Introduction to multivariate data analysis –
a biostatistics CPD module

Course overview

This course examines different approaches developed to analyze multivariate data. Multivariate data analysis techniques are often applied to address research questions such as ‘are there a small number of underlying factors explaining the variables in the dataset?’; ‘is there a natural clustering in the dataset?’; ‘can we classify individuals into groups based on their characteristics?’ and ‘can we predict that a person will develop a particular condition/disease by looking at a range of symptoms?’. Delegates will learn to apply these methods using R software, as well as find out how to interpret their results.

Who should attend? Is it right for me?

This course is aimed at researchers working in the biomedical field and in industry (including PhD students and academic staff). It is suitable for those who have a basic previous knowledge of data analysis but not necessarily in the area of multivariate data analysis, as well as those seeking to refresh their skills.

What will delegates learn?

By the end of this course delegates will:
- Have an appreciation of the complexities of multivariate data
- Learn the principles behind a range of methods of multivariate data analysis
- Know how to carry out these procedures using R.

What does the course cover?

- What is multivariate data?
- Principal Component Analysis
- Cluster Analysis
- Discriminant Function Analysis
- Factor Analysis
- Using R to implement these different analyses.

To find out more

The course will be run by the Liverpool Multivariate Modelling Group at the University of Liverpool: Dr García-Fiñana, Dr Czanner and Dr Cheyne. Further information about the course and how to register can be found on the departmental website: [http://www.liv.ac.uk/translationall-medicine/departmentsandgroups/biostatistics/coursesandworkshops/](http://www.liv.ac.uk/translationall-medicine/departmentsandgroups/biostatistics/coursesandworkshops/). Queries regarding registration or fees should be made to [cpd@liv.ac.uk](mailto:cpd@liv.ac.uk) or +44 (0)151 794 8358, or Kath Forrest in the Department of Biostatistics at [cmshe@liv.ac.uk](mailto:cmshe@liv.ac.uk) or call +44(0)151 794 9752. Any other queries regarding the content of the course can be directed to Dr Chris Cheyne ([c.p.cheyne@liv.ac.uk](mailto:c.p.cheyne@liv.ac.uk)).