

INTRODUCTORY MEDICAL STATISTICS COURSE

Venue: National Heart and Lung Institute,
Guy Scadding Building (Dovehouse Street), Paul Wood Lecture Theatre
Two day course

GENERIC PROGRAM (following page: flyer)

<i>Date & time</i>	<i>Lecture title and summary points covered</i>	<i>Presenter(s)</i>
Day 1		
09.00 - 09.15	Registration and coffee	
09.15 - 10.15	Introduction to the research process: designing studies - <i>experimental and observational study designs</i> - <i>confounding, power, multiple testing</i>	Paul Cullinan Professor in Occupational and Environmental Respiratory Disease, National Heart and Lung Institute (NHLI)
10.15 - 11.15	Descriptive statistics - <i>means, medians, standard deviation</i> - <i>confidence intervals</i>	Winston Banya Medical Statistician, Royal Brompton and Harefield NHS Trust
11.15 - 11.30	<i>Tea</i>	
11.30 - 12.00	Introduction to statistical testing <i>hypothesis testing; "statistical significance"</i>	Winston Banya
12.00 - 13.00	Statistical testing and measures of association 1: continuous data - <i>t-tests; non-parametric tests</i>	Cristina Canova Research Associate, NHLI
13.00 - 14.00	<i>Lunch break</i>	
14.00 - 14.30	Statistical testing and measures of association 1: continuous data (<i>continued</i>)	Cristina Canova
14.30 - 15.45	Statistical testing and measures of association 2: continuous data - <i>ANOVA, correlation; agreement;</i> - <i>sensitivity and specificity</i>	Ioannis Bakolis Medical Statistician, NHLI
15.45 - 16.00	<i>Tea</i>	
16.00 - 17.00	Statistical testing and measures of association 3: categorical data - <i>chi-squared test; non-parametric tests</i>	James Potts Senior Data Manager, NHLI
17.00 - 17.30	Diagnostic tests (optional; external course only) - <i>sensitivity, specificity; PPV, NPV, NNT</i>	Paul Cullinan
Day 2		
09.00 - 09.15	Registration and coffee	
09.15 - 10.45	Data analysis demonstration - <i>demonstration of topics covered on previous day</i>	Stephanie MacNeill
10.45 - 11.00	<i>Tea</i>	
11.00 - 12.00	Power and sample size - <i>numbers needed to detect an effect</i>	Ioannis Bakolis
12.00 - 13.00	Interpretation of regression models 1 - <i>linear regression models</i>	Stephanie MacNeill
13.00 - 14.00	<i>Lunch break</i>	
14.00 - 15.20	Interpretation of regression models 2 - <i>logistic regression models; survival analysis</i>	Stephanie MacNeill
15.20 - 15.30	<i>Tea</i>	
15.30 - 17.00	Discussion groups: group exercise and paper critique - <i>study design, statistical analysis; interpretation</i>	Ioannis Bakolis, Winston Banya, Cristina Canova, Stephanie MacNeill

**This course is run on different dates for
(a) internal (NHLI and RBHT) staff and students, and (b) external candidates.**

Accreditation:

- a. NHLI and RBHT candidates – Accredited by Imperial College’s Academic Training Committee as a recognised ‘B’ equivalent course on the GSLSM (Graduate School of Life Sciences and Medicine) Transferable Skills Programme
- b. External candidates - CPD (Royal College of Physicians): 12 non-clinical points

National Heart and Lung Institute (Imperial College)
Occupational and Environmental Medicine, London SW3 6LR

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Two day course

~ FLYER ~

Introduction: This two-day introductory course has been running successfully for several years for clinical and scientific research staff.

Course aims: Designed to introduce doctors, nurses, clinical research fellows and postgraduate students (anyone who requires an understanding of statistics in their work or research) to a number of statistical concepts, listed in the “Aims and Objectives” below. No prior knowledge of statistics is assumed.

AIMS AND OBJECTIVES

By the end of the two days, participants should be able to:

- Have an appreciation of the uses of statistics in research
- Understand how their research hypothesis relates to statistical null and alternative hypothesis
- Identify different data types and describe and summarise them
- Appreciate which statistical tests are appropriate for their data (two and three group scenarios)
- Assess agreement using a variety of methods
- Calculate sample sizes for basic study designs
- Understand the principles behind various forms of regression analysis
- Critically appraise statistical methodology and reported results in peer-reviewed publications

REGISTRATION – FEES and PROCEDURE

- **Registration fee:** £250, including the handbook, lunch and other refreshments on both days, and an optional evening meal on the first day.
- **Registration** – please contact Magda Wheatley (details below).
- Places are confirmed upon payment of the registration fee. Delegate numbers are limited to 50, and demand for this course is always very high, so early registration is recommended.

For further details/enquiries, please contact:

- **Administration:**
Magda Wheatley, Secretary to Professor Paul Cullinan
National Heart & Lung Institute
Occupational & Environmental Medicine
1b Manresa Road, London SW3 6LR - e-mail: m.wheatley@imperial.ac.uk - tel: 020 7351 8934
- **Enquiries specific to course content:**
Stephanie MacNeill (Medical Statistician), Course Organiser
Address as above e-mail: s.macneill@imperial.ac.uk - tel: 020 7351 8397

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