francesca Di Gaudio , Ph.D. - Department of Pathobiology and Medical Biotechnology - University of Palermo, Italy: Laboratory Guidelines and Standards in Forensic Toxicology

Courses/Module/ Speakers:
2, 5 - Prof. Francesca Di Gaudio , Ph.D. - Department of Pathobiology and Medical Biotechnology - University of Palermo, Italy
3, 4 - Prof. Ulrike Bartz - Hochschule Bonn-Rhein-Sieg University of Applied Sciences - Bonn, Germany
6, 10 - Prof. Antonina Argo , M.D - Department of Sciences for the Promotion of Health G. D'Alessandro, University of Palermo, Italy
7, 11, 15 - Prof. Elena Carra , Ph.D. - Department of Biological, Chemical and Pharmaceutical Sciences and Technologies STEBICEF - University of Palermo, Italy
8, 12, 14, 16, 18 - Prof. Francesco De Stefano , M.D. - Department of Health Sciences, University of Genova, Italy
9, 13, 17, 18 - Prof. Susi Pelotti , M.D. - Department of Medical and Surgical Sciences, University of Bologna, Italy
19 - Dr. Samuele Corso - Judge, Criminal Court of Trapani, Italy
19 - Dr. Bernardo Petralia - Prosecutor of Palermo, Italy

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29 June - 8 July 2015										
Week IV + 3 days										
Week	Mon. 29	Tues.30	Wed.1	Thu.2	Fri. 3	Sat. 4	San. 5	Mon. 6	Tues.7	Wed.8
29-8 July										
9.00 - 10.30	Statistical analysis: basic population genetics ²⁰	Probability and likelihood: The Bayesian approach ²³	<i>Practical workshop prosecution</i> ^{25,26}	<i>Practical workshop prosecution</i> ^{25,26}	Mixtures Go to Court: the roles of Prosecutor, Defence Attorney and Expert Witnesses ²⁹	Open seminars ³¹		Forensics and Mitochondrial DNA ³²	mtDNA: applications, debates, and foundations ³⁴	Expert Reports and Testimony ³⁶
10.45-13.15	Introduction to hypothesis testing ²¹	Complex Mixtures: strategies and challenges ²⁴		Different Approaches to Statistical Analysis of Mixture ²⁷						Effect of highly fragmented DNA on PCR ³⁷
13.30-14.30	Lunch provided by CERISDI						Lunch provided by CERISDI			
14.30-15.30	The classical approach to hypothesis testing in the forensic context ²²	Practical workshop: application of open-source software LRmix Studio to analyse complex DNA profiles ^{25,26}	<i>Practical workshop prosecution</i> ^{25,26}	Mixture Interpretation Software ²⁸	Open seminars ³⁰	Free Afternoon		Forensic implications of genetic analyses from degraded DNA ³³	The role of DNA damage in PCR processivity / fidelity & forensic samples ³⁵	Expert Reports and Testimony ³⁸
15.45-17.15										TEST
					<i>Dinner Talk with Speakers</i>					Certificate Ceremony & Farewell Dinner

Courses/Module/ Speakers:

20, 21, 22, 23, 24, 31 - Prof. **Silvano Presciuttini** - Department of Translational Research and New Technologies in Medicine, University of Pisa, Italy

25 - Prof. **Peter Gill** - EUROFORGEN-NoE - Norwegian Institute of Public Health, Oslo, Norway

26 - Dr. **Hinda Haned** - Netherlands Forensic Institute, NFI- Ministry of Security and Justice, Netherlands

27, 28, 20, 30 - Prof. **Vincenzo Lorenzo Pascali** - Institute of Health Public, Cattolica University UCSC of Rome, Italy

31, 32, 34, 36 - Prof. **Carlo Previderè** - Department of Public Health, Experimental Medicine and Forensic, University of Pavia, Italy

30, 33, 35, 37, 38 - Prof. **Paolo Fattorini** - Department of Surgical and Medical Sciences of Health, University of Trieste, Italy

37, 38 - Dr. **Solange Sorçaburu Cigliero** - Department of Surgical and Medical Sciences of Health, University of Trieste, Italy

6, 7 : Practical workshop: The purpose of the course "Application of open-source software LRmix Studio to analyse complex DNA profiles" is to provide the opportunity for participants to analyse their own challenging case examples. Participants must bring a portable PC for the computer exercises. Some information will be sent prior to the workshop itself. The aim is to provide participants with sufficient information and training so that they are able to run the software in their own laboratory.

