



# **European Educational Programme in Epidemiology**

**31<sup>th</sup> RESIDENTIAL SUMMER COURSE  
FLORENCE, ITALY  
Pre-courses 11 – 15 JUNE 2018**



# European Educational Programme in Epidemiology

## Pre-Course:

### **“GIS (Geographic Information Systems) in Epidemiology”**

*Danielle Vienneau & Kees de Hoogh*

12 – 15 June 2018

### **“Modern methods in occupational epidemiology”**

*John Cherrie, Neil Pearce, Eva Schernhammer, Michelle Turner & Manolis Kogevinas*

11 – 15 June 2018

### **“Geo-spatial methods for global health applications”**

*Annibale Biggeri & Emanuele Giorgi*

11 – 14 June 2018

## “GIS (Geographic Information Systems) in Epidemiology”

12 – 15 June 2018

*Danielle Vienneau and Kees de Hoogh*

### Program Tuesday 12 June 2018

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08:30 – 10:30 Optional Software clinic (1hr)  
**Class starts 9:30!**  
Course intro (30min) – Kees de Hoogh  
**Quick start to GIS**  
Intro and Demo (30min) – Danielle Vienneau

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10:30 – 11:00 **Coffee Break**

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11:00 – 13:00 **Quick start to GIS continued**  
Exercise 1 (2hr)

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13:00 – 14:30 **Lunch**

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14:30 – 15:30 **Lecture 1**  
GIS in Epidemiology (1h) – Danielle Vienneau

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15:30 – 16:00 **Coffee point available**

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16:00 – 18:00 **Spatial relationships and analysis**  
Intro (15min) – Kees de Hoogh  
Exercise 2 (1h45min)

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**Program**      **Wednesday 13 June 2018**

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08:30 – 10:30      **Working with raster data**  
Intro (15min) – Kees de Hoogh  
Exercise 3 (1h45min)

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10:30 – 11:00      **Coffee Break**

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11:00 – 13:00      **Projections and geocoding**  
Intro (15min) – Danielle Vienneau  
Exercise 4 (1h45min)

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13:00 – 14:30      **Lunch**

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14:30 – 15:30      **Lecture 2**  
Exposure assessment using GIS (1h) – Kees de Hoogh

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15:30 – 16:00      **Coffee point available**

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16:00 – 18:00      **Wrap-up and discussion**  
(finish exercises, overview day 1&2)

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**Program Thursday 14 June 2018**

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08:30 – 10:30 **Decision making with Route Analysis**

Intro (15min) – Kees de Hoogh

Exercise 5 (1h45min)

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10:30 – 11:00 **Coffee Break**

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11:00 – 13:00 **Risk assessment**

Intro (15min) – Danielle Vienneau

Exercise 6 (1h45min)

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13:00 – 14:30 **Lunch**

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14:30 – 15:30 **Lecture 3**

Mapping and Communication (1h) – Kees de Hoogh & Danielle Vienneau

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15:30 – 16:00 **Coffee point available**

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16:00 – 18:00 **Quick Start to Open course GIS**

Intro (15min) – Kees de Hoogh

Exercise 7 (1h45min)

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**Program Friday 15 June 2018**

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08:30 – 10:30 **Open source GIS part 2**  
Intro (15min) – Kees de Hoogh  
Exercise 8 (1h45min)

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10:30 – 11:00 **Coffee Break**

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11:00 – 13:00 **Spatial Pattern Analysis**  
Exercise 9 (2h)

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13:00 – 14:30 **Lunch**

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14:30 – 15:30 **Wrap-up and discussion (1h)**  
(share experiences in own projects)

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**“Modern methods in occupational epidemiology”**

11 – 15 June 2018

**John Cherrie, Neil Pearce, Eva Schernhammer, Michelle Turner & Manolis Kogevinas**

<b>Program</b>	<b>Monday 11 June 2018</b>
08:30 – 09:30	<b>Epidemiology and occupational health</b> Manolis Kogevinas
09:30 – 10:30	<b>Overview of study designs</b> Neil Pearce
10:30 – 11:00	<b>Coffee Break</b>
11:00 – 12:00	<b>Overview of types of bias</b> Neil Pearce
12:00 – 13:00	<b>Occupational cross-sectional studies</b> Manolis Kogevinas
13:00 – 14:00	<b>Lunch</b>
14:30 – 15:30	<b>Guest Lecture 1</b> Michelle Turner – International collaboration in occupational health
15:30 – 16:00	<b>Coffee point available</b>
16:00 – 17:30	<b>Exercise 1: study design</b> Manolis Kogevinas
17:30 – 18:00	<b>Student Presentations</b>

