



Cambridge Society for the Application of Research

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Genomes, Structural Biology and Drug Discovery: What Can Academia Contribute?

Professor Sir Tom L Blundell,
Department of Biochemistry, University of Cambridge,
Tennis Court Road, Cambridge CB2 1GA

7.30 p.m., Monday 23rd May, 2011

WOLFSON LECTURE THEATRE, CHURCHILL COLLEGE
Storey's Way, Cambridge

Professor Blundell writes:

"The knowledge that is now emerging from genomics of man and pathogens and from biochemical and structural biology programs has the potential to accelerate drug discovery.

Genome sequences, and most recently non-synonymous single nucleotide polymorphisms and somatic mutations, when taken together with structural and functional information on the gene products, can provide insights into the relationship of human genetic variation and disease. This is also helpful in identifying new targets for drug discovery; it is an exploration of biological space.

High-throughput biophysical and structural analyses can be used to investigate the chemical molecules that proteins might bind; this is an exploration of chemical space. I will argue that this is best achieved by structure-guided and fragment-screening techniques, which inform not only lead discovery but also optimization of candidate drug molecules.

My lecture will describe a multidisciplinary approach with physical, computational, chemical and biological techniques. I will describe recent developments both identifying targets and in making new medicines in academia through research programmes funded by the Gates Foundation, Wellcome Trust and EU, co-funded by collaborations with big pharma and through forming a spin-out company (Astex) from our Cambridge lab. I will discuss applications in HIV, cancer and TB"

About the speaker:

Professor Sir Tom Blundell, FRS, FMedSci is Professor Emeritus and Director of Research in the Department of Biochemistry at the University of Cambridge, where he was Sir William Dunn Professor and Head between 1996 and 2009, and Head of the School of Biological Sciences from 2003 to 2009.

Professor Blundell's research interests in the molecular architecture of living organisms have been focused on molecular and structural biology of growth factors, receptor activation and signal transduction, important in cancer and other diseases. He also has developed extensive software for structural bioinformatics that is used worldwide in academia and the biotech and pharmaceutical industries.

After research and teaching positions in Oxford and Sussex Universities, he was appointed in 1976 Professor in Birkbeck College, University of London and in 1989 Honorary Director, Imperial Cancer Research Fund Unit of Structural Molecular Biology. He was Director General of the AFRC from 1991 to 1994, the founding Chief Executive of the research council BBSRC from 1994 to 1996 and from 2009 took over as Chair, BBSRC. From 1998 until 2005 he was Chairman of the Royal Commission on Environmental Pollution. Since 2007 he has been Deputy Chair Trustees of ICR.

Professor Blundell has been a non-executive director and chairman of the science advisory board of UCB Celltech, he advises MedImmune, Syntaxin and Isogenica working on design of therapeutic molecules. In 1999 he co-founded Astex Therapeutics, a company that makes cancer medicines and has several in clinical trial. He is currently a non-executive director and Chair of the Science Advisory Board of Astex.

The Organising Secretary adds....

Professor Blundell is a former member of the CSAR Council. In April 2001 he gave us an excellent lecture on "Crystals, Drug Design and X-Rays". Now is our chance to see how far the science has progressed over the past ten years.

Coffee and biscuits are will be available in the Wolfson Foyer from around 7pm until the start of the lecture.

Best Regards

Richard Freeman

Organising Secretary

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