

## Training Course

### European Educational Programme in Epidemiology

#### FRONTIERS IN EXPOSURE ASSESSMENT IN EPIDEMIOLOGY: EXPOSOME

*Florence, 17–21 June, 2013*

This five-day residential course provides a perspective on the burgeoning field of exposomics, the latest addition to the instruments for assessing exposures within epidemiological studies. After reviewing the history of exposure assessment and the concept of the exposome, the course addresses the issues of measurement errors, methods for measuring biomarkers in different areas of “omics”, study designs for validating biomarkers, and tools for statistical analysis of biomarker data. The course concludes with a look at possible future developments in exposure assessment in epidemiology.

#### Faculty:

Paolo Vineis and Marc Chadeau, Imperial College London;  
Rodolfo Saracci, European Educational Programme in Epidemiology, Florence;  
Pietro Ferrari, Steve Rappaport, and Augustin Scalbert, International Agency for Research on Cancer, Lyon.

Course fee: €1500 – covers full board and lodging for the entire course.

Venue: The “Studium” Centre, via della Piazzola 71, 50103, Firenze, Italy.

Dates: Sunday 16 June (PM) to Friday 21 June, 2013.

Application forms are available online at: <http://www.eepe.org>.

#### Part 1: Introduction to exposures, exposome and their measurement.

Monday 17 June	Topic	Presenter
9:00–10:00	Welcome and introduction of participants and a brief outline of what we measure in epidemiology	R. Saracci
10:00–11:00	History of exposure assessment	S. Rappaport
11:00–11:30	<b>Coffee break</b>	
11:30–12.30	The exposome	S. Rappaport
12:30–14:30	<b>Lunch</b>	

14:30–15:30	The ABC of a method of measurement properties	R. Saracci
15:30–16:30	Bio-monitoring/modelling	S. Rappaport
16:30–17:00	<b>Coffee break</b>	
17:00–18:00	Measurement errors: an introduction	P. Ferrari

## Part 2: “Omics” the exposome and the statistical analysis of exposome data.

<b>Tuesday 18 June</b>		
9:00–10:00	Introduction to “omics”: the example of metabolomics	A. Scalbert
10:00–11:00	Measurement errors: the need for objective assessment	P. Ferrari
11:00–11:30	<b>Coffee break</b>	
11:30–12:30	The microbiome	S. Rappaport
12:30–14:30	<b>Lunch</b>	
14:30–15:30	Statistical approaches to “omics”	M. Chadeau
15:30–16:30	Multiple comparisons and nuisance in “omics” data	M. Chadeau
16:30–17:00	<b>Coffee break</b>	
17:00–18:00	Introduction to gene–environment interactions	R. Saracci

<b>Wednesday 18 June</b>		
9:00–10:00	Measuring nutritional and lifestyle exposures	A. Scalbert
10:00–11:00	Measuring nutritional and lifestyle exposures	A. Scalbert
11:00–11:30	<b>Coffee break</b>	
11:30–12:30	Introduction to study design	P. Vineis
12:30–14:30	<b>Lunch</b>	
14:30–15:30	Validation of biomarkers	P. Vineis
15:30–16:30	Validation of biomarkers	P. Vineis
16:30–17:00	<b>Coffee break</b>	
17:00–18:00	Metabonomic profiles	A. Scalbert

<b>Thursday 20 June</b>		
9:00–10:00	Epigenetics	P. Vineis
10:00–11:00	Epigenetics	P. Vineis
11:00–11:30	<b>Coffee break</b>	
11:30–12:30	Exploring variations in “omics” data	P. Ferrari
12:30–14:30	<b>Lunch</b>	
14:30–15:30	“Meet-in-the middle” approach	P. Vineis
15:30–16:30	Exposome-wide association studies (EWAS)	S. Rappaport
16:30–17:00	<b>Coffee break</b>	
17:00–18:00	Ethical issues and incidental findings	R. Saracci

## Part 3: The future of exposomics



## Friday 21 June

9:00–11:00

Round table

11:00–11:30

**Coffee break**

11:30–12:30

Course evaluation and conclusion

Chair

S. Rappaport