



**Summer School**  
***The Bioinformatic series:***  
**“Microarray technology and**  
**Bioinformatics”**  
**Camerino**  
**August 29-September 2**  
**2005**

**Supported by the European Community:**  
 To Spread Bioinformatic Knowledge applied to Functional Genomic”.  
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**Why participate?**

The confluence of biotechnology, computer sciences, robotics has represented a unique event in modern biomedical research. Concurrently, several techniques have been developed to aid biologists in exploiting their investigations. In biomedical research the convergence of these events has contributed to the diffusion of the so called “omics” approach to analyze gene, protein expression networks or signal transduction pathways. Microarrays has been one of the most widely used high-throughput technology that, more than any other, has contributed to generate an amazing amount of data that over the years have been piled up. Numerous research teams now possess the skills to generate microarrays data, whereas in many cases it is still limited their capacity to extract biologically meaningful information from these data. In fact, this objective can be accomplished only through a multidisciplinary approach to data analysis in which biological knowledge are integrated by bioinformatic skills and advanced statistical applications.

**Enquiries:**

Please direct all registration and accommodation enquiries to the Secretariat:  
 Dept. of Experimental Medicine and Public Health.  
 University of Camerino, Via Scalzino, 3  
 62032 Camerino (MC)  
 Tel (+39) 0737 403300  
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 Email: [massimo.ubaldi@unicam.it](mailto:massimo.ubaldi@unicam.it)

Sessions	Topics	Theory	Practice
Session 1 <i>Gary Hardiman</i> <i>BIOGEM,</i> <i>UCSD</i>	Introduction to Microarrays Microarray Expression Platforms and Formats	4 hrs	
Session 2 <i>Gary Hardiman</i> <i>BIOGEM,</i> <i>UCSD</i>	Critical issues for consideration in designing a Microarray experiment (The biological sample, the experimental design, image processing and analysis)	2 hrs	
Session 2 <i>Massimo Ubaldi</i> <i>Unicam</i>	Commercial and open-source softwares for microarray data analysis	1 hrs	2 hrs (tutorial)
Session 4 <i>Natalie Thorne</i> <i>MPI</i>	Quality control, data normalization	1 hrs	2 hrs (tutorial)
Session 3 <i>Natalie Thorne</i> <i>MPI</i>	Statistica analysis of microarray data (R e BioConductor)	5 hrs	15 hrs (practical)
Session 4 <i>Misha Kapushesky</i> <i>EBI</i>	Web tools for microarray data analysis	2 hrs	
Session 5 <i>Misha Kapushesky</i> <i>EBI</i>	Data mining techniques	2 hrs	6 hrs (practical)
Hrs total		18	25

## Objective of the course

To train researchers to a multidisciplinary approach to microarray data analysis. Particular attention is devoted to the design of Microarray experiments, to data normalization and quality control as well as to statistical analysis and data mining techniq

## Who should attend:

In general the course will be of benefit for all those researchers working with microarray technologies that are interested in strengthening their knowhow in data management and data analysis. Molecular Biologists, Medical Chemists, Research Clinicians, Microarray Core Managers, Biological Database Curators, WEB Applications Developers, Bioinformaticians, Biostatisticians.

## About the Course

The course is organized in lectures, tutorials and practical sessions, given by experts at international level.

## Language

English is the official language of the course.

## Organizing:

- Roberto Ciccocioppo, Ph.D., Dept. of Experimental
- Medicine and Public Health, University of Camerino
- Laura Soverchia, Ph.D., Dept. of Experimental Medicine and Public Health. University of Camerino
- Emanuela Merelli, Ph.D., Dept. of Mathematic and Informatic, University of Camerino
- Flavio Corradini, Ph.D., Dept. of Mathematic and Informatic, University of Camerino
- Massimo Ubaldi, Ph.D. Dept. NEUROTEC, Karolinska Institute, Stockholm, Sweden.
- Misha Kapuskesky, Ph.D. European Bioinformatic Centre (EBI).
- Gary Hardiman, Ph.D., Div. of Endocrinology & Metabolism, Dept of Medicine and Director of Biomedical Genomics Microarray Facility, University of California San Diego (UCSD).

## Registration

The deadline for registration is 31 May 2005. The registration costs for each participant is 750 Euro. PhD\* students are entitled to a 35% discount rate. To warrant the quality of the course not more than 20 participant will be entitled to attend. The Course will be organized only if a minimum of 10 participants will register. The participation is regulated on a "first come first served basis".

\*Certification from your Head of Department is required to qualify for the PhD Student registration fee.

## The registration includes

- Participation to the course
- Certificate of attendance
- Lecture materials
- Lunches
- Accommodation

## Refund Policy

In case the minimum number of 10 participant is not reached the registration fee will be totally refund. Participant cancellations must be notified in writing or by email to the Congress Secretariat. Cancellations received prior to 31 June 2005 will receive a 50% refund. Cancellations received after 31 June 2005 will NOT be refunded. If you are unable to attend, a substitute is welcome at no extra charge.

## Accompanying Persons

Double bedroom accommodation is provided to the participants, therefore one accompanying persons per participant can have the accommodation costs waived.

## Method of Payment

Payment of fees must accompany all registration forms. No registration will be confirmed until payment is received. Payment can be made by Bank transfer (Banca delle Marche, Camerino, ABI 6055, CAB 68830 cc 0130341, (from abroad IBAN IT21K060556883000000008292 BIC BAMAIT3A), or by cheque to the Dept. of Experimental Medicine and Public Health.

## About Camerino

Camerino is one of the most beautiful little towns of Central Italy, being its medieval historical center one of the oldest in Region Marche. Camerino hosts one of the most ancient university in Italy. Placed on a spur on the Appennini Mountains at 670 meters high on the sea-level, Camerino achieves its period of greatest splendour under the rule of the Da Varano family. From the top of its rock it dominates the large valleys of the rivers Chienti and Potenza underneath, occupied by towers and fortresses. But if the town might look austere, the countryside, instead, is colourful and offers a lot of farms holidays where to spend a weekend.

## How to reach Camerino

### By car:

Those traveling on the A14 motorway should leave at "Macerata-Civitanova Marche" and proceed west along the highway till its end. Then, drive for about 10Km to the top of the hill where Camerino is located. Those traveling on the west side of "Appennini" mountains should reach Foligno, and then use the SS77 which will leads, after about 60Km, to the highway junction. From here, drive for about 10Km to the top of the hill where Camerino is located.

### By air:

The closest airport is the Ancona-Falconara "Raffaello Sanzio" airport. City buses connect the airport terminal with Falconara railway station. Then one can use trains to reach the "Camerino-Castelraimondo" station. It takes about one hour and a half with a change in Fabriano (leaving at 20:40)

### By coach:

from Rome: Coaches depart daily (except sunday) from Rome Piazzale Tiburtino 7:20 am (2:40 pm) and arrive at Camerino 11:40 am (7:00 pm). Coaches leave daily (except sunday) Camerino at 6:00 am (15:35 pm) and arrive to Rome Piazzale Tiburtino at 10:20 am (20:15 pm). A shuttle train connects Rome-Tiburtina station with Rome-Fiumicino "Leonardo da Vinci" airport ever half an hour.

### By rail:

The railway station "Camerino-Castelraimondo" is a minor station. It is only connected to a greater station, Fabriano, located along the route Ancona/Rome. There is a regular bus service connecting the "Camerino-Castelraimondo" station with the city center.