

Bristol Scientific Club: Meetings 2012-2013

(1) Friday, 21 September 2012

Dan Kells: "Black Metal in Action"

Our guest speaker, Dan Kells is the Research Manager at the National Composites Centre, which was established as a result of the 2009 UK Composites Strategy, and is an open access, industrial scale, state-of-the-art development facility with a mission to become a World Leading Centre for Excellence, Collaboration and Innovation in Composites.

Located in purpose built premises on the new Bristol and Bath Science Park, the NCC boasts a 5,500m² workshop equipped together with an experienced design and manufacturing team. The Centre is hosted by Bristol University and is working with many established users of advanced fibre composites in the aerospace and related industries.

Whilst, the use of high performance fibre reinforced composites in aerospace has been well proven over the past 40 years, their potential in a wide range of more general engineering has not been realised. As part of its remit within the Government's High Value Manufacturing Catapult, the Centre is developing a range of composite components to demonstrate the considerable design and manufacturing opportunities.

The substantial size of the facilities enables the Centre to design and manufacture true industrial scale demonstrators which can be readily exploited by UK industry.

This presentation will describe the operation of the Centre and, through the use of case studies, the new developments in manufacturing, automation and design which make composites the material of the future.

Note that a visit to the Composite Centre has been arranged for October 18th (details enclosed).

(2) Saturday, 13 October 2012

Roger Moses: "A Thin Hard Rain from Space - the Hundred Year Story of Cosmic Rays"

Cosmic radiation is still in some ways as mysterious as when it was discovered, a century ago. Some individual particles have enough energy to boil a kettle and take about a month to cross the Universe. The radiation dose they give is a major hazard to space travellers and a minor risk to both crew and electronics in high-flying aircraft. Notwithstanding the above, it is probable that it is essential to the development of life, being the one of the causes of spontaneous mutations in living cells.

This talk (supported by a demonstration, maybe!) will cover the history of our knowledge of this fascinating topic, from Viktor Hess' pioneering balloon flight of 1912 to the latest space and ground observations.

(3) Saturday, 24 November 2012

Eric Albone: “The UK-Japan Young Scientist Workshop Programme; Learning Lessons for Education ?”

Clifton Scientific Trust’s UK-Japan Young Scientist Workshop programme has been running in Britain and Japan since 2001, the last three years hosted at the University of Cambridge. Post-16 students and teachers from schools in Britain and Japan live together for a week in a University and work in small teams with a wide range of scientists and engineers, toe-dipping cutting edge areas of scientific/ engineering exploration which are usually quite new to them. At the end of the week, they give short team presentations of their achievements in front of an audience including invited guests.

Why were these workshops initiated - and what is achieved in so short a time?

Why do they have so great an impact on the students involved, both British and Japanese - and what can be learnt about engaging young people meaningfully with science and engineering, from their success?

I have learnt loads, not just about science but an awareness of the world

UK student, Bristol Workshop, 2001

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(4) Friday, 8 March 2013

Peter Marshall: “The Fukushima Accident”

This talk will examine the causes and consequences of the Fukushima Nuclear Power Plant accident of March 2011.

Topics examined will include operation of the reactors, earthquake development, tsunami formation, subsequent reactor damage, population consequences, cold shutdown of the four damaged reactors, and finally a summary of the current position.

(5) Saturday, 20 April 2013

Paul Smith: “Chaos, Freedom & Choice”

The presentation consists of a gentle look at some well-known chaotic systems (hopefully with the occasional practical demonstration) and how such predictive uncertainty may influence ideas concerning the “Human Condition”.

(6) Friday, 14 June 2013

Mark Eisler + A N Other: “Badger-Bovine Tuberculosis Issues”

Prof Mark Eisler of the Bristol Veterinary School is our guest speaker on this occasion. The intention is to have a debate format, but it is too soon to name who he would ask to speak with him. This promises to be an interesting and stimulating evening – with audience participation.