

**Monday 25th March 2013 7:15 for 7:45**

The Large Seminar Room, Institute of Public Health,  
University Forvie Site, Robinson Way, Cambridge, CB2 0SR

## **Large-scale meta-analysis of individual participant data: methods and challenges**

**Stephen Kaptoge**

Cardiovascular Epidemiology Unit

**Abstract:** Meta-analysis of individual participant data (IPD) from multiple prospective studies enables better standardised and more detailed investigation of risk factor (or exposure)–disease associations, including assessment of their utility for risk prediction, but comes with some operational and methodological challenges. Since 2003, the Emerging Risk Factors Collaboration (ERFC), based at the Cardiovascular Epidemiology Unit, Department of Public Health and Primary Care, has collated IPD from >2.3m participants in 141 prospective studies of cardiovascular disease morbidity and cause-specific mortality. This resource has enabled powerful detailed assessment of the relevance of established and emerging risk factors, as well as some methodological advancement. This talk will describe some approaches used in the ERFC with examples, including assessment of exposure-disease associations with correction for regression dilution, subgroup analysis distinguishing between- and within-study interactions, and assessment of improvements in risk prediction and potential public health impact.

**Speaker:** Stephen Kaptoge is a senior statistician at the Cardiovascular Epidemiology Unit (CEU), Department of Public Health and Primary Care, University of Cambridge, where he has worked since 2005. He is a graduate of the University of Cambridge (PhD Epidemiology 2005, MPhil Statistical science 2000) and University of Nairobi (BSc Mathematics 1998). He has strong interests in applied statistics and epidemiology (principally cardiovascular disease and osteoporosis), which mainly involves meta-analysis of individual participant data in large-scale collaborative studies to assess the relevance of biomarkers, lifestyle, and genetic risk factors to disease, with potential to improve scientific understanding and inform public health. He leads the development and implementation of applied statistical methods for IPD meta-analysis in the CEU.

**Directions:** (From Central Cambridge) Turn right off Hills Road into the Addenbrooke's site then turn left at the hospital roundabout onto Robinson Way. Follow Robinson Way until you see an access road on the left signed 'Forvie Site' (but note that the sign is on your right). Turn into the access road and follow signs - first to the Institute and then to the Large Seminar Room. There is ample car parking. The front doors will be locked at 7:45. Arrivals after 7:45pm can gain admittance by contacting the secretary on 07761769436.

**Provisional Next Meetings:**

25<sup>th</sup> April - David Greenberg (Eastern Cancer Registration & Information Centre).

15<sup>th</sup> October - Mike Bithell (Geography).

25<sup>th</sup> November - James Wason (MRC Biostatistics).

**Supper:** Some members eat regularly in the University Centre before each meeting at **5-45pm**. Feel free to join them.

**Subscriptions:** of 1 pound are now due for attending the 2012-2013 session.

**Secretary:** Peter Watson, MRC Cognition and Brain Sciences Unit, 15 Chaucer Road, Cambridge CB2 7EF; telephone 01223 355294 Extension 801; E-mail [peter.watson@mrc-cbu.cam.ac.uk](mailto:peter.watson@mrc-cbu.cam.ac.uk)

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