

third  
edition

Molecular epidemiology has the  
power to open up the 'black box'

# M2E2 Molecular Epidemiology of Chronic Diseases

Maastricht, The Netherlands · International Course · 16-20 June 2014

## What can molecular epidemiology bring us?

Epidemiology has been proven valuable to identify associations between exposure and disease, in particular because it enables us to study long-term effects of 'normal' variation in exposure in populations. However, traditional epidemiology does so without obtaining information of the biological processes that underlie these associations. Molecular epidemiology has the power to open up this 'black box'. Molecular epidemiology will not only enhance the measurement of exposure, effect, and susceptibility, it will also give insight in complex biological mechanisms, and generate novel hypotheses about disease mechanisms. Molecular epidemiology will thereby increase opportunities for better targeted public health interventions.

## Find out more in a challenging course

The Maastricht Molecular Epidemiology Expertise group (M2E2) offers you a challenging five days course to grasp the essentials of molecular epidemiology: combining information from molecular biomarkers that are more and more often obtained with omics technologies, with lifestyle and environmental factors, to understand disease occurrence and prognosis in population-based studies. The challenges faced in this multi-disciplinary endeavour are manifold. This course brings together the different fields of expertise involved in molecular epidemiological research in a comprehensive and integrated manner. Participants will be confronted with issues ranging from study design to statistical analysis, and interpretation of findings in the context of public health. Focus lies especially on methodological issues, with a variety of disease settings used as illustration.

## Course

During the course schedule, lectures will be alternated with hands-on practical trainings and demonstrations. Participants will have plenty of opportunities to interact with each other and with faculty members.

At the end of the course you will be able to:

- critically appraise molecular epidemiologic literature and related omics literature;
- recognize and better understand design issues specific to molecular epidemiologic studies;
- recognize the challenges and opportunities of incorporating omics into large population studies;
- appreciate the bioinformatics approaches in molecular epidemiology;
- understand statistical approaches to data analysis in molecular epidemiology;
- interpret results from such approaches;
- understand the public health impact of molecular epidemiologic study results.

## Course program day by day

### Day 1 - What is molecular epidemiology and how can it contribute to public health?

What is molecular epidemiology? Which study design issues are important to consider? What is the potential impact of molecular epidemiology on public health research, policy and practice?

### Day 2 - How to integrate biomarkers in population based studies?

What is a good biomarker, what are sources of variation, and which practical issues are important during the design of your study? What are challenges in ongoing, and in newly designed population-based studies?

### Day 3 - What can omics technology bring us?

Which omics techniques are available? When to use which technique, depending on your research question and design? Which challenges are we faced with when using these techniques in molecular epidemiology?

### Day 4 - How to handle complex data using bioinformatics?

What is bioinformatics and how can it help us to integrate the different types of omics data and other population characteristics such as lifestyle?

### Day 5 - How to statistically analyze and interpret the data in a public health context?

What are common data analyses techniques in molecular epidemiology, and how can we use novel techniques to improve our exploration of the data and understanding of the results? Will this help us to accelerate the translation from molecular epidemiology into public health? What is the role of public health genomics?

Register now at [www.M2E2.nl](http://www.M2E2.nl)

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## Participants

The audience targeted is PhD students and postdoctoral fellows from epidemiology, biology, medicine, statistics, and related fields, as well as at those working in public health, who want to become acquainted with this expanding research area.

## Course faculty

The course is designed by an outstanding group of professionals in Molecular Epidemiology. They will guide you through this complex, but extremely interesting field of science.

- **Prof. Dr. M.P. Weijnenberg**, course director, Dept. Epidemiology, Maastricht University
- **Prof. Dr. I.C.W. Arts**, course director, Dept. Epidemiology, Maastricht University
- **Prof. Dr. A. Brand**, Institute for Public Health Genomics, Maastricht University
- **Dr. L.M.T. Eijssen**, Dept. Bioinformatics - BiGCaT, Maastricht University
- **Dr. R. Godschalk**, Dept. Toxicology, Maastricht University
- **Dr. T. de Kok**, Dept. Toxicogenomics, Maastricht University
- **Dr. V. Limapassos**, Dept. Methodology and Statistics, Maastricht University
- **Prof. Dr. Paolo Vineis**, Imperial College, London
- **Prof. Dr. Stefano Bonassi**, IRCCS San Raffaele Pisana, Rome

On [www.M2E2.nl](http://www.M2E2.nl) you can find out more about this interesting course.

