

THE
Flexner
DISCOVERY
LECTURE SERIES

SPONSORED BY:
THE OFFICE OF PERSONALIZED MEDICINE

PROFESSOR SIR RORY COLLINS

SIZE MATTERS:
THE NEED FOR LARGE-SCALE POPULATION STUDIES

APRIL 4, 2013
4:00 P.M.
208 LIGHT HALL

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Flexner
DISCOVERY
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Upcoming Discovery Lecture:

LEE HARTWELL
Arizona State

April 11, 2013
208 Light Hall / 4:00 P.M.

VANDERBILT  UNIVERSITY
MEDICAL CENTER

SIZE MATTERS:

THE NEED FOR LARGE-SCALE POPULATION STUDIES

Scientists have known for many years that our risks of developing different diseases are due to the complex interplay of different factors: our lifestyle and environment; our personal susceptibility; and the play of chance. But, despite this longstanding awareness, a clear picture of the combined effects of different factors on the risks of different diseases in different circumstances is yet to emerge. For the comprehensive and reliable quantification of the combined effects of lifestyle, environment, genotype and other exposures, prospective studies have a number of advantages. As well as allowing effects on a wide range of different conditions to be studied, exposures can be assessed prior to disease development, which avoids recall bias and allows investigation of factors that might be affected by disease processes and treatments, or an individual's response to developing some condition. Prospective studies are also able to assess those conditions that cannot readily be investigated retrospectively and can include all cases that have high fatality rates. Cohorts to date have typically been characterised by small numbers of disease cases (which may yield unstable estimates due to random variations), incomplete or inadequate measures of potential risk factors (which may yield systematic under-estimates of disease associations) and incomplete or inadequate measures of confounding factors (which may yield over- or under-estimates). Consequently, to help assess the main causes of various chronic diseases quantitatively, there is a strategic need to establish some large prospective studies of well phenotyped individuals, with prolonged and detailed follow-up of cause-specific morbidity and mortality.



PROFESSOR SIR RORY COLLINS

PROFESSOR OF MEDICINE AND EPIDEMIOLOGY

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**PRINCIPAL INVESTIGATOR/CHIEF EXECUTIVE,
UK BIOBANK**

In 1985 Rory Collins became co-director, with Professor Sir Richard Peto, of the University of Oxford's Clinical Trial Service Unit & Epidemiological Studies Unit (CTSU). In 1996 he was appointed Professor of Medicine and Epidemiology at Oxford, supported by the British Heart Foundation. He became Principal Investigator and Chief Executive of the UK Biobank prospective study of 500,000 people in September 2005. His work has been in the establishment of large-scale epidemiological studies of the causes, prevention and treatment of heart attacks, other vascular disease, and cancer. He was knighted in 2011 for his services to science.
