



# URV-SUMMER COURSE

## Metabolomics: an essential tool for life sciences

Metabolomics, the last and most emerging Omics science is of utmost importance in the study of biological systems. The course aims to give a broad presentation of metabolomics. It comprises analytical chemistry, biochemistry, data processing, bioinformatics and systems biology. Metabolomics is useful to study nutrients and their effects on health, the search for biomarkers for diagnosis and prognosis of diseases, biomedical research, epidemiological studies, etc. The Course is aimed at graduates in electronic engineering or computer science, chemistry, biochemistry, biotechnology, bioinformatics, etc. The goal is to gain an adequate level of understanding on metabolomics to be able to introduce the concept and methods in their respective areas of expertise.

### Tarragona, 30 June to 2 July 2014

**Times:** Morning 9-13 h & Afternoon 15-17 h (total 25 hours)

**Place:** Campus Sescelades, Escola Tècnica Superior d'Enginyeria, Av. Països Catalans, 26, 43007 Tarragona

**Coordination:** Dr. X. Correig

**Speakers:** Sr. A. Alonso, Dr. J. Brezmes, Dr. X. Correig, Dr. M. A. Rodríguez, Dr. O. Yanes, Dr. M. Vinaixa

- Lectures:**
1. Introduction to metabolomics
  2. Design of metabolomics experiments
  3. Statistics and multivariate analysis for metabolomics
  4. GC-MS based metabolomics
  5. LC-MS based metabolomics
  6. Practical example of a metabolomic workflow based in LC-MS
  7. NMR based metabolomics
  8. Practical example of a NMR metabolomic workflow
  9. Example of biomarker discovery in inflammatory diseases
  10. Examples of metabolomic studies in biomedicine, food technology and nutrition
  11. Present and future of metabolomics in the context of systems biology
  12. Visit to Metabolomics Platform and Centre for Omic Sciences facilities