<b>Program</b>	<b>Tuesday 12 June 2018</b>
08:30 – 09:30	<b>Occupational case-control studies 1</b> Michelle Turner
09:30 – 10:30	<b>Occupational case-control studies 2</b> Michelle Turner
10:30 – 11:00	<b>Coffee Break</b>
11:00 – 12:00	<b>Occupational cohort studies 1</b> Eva Schernhammer
12:00 – 13:00	<b>Occupational cohort studies 2</b> Eva Schernhammer
13:00 – 14:00	<b>Lunch</b>
14:30 – 15:30	<b>Guest lecture 2</b> Eva Schernhammer - Cohort studies of working hours
15:30 – 16:00	<b>Coffee point available</b>
16:00 – 17:30	<b>Exercise 2: cohort studies</b> Michelle Turner
17:30 – 18:00	<b>Student Presentations</b>

**Welcome drinks**



<b>Program</b>	<b>Wednesday 13 June 2018</b>
08:30 – 09:30	<b>Exposure assessment 1</b> John Cherrie
09:30 – 10:30	<b>Exposure assessment 2</b> John Cherrie
10:30 – 11:00	<b>Coffee Break</b>
11:00 – 12:00	<b>Guest lecture 3</b> John Cherrie – Assessing exposure to pesticides for epidemiological studies
12:00 – 13:00	<b>Exercise 3: exposure assessment</b> John Cherrie
13:00 – 14:00	<b>Lunch</b>
14:30 – 15:30	<b>Risk assessment 1</b> Michelle Turner
15:30 – 16:00	<b>Coffee point available</b>
16:00 – 16:30	<b>Risk assessment 2: The IARC hazard identification approach</b> Manolis Kogevinas
16:30 – 17:30	<b>Information and Selection Bias</b> Manolis Kogevinas
17:30 – 18:00	<b>Student Presentations</b>

**Evening Guest Lecture: Neil Pearce “The epidemic you have never heard of: chronic kidney disease of unknown cause”**

<b>Program</b>	<b>Thursday 14 June 2018</b>
08:30 – 09:30	<b>New Study Designs</b> Manolis Kogevinas
09:30 – 10:30	<b>Confounding</b> Manolis Kogevinas
10:30 – 11:00	<b>Coffee Break</b>
11:00 – 12:00	<b>Modelling Strategies</b> Neil Pearce
12:00 – 13:00	<b>Directed Acyclic Graphs (DAGs)</b> Neil Pearce
13:00 – 14:00	<b>Lunch</b>
14:30 – 15:30	<b>Guest lecture 4</b> Ingrid Sivesind Mehlum – Register-based studies and Job-Exposure Matrices (JEMs)
15:30 – 16:00	<b>Coffee point available</b>
16:00 – 17:30	<b>Exercise 4: Confounding/Directed Acyclic Graphs (DAGs)</b> Neil Pearce
17:30 – 18:00	<b>Student Presentations</b>

**Program Friday 15 June 2018**

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08:30 – 09:30 **Current debates on causality in occupational epidemiology**  
Neil Pearce

09:30 – 10:30 **Triangulation**  
Neil Pearce

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10:30 – 11:00 **Coffee Break**

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11:00 – 12:00 **Exposome**  
Manolis Kogevinas

12:00 – 13:00 **Final session – course certificates and discussion of priorities for occupational epidemiology**  
Neil Pearce/Michelle Turner/Ingrid Sivesind Mehlum

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13:00 – 14:00 **Lunch**

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## **“Geo-spatial methods for global health applications”**

11 – 14 June 2018

**Annibale Biggeri & Emanuele Giorgi**

### **Monday 11<sup>th</sup> June**

- The class of geostatistical problems.
- Exploring spatial correlation in the data: the variogram.
- The linear geostatistical model.
- Geostatistical prediction.

