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CAMBRIDGE SOCIETY FOR THE APPLICATION OF
RESEARCH

'INFLAMMATION AND HEART DISEASE'

(or why cholesterol is only part of the story)

Dr David Grainger

Senior Research Fellow, British Heart Foundation,
Principal Investigator, Inflammation Research and Therapy Laboratory
Cambridge University Department of Medicine

Monday, 29th November, 2004; 7.30 - 9.00 p.m.

The Wolfson Lecture Theatre, Churchill College, Cambridge

Chair and Vote of Thanks:

This evening's session will be Chaired by Derek Burke; The Vote of Thanks will be proposed by Professor Laurie Hall, FRS (Can). Both are *fully paid up* members of the CSAR!!

About the Lecture: (Dr Grainger writes.....)

"We have known for more than a century that cholesterol deposited into the blood vessel wall contributes to the development of heart disease. Since the early 90s we have been able to reduce the incidence of heart attacks by up to a third through the widespread introduction of cholesterol lowering drugs. For almost as long, the importance of inappropriate blood clotting has also been recognised, and the benefits of taking aspirin to reduce this propensity to clotting is well understood, not just by the medical community but also by the wider public. Yet despite these great strides in preventing heart attacks, very nearly 40,000 premature deaths in the UK were still attributed to heart disease in 2002.

Research as recently as the last decade has uncovered the importance of a third major pathway, arguable as important as cholesterol deposition and exuberant clotting: inflammation. White blood cells, the body's defence against infection, can contribute to the development of heart disease in ways which were never considered until the last few years. Dr Grainger will describe the research which uncovered this "third pathway", as well as his own very personal challenge to identify the molecules which control this cardiovascular inflammation. Ultimately, this research finds application in the design of new anti-inflammatory therapies which will one day join aspirin and the cholesterol-

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The CSAR Council is chosen to represent leading scientists and technologies from academe and industry

lowering drugs at the forefront of the cardiologists medicine cabinet. Will their widespread use finally displace heart disease as the number one killer in the Western world?"

About the speaker:

David Grainger graduated from Magdalene College, Cambridge University in 1989 and went on to study for a Ph.D. under the supervision of Profs. Jim Metcalfe and Peter Weissberg in the Department of Biochemistry, University of Cambridge. He is a British Heart Foundation Senior Research Fellow, and the principal investigator of the Inflammation Research and Therapy group in the Department of Medicine, Cambridge University, based at Addenbrooke's Hospital. This unit primarily researches into the role of inflammation in cardiovascular disease, with particular focus on cytokines and signaling molecules. The work of the group has been published in *Science*, *Nature* and *Nature Medicine* and includes the development of several new anti-inflammatory drugs which have been licensed by Cambridge University to the pharmaceutical industry.

In 2003, Dr. Grainger was also appointed as Director of the newly formed Translational Research Unit at Papworth Hospital NHS Trust, which aims to translate aspects of basic science, such as diagnostic tests based on metabonomics, into tangible benefits for patients. In addition to his academic interests, Dr Grainger acts as a scientific advisor to a range of biotechnology and pharmaceutical companies in the UK, Europe and USA. He is also Executive Director of three small biotechnology companies in the Cambridge region, including FingerPrint Diagnostics Ltd, which was recently established to commercialize medical diagnostic tests based on high data density analytical techniques such as genomics, proteomics, immunomics and metabonomics.

The Organising Secretary adds:

Well, heart disease is a subject in which we all take a keen interest. David Grainger's work somewhat flies in the face of accepted wisdom; that diet and lifestyle (and genetics) are the key factors in ones' risk of cardiovascular disease. Seemingly, this is only half the story; we shall learn more!

Coffee and biscuits available, as usual, in the foyer from ~7.00 p.m.

Best

Richard Freeman
CSAR Organising Secretary