II - Module-
The Weight of Evidence : Bioethics & DNA , Biostatistics & DNA profiles
22 June - 8 July 2015

Week III

Monday 22 June

9.00 – 9.30	Registration
10.00 – 10.30	Opening addresses A. Argo (Palermo - I), E. Carra (Palermo - I), F. Di Gaudio (Palermo - I) Course Presentation
10.30 – 11.00	<i>Coffee Break</i>
11.00 – 11.30	Forensic use of Bio-information: ethical issues; Forensic and Medical Legal aspect on sexual abuse; A. Argo (Palermo - I)
11.30 – 12.00	DNA profile application & ethical issues: Introduction on DNA statistics ant the Law E. Carra (Palermo - I)
12.00 – 12.30	Laboratory Guidelines and Standards in Forensic Toxicology F. Di Gaudio (Palermo - I)
12.30 – 13.00	Introduction on Forensic Pharmacology U. Bartz (Bonn - D)
13.30 – 14.30	<i>Lunch</i>
15.00 – 16.30	Overview of Forensic Toxicology F. Di Gaudio (Palermo-I)
16.30 – 16.45	<i>Break</i>
16.45 – 17.30	Forensic Pharmacology-1 U. Barzt (Bonn - D)

Tuesday 23 June

9.00 – 10.30	Forensic Pharmacology-2 U. Barzt (Bonn - D)
10.30 – 11.00	<i>Coffee Break</i>
11.00 – 13.00	Quality, Standard & Guidelines on Forensic Toxicology F. Di Gaudio (Palermo - I)
13.30 – 14.30	<i>Lunch</i>
15.00 – 16.30	Ethical and legal issues in forensic genetics-1 A. Argo (Palermo - I)
16.30 – 16.45	<i>Break</i>
16.45 – 17.30	Expert Report and Testimony E. Carra (Palermo - I)

Wednesday 24 June

9.00 – 10.30	Bioethics & DNA Databases F. De Stefano (Genova - I)
10.30 – 11.00	<i>Coffee Break</i>
11.00– 13.15	Sexual abuse & Forensic Investigations S. Pelotti (Bologna - I)
13.30 – 14.30	<i>Lunch</i>
15.00 – 16.00	Ethical and legal issues in forensic genetics-2

A. Argo (Palermo - I)

16.00 – 16.15

Break

16.15 – 17.30

Expert Report on the Italian law on assisted reproductive technologies-1
(n. 40/ 2004)

E. Carra (Palermo - I)

Thursday 25 June

9.00 – 10.30

Social, Ethical and Legal aspects of current and emerging uses of
Forensic Genetics

F. De Stefano (Genova - I)

10.30 – 11.00

Coffee Break

11.00 – 13.15

The importance of DNA in sexual assaults: preserving and collecting
forensic evidence

S. Pelotti (Bologna - I)

13.30 – 14.30

Lunch

15.00 – 16.30

Expert Reports and Testimony

F. De Stefano (Genova - I)

16.30 – 16.45

Break

15.45 – 17.30

Expert Report on the Italian law on assisted reproductive technologies-2
(n. 40/ 2004)

E. Carra (Palermo - I)

Friday 26 June

9.00 – 10.30

DNA & ethical and legal guidelines

F. De Stefano (Genova - I)

10.30 – 11.00

Coffee Break

11.00 – 13.15

Expert Reports and Testimony

S. Pelotti (Bologna - I)

13.30 – 14.30

Lunch

Open Seminars for Officers of the Italian Court and criminal justice professionals

15.00 – 16.30

Free Topic & Discussion

F. De Stefano (Genova - I)

16.30 – 16.45

Break

16.45 – 18.00

Free Topic & Discussion

S. Pelotti (Bologna - I)

Dinner Talk with Speakers

Saturday 27 June

Open Seminars for Officers of the Italian Court and criminal justice professionals

9.00 – 10.30

Use of Forensic DNA Evidence in Prosecutors' Offices: Instrument of
Truth or Potential for Miscarriage?

B. Petralia (Palermo)

10.30 – 10.45

Break

10.45 – 13.00

Why criticism of judges for DNA evidence is a concern: Dilemma and
Decisions in Criminal Justice

S. Corso (Trapani)

Light Buffet Lunch

Free afternoon

Sunday 28 June Free day

II – Module- Week IV + 3 days

Monday 29 June

- 9.00 – 10.30 Statistical analysis: basic population genetics
S. Presciuttini (Pisa - I)
- 10.30 – 11.00 *Coffee Break*
- 11.00 – 13.15 Introduction to hypothesis testing
S. Presciuttini (Pisa - I)
- 13.30 – 14.30 *Lunch*
- 15.30 – 16.30 The classical approach to hypothesis testing in the forensic context-1
S. Presciuttini (Pisa - I)
- 16.30 – 16.45 *Break*
- 16.45 – 17.30 The classical approach to hypothesis testing in the forensic context-2
S. Presciuttini (Pisa - I)

Tuesday 30 June

- 9.00 – 10.30 Probability and likelihood: The Bayesian approach
S. Presciuttini (Pisa - I)
- 10.30 – 11.00 *Coffee Break*
- 11.00 – 13.15 Complex Mixtures: strategies and challenges
S. Presciuttini (Pisa - I)
- 13.30 – 14.30 *Lunch*
- 15.00 – 16.30 **Practical workshop:** application of open-source software LRmix Studio to analyse complex DNA profiles
P. Gill (Oslo - N), **Hinda Haned** (NFI - Netherlands)
- 16.30 – 16.45 *Break*
- 16.45 – 17.30 **Practical workshop prosecutions**
P. Gill (Oslo - N), **Hinda Haned** (NFI - Netherlands)