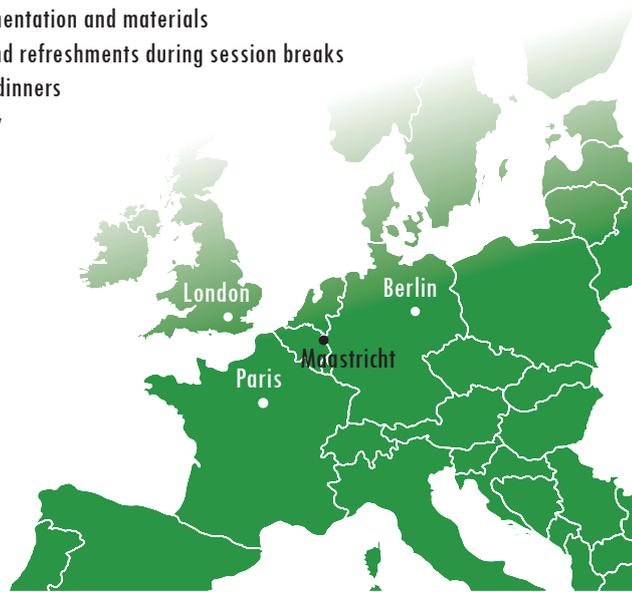
## How to register

For registration and payment procedures please consult the course website: [www.M2E2.nl](http://www.M2E2.nl).

The all-in cost for this 5-day course is € 1.150,00 per person. VAT is not applicable for this event.

Included in the registration fee:

- Admission to the sessions
- Course documentation and materials
- Coffee, tea and refreshments during session breaks
- Lunches and dinners
- Social activity



## Venue

The Beaumont Hotel and Restaurant is located in a landmark building in the elegant Wyck district in the center of Maastricht.

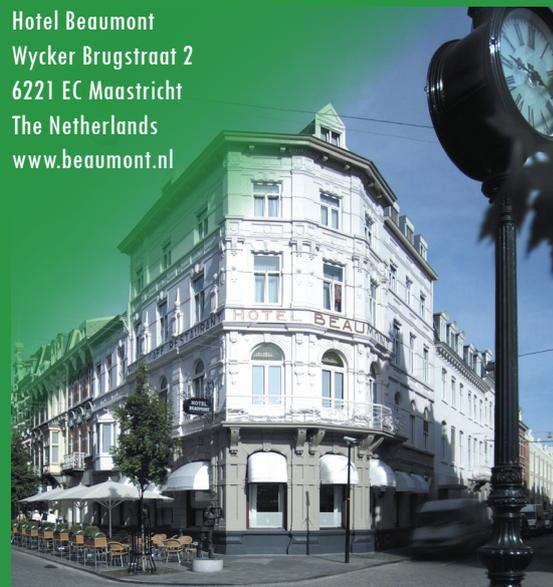
The Hotel offers besides 121 modern hotel rooms, several rooms suitable for meetings, workshops, brainstorm sessions and other business in a serene environment. A full team of specialised employees stands ready to serve you to their full capacity. After a day filled with business Beaumont offers you the possibility to dine in the restaurant which has a modern open kitchen and wine display.

By using organic and local produce with a genuine respect for ingredients the kitchen delivers appetizing dishes suitable for a after conference dinner.

You are most welcome at the Beaumont!

## Address

Hotel Beaumont  
Wycker Brugstraat 2  
6221 EC Maastricht  
The Netherlands  
[www.beaumont.nl](http://www.beaumont.nl)



## Contact

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Register now at [www.M2E2.nl](http://www.M2E2.nl)