Key Speakers at This Year's Annual Conference

ASE President, Sir Alan Jones

Alan joined Toyota Motor Manufacturing (UK) Limited at its inception in 1990 as Manufacturing Director and became Toyota's first local Managing Director in April 2001.

In June 2003, Alan was named the first overseas Managing Officer of Toyota Motor Corporation Japan, Executive Vice-President Manufacturing Group at Toyota Motor Europe and Chairman of Toyota Motor Manufacturing (UK) Limited.

Currently he is Senior Executive advisor to Toyota Motor Europe and Chairman Emeritus of Toyota Motor Manufacturing (UK) Limited.

Previously, he was a founding Director and then Chairman of the SMMT/SBAC Industry Forum, a company focused on Business efficiency improvement and sustainability.

In April 2006 he took responsibility for the Chairmanship of Semta (Science, Engineering, Manufacturing, Technologies Alliance). Alan is also the Employer Champion for 14-19 Diplomas and an Apprenticeship Ambassador.

Alan believes UK industry and its total supply base can improve their worldwide competitiveness from a platform of shop floor excellence and technical development, based on progressive education and training with a strong science engineering focus.

ASE Keynote Science Education Lecturer, Professor Sir Alec Jeffreys

Prof. Sir Alec Jeffreys studied biochemistry and genetics at Merton College, Oxford. Following an EMBO Postdoctoral Fellowship at the University of Amsterdam where, with Dr Richard Flavell, he was one of the first to discover split genes, he moved in 1977 to the Department of Genetics at the University of Leicester where he currently holds the positions of Professor of Genetics and Royal Society Wolfson Research Professor.

Sir Alec's research at Leicester has focussed on exploring human DNA variation and the mutation processes that create this diversity. He was one of the first to discover inherited variation in human DNA, then went on to invent DNA fingerprinting, showing how it could be used to resolve issues of identity and kinship. His current work concentrates on developing new approaches to analysing variation and mutation in human chromosomes.

Sir Alec's work has received widespread recognition, including his election to the Royal Society in 1986 and a Knighthood for services to genetics in 1994. Other awards include the Louis-Jeantet Prize for Medicine (2004), the Lasker Award (2005) and the Heineken Prize (2006). He was also one of the four finalists for the Millennium Prize in 2008.

Earth ESTA/ESEU Keynote Lecturer, Professor Bob Spicer

Bob Spicer is Professor of Earth Sciences in the Department of Earth Sciences at the Open University where he is Founding Director and current Chair of the Centre for Earth, Planetary, Space and Astronomical Research, having previously been Head of the Department of Earth Sciences.

As well as a strong commitment to teaching and research, Bob has been academic consultant to many TV programmes concerning climate change, including the "Climate Chaos" season across the BBC Network. Individual TV programmes on which Bob has advised include "Meltdown" presented on BBC 2 by Paul Rose; eight shorts related to climate change, "Some Like it Hotter", "Snow Patrol", "Killer Lakes", "Corking Sunshine", "Glacial Retreat", "Savage Heat", "Northern Melt", and "Shifting Shoals" and "Climate Controversies" presented on BBC 4 by Ian Stewart.

Bob's main research interests cover the evolution of high latitude and polar vegetation and climate, particularly when the Earth was much warmer, during the Mesozoic. His work focuses on the geological records of Alaska, Russia, Australia, New Zealand and Antarctica, where he has carried out extensive fieldwork. The research provides data for global climate modelling and has important implications for global change studies.

He is also involved in a large computing project (climateprediction.net) funded by government agencies and several commercial partners. The project conducts large scale forecasting of future climate change using the Hadley Centre model configured to run on desktop PCs.

Bob speaks powerfully on the topic of climate change on the basis of this experience and is an important voice in the current climate change debate.

The John Lewis Lecturer, Dame Professor Jocelyn Bell Burnell

Jocelyn is a visiting professor at the University of Oxford and a Professorial Fellow at Mansfield College, Oxford. She has filled a wide range of teaching, research and managerial roles in her career. She was Dean of Science at the University of Bath, Professor of Physics at the Open University, and has also worked at Princeton University, USA, at the University of Southampton, at University College London and at the Royal Observatory in Edinburgh.

Jocelyn's academic career started with a physics degree from Glasgow University, followed by a PhD from the University of Cambridge in Radio Astronomy. It was during her time at Cambridge that she was involved in the discovery of pulsars, opening up a new branch of astrophysics – work which was recognised by the award of a Nobel Prize to her supervisor. For many years subsequently she worked part-time while raising a family.

One of the tenets of the Institute of Physics – public appreciation and understanding of science – has always been important to Jocelyn, as has her wish to encourage more women to consider a career in science. Her first appointment to a professorship doubled the number of female professors of physics in the UK, and she became the first female President of the Institute in October 2008.

She has received many honours for her scientific research and for engaging the public. She is a Fellow of the Royal Society and a Foreign Member of the US National Academy of Sciences; she was made a CBE in 1999 and a Dame in 2007.

The Nuffield Lecturer, Professor Jim Al Khalili

Born in Baghdad in 1962 to an Iraqi father and English mother, Professor Al-Khalili studied physics at the University of Surrey. He graduated with a B.Sc. in 1986 and stayed on to pursue a Ph.D in nuclear reaction theory, which he obtained in 1989. In that year he was awarded a Science and Engineering Research Council (SERC) postdoctoral fellowship at University College London. He returned to Surrey in 1991, first as a research assistant then lecturer. In 1994, Professor Al-Khalili was awarded an Engineering and Physical Sciences Research Council (EPSRC) Advanced Research Fellowship for five years, during which time he established himself as a leading expert on the structure of neutron halo nuclei. He currently holds an EPSRC Senior Media Fellowship.

Professor Al-Khalili is now a professor of physics at the University of Surrey where he also holds a chair in the Public Engagement in Science. He is a Trustee and Vice President of the British Science Association. He is author of several popular science books and appears regularly on radio and television. In 2007, he was awarded the Royal Society Michael Faraday Prize for Science Communication.