Wednesday 1 July

- 9.00 – 10.30 **Practical workshop prosecutions**
P. Gill (Oslo - N), **Hinda Haned** (NFI - Netherlands)
- 10.30 – 11.00 *Coffee Break*
- 11.00 – 13.15 **Practical workshop prosecutions**
P. Gill (Oslo - N), **Hinda Haned** (NFI - Netherlands)
- 13.30 – 14.30 *Lunch*
- 15.00 – 16.30 **Practical workshop prosecutions**
P. Gill (Oslo - N), **Hinda Haned** (NFI - Netherlands)
- 16.30 – 16.45 *Break*
- 16.45 – 17.30 **Practical workshop prosecutions**
P. Gill (Oslo - N), **Hinda Haned** (NFI - Netherlands)

Thursday 2 July

- 9.00 – 10.30 **Practical workshop prosecutions**
P. Gill (Oslo - N), **Hinda Haned** (NFI - Netherlands)
- 10.30 – 11.00 *Coffee Break*
- 11.00 – 13.15 Different Approaches to Statistical Analysis of Mixture
V. Pascali (Rome - I)
- 13.30 – 14.30 *Lunch*

- 15.00 – 16.30 Mixture Interpretation Software-1
V. Pascali (Rome - I)
16.30 – 16.45 *Break*
16.45 – 17.30 Mixture Interpretation Software-2
V. Pascali (Rome - I)

Friday 3 July

- 9.00 – 10.30 Mixtures Go to Court: the roles of Prosecutor, Defence Attorney and Expert Witnesses-1
V. Pascali (Rome - I)
10.30 – 11.00 *Coffee Break*
10.45 – 13.15 Mixtures Go to Court: the roles of Prosecutor, Defence Attorney and Expert Witnesses-2
V. Pascali (Rome - I)
13.30 – 14.30 *Lunch*

Open Seminars for Officers of the Italian Court and criminal justice professionals

- 15.30 – 16.30 *Free Topic & Discussion*
V. Pascali (Rome - I)
16.30 – 16.45 *Break*
16.45 – 18.00 *Free Topic & Discussion*
P. Fattorini (Trieste - I)

Dinner Talk with Speakers

Saturday 4 July

Open Seminars for Officers of the Italian Court and criminal justice professionals

- 9.00 – 10.30 *Free Topic & Discussion*
S. Presciuttini (Pisa - I)
10.30 – 10.45 *Break*
10.45 – 13.00 *Free Topic & Discussion*
C. Previderè (Pavia - I)
Light Buffet Lunch
Free afternoon

Sunday 5 July Free day

Monday 6 July

- 9.00 – 10.30 Forensics and Mitochondrial DNA -1
C. Previderè (Pavia - I)
10.30 – 11.00 *Coffee Break*
11.00 – 13.15 Forensics and Mitochondrial DNA -2
C. Previderè (Pavia - I)
13.30 – 14.30 *Lunch*
15.30 – 16.30 Forensic implications of genetic analyses from degraded DNA-1
P. Fattorini (Trieste - I)
16.30 – 16.45 *Break*
16.45 – 17.30 Forensic implications of genetic analyses from degraded DNA-2
P. Fattorini (Trieste - I)

Tuesday 7 July

- 9.00 – 10.30 mtDNA: applications, debates, and foundations-1
C. Previderè (Pavia - I)
10.30 – 11.00 *Coffee Break*

- 11.00 – 13.15 mtDNA: applications, debates, and foundations-2
C. Previderè (Pavia - I)
- 13.30 – 14.30 *Lunch*
- 15.00 – 16.30 The role of DNA damage in PCR processivity / fidelity & forensic samples -1
P. Fattorini (Trieste - I), **S. Sorçaburu Cigliero** (Trieste - I)
- 16.30 – 16.45 *Break*
- 16.45 -17.30 The role of DNA damage in PCR processivity / fidelity & forensic samples -1
P. Fattorini (Trieste - I), **S. Sorçaburu Cigliero** (Trieste - I)

Wednesday 8 July

- 9.00 – 10.30 Expert Reports and Testimony
C. Previderè (Pavia - I)
- 10.30 – 11.00 *Coffee Break*
- 11.00 – 13.15 Effect of highly fragmented DNA on PCR
P. Fattorini (Trieste - I), **S. Sorçaburu Cigliero** (Trieste - I)
- 13.30 – 14.30 *Lunch*
- 15.00 – 16.30 Expert Reports and Testimony
P. Fattorini (Trieste - I)
- 16.30 – 16.45 *Break*
- 16.45 – 18.00 **TEST**
- 20.00 – 23.00 **Certificate Ceremony & Farewell Dinner**