### **Tuesday 12<sup>th</sup> June**

- The binomial geostatistical model.
- Monte Carlo maximum likelihood.
- Prevalence mapping.

### **Wednesday 13<sup>th</sup> June**

- Spatial areal data
- Historical review of Disease Atlases
- Principles of Disease Mapping

### **Thursday 14<sup>th</sup> June**

- Bayesian approaches to Disease Mapping
- Using Posterior Quantities
- Bayesian Ranking



# **European Educational Programme in Epidemiology**

**FACULTY MEMBERS**

## Faculty Members

### **Annibale Biggeri**

Università di Firenze  
Unità Operativa di Biostatistica – ISPO  
Padiglione Alberto Mario Fiori  
Via delle Oblate, 2  
50141 Firenze  
Italy  
E-mail: [abiggeri@ds.unifi.it](mailto:abiggeri@ds.unifi.it)

### **John Cherrie**

IOM Institute of Occupational Medicine  
Research Avenue North  
Riccarton  
Edinburgh EH14 4AP  
E-mail: [john.cherrie@iom-world.org](mailto:john.cherrie@iom-world.org)

### **Kees de Hoogh**

Swiss Tropical and Public Health Institute  
Socinstrasse 57  
4002 Basel  
Switzerland  
E-mail: [c.dehoogh@swisstph.ch](mailto:c.dehoogh@swisstph.ch)

### **Emanuele Giorgi**

Lancaster Medical School  
Faculty of Health and Medicine  
Furness College, Room B73  
Lancaster University  
Lancaster LA1 4YG  
E-mail: [e.giorgi@lancaster.ac.uk](mailto:e.giorgi@lancaster.ac.uk)

### **Manolis Kogevinas**

Barcelona Institute for Global Health  
ISGlobal - Campus Mar  
Doctor Aiguader 88  
08003 Barcelona  
Spain  
E-mail: [manolis.kogevinas@isglobal.org](mailto:manolis.kogevinas@isglobal.org)

### **Ingrid Sivesind Mehlum**

Norwegian Institute of Occupational Health  
(STAMI)  
Gydas vei 8  
0363 Oslo  
Norway  
E-mail: [ingrid.s.mehlum@stami.no](mailto:ingrid.s.mehlum@stami.no)

### **Neil Pearce**

**(Director of the course)**  
Dept. of Medical Statistics  
London School of Hygiene &  
Tropical Medicine  
Keppel Street  
London WC1E 7HT  
UK  
E-mail: [Neil.Pearce@lshtm.ac.uk](mailto:Neil.Pearce@lshtm.ac.uk)

### **Lorenzo Richiardi**

**(Director of the course)**  
Unit of Cancer Epidemiology  
Dept. of Medical Sciences, University of  
Turin  
Via Santena 7, 10126 Turin  
Italy  
E-mail: [lorenzo.richiardi@unito.it](mailto:lorenzo.richiardi@unito.it)

### **Eva Shemhammer**

Department of Medicine  
Brigham and Women's Hospital  
Harvard Medical School  
Boston, MA  
United States of America  
E-mail: [nhess@channing.harvard.edu](mailto:nhess@channing.harvard.edu)

### **Michelle Turner**

Barcelona Institute for Global Health  
ISGlobal - Campus Mar  
Doctor Aiguader 88  
08003 Barcelona  
Spain  
E-mail: [michelle.turner@isglobal.org](mailto:michelle.turner@isglobal.org)

### **Danielle Vienneau**

Swiss Tropical and Public Health Institute  
Socinstrasse 57  
4002 Basel  
Switzerland  
E-mail: [danielle.vienneau@swisstph.ch](mailto:danielle.vienneau@swisstph.ch)

### **Rodolfo Saracci**

**(Founder Director of the course)**  
Istituto di Fisiologia Clinica del CNR  
Via Trieste 29  
56100 Pisa  
Italy  
E-mail: [saracci@hotmail.com](mailto:saracci@hotmail.com)

## Faculty Members

### ***Secretariat***

**Mar Ferrer**

Barcelona Institute for Global Health

ISGlobal

Campus Mar

Doctor Aiguader 88

08003 Barcelona

Spain

E-mail: [eepe@eepe.org](mailto:eepe@eepe.org)