

As places are limited please book your place as soon as possible.

To reserve your place or request further details please e-mail

**Andrea Fesmer**

IOP Teacher Network

Co-ordinator for North Wales

at [andrea.fesmer@talk21.com](mailto:andrea.fesmer@talk21.com)

The conference is **free** for anyone who teaches physics at any level or who is interested in physics education.

The meeting will be held at

Trefenai  
The College of Education and  
Lifelong Learning  
Bangor University  
Normal Site  
Bangor  
Gwynedd  
LL57 2PZ

## Programme

09.45 – 10.15 Registration and coffee

10.15-10.20 **Welcome**

by Prof Janet Pritchard  
Bangor University

10.20 – 11.05 **Lecture 1: Images of the Universe**

by Prof Mike Bode, Director ARI and  
Professor of Astrophysics  
LJMU Astrophysics Research Institute,

11.05 – 11.50 **Lecture 2: When the lights go out: Power to the people**

by Prof Maxwell Irvine,  
University of Manchester.

11.50 – 12.00 **News slot**

(details of events and resources)  
Andrea Fesmer

12.00 -13.00 **Lunch and view displays**

Displays confirmed from  
Daresbury Labs / STFC  
Institute of Physics  
National Schools' Observatory  
Careers Wales  
Voluntary Services Overseas

13.05 – 14.05 Session 1

Select one from those available overleaf.

14.10 – 15.10 Session 2

Select one from those available overleaf.

15.10 – 15.30 Plenary 'Any Questions?'  
and evaluation  
Andrea Fesmer

15.30 – 16.00 Coffee

**IOP** Institute of Physics | Sefydliad Ffiseg

**A teachers' conference  
for all who teach  
physics**

**To be held at  
Bangor University  
College of Education**

**Tuesday 2<sup>nd</sup> June 2009**

**Cost:free**



## Morning Lectures

### Images of the Universe

Modern astronomy provides stunning images of objects in the heavens. This talk will use these to explore the scale and content of our Universe from the nearby Solar System to the most distant parts of the Cosmos. Along the way, we will discuss how images taken at different wavelengths aid our understanding of what's "out there" and also what the big questions are that remain to be answered. Prof Michael F. Bode - Director ARI and Professor of Astrophysics, LJMU Astrophysics Research.

### WHEN THE LIGHTS GO OUT: power to the people

The UK generates 75% of its electricity by burning gas and coal, 20% from nuclear power, 2% is hydroelectricity and the remainder from the developing renewable sources, principally on shore wind and biomass cofired with coal. We have virtually exhausted our domestic supply of gas. We import two thirds of our coal. New emission legislation will close half our old coal stations within the next 5 years. Our first generation nuclear plant is all closed for decommissioning. Our second generation nuclear plants will begin to close within the next five years. There are doubts that renewable energy resources will be able to fill the generating gap in the time available. If we are to exploit the wind waves and tides we will require an enormous investment in infrastructure to deliver power to the consumer. Prof Maxwell Irvine- Manchester University

## Afternoon Sessions

<b>Virtual Physical Lab</b>	<b>Practical assessment in Physics at A2 level</b>	<b>Exploring the Universe</b>	<b>The Power of Light</b>	<b>Rocket Workshop</b>
Dr John Nunn National Physical Lab	Steve Evans Principle examiner for the WJEC	Dr Chris Leigh The National Schools' Observatory	Alan Brown Daresbury Laboratory	Gary Williams IOP Teacher Network

### The Virtual Physical Laboratory (1hr) Available session 1 and 2

The Virtual Physical Laboratory (now in version 6) is a library of over 200 simulations designed to help to teach and learn physics. The resource covers nearly all the topics taught between Key stage 3 and 1st yr University. The workshop will be a quick tour of some of the simulations to give a taster of what it is, and how it can be used. Although the VPLab is copyright material (Normal price £150), the National Physical Laboratory and the Institute of Physics are sponsoring the resource within the UK. Teachers attending the demonstration will be given access to a complimentary copy of the software for use in their schools.

**Dr John Nunn** is a Senior Research Scientist (physicist) working at the National Physical Laboratory since 87 (with a 3 year break when he taught physics GCSE and A levels in South India). His current research includes properties of advanced materials and Infrared Imaging.

### Practical assessment in Physics at A2 level (1hr) Available session 1 only

This session will look at practical assessment in Physics at A2 level. It will cover the new PH6 assessment format including both the data analysis and the practical test. There will also be an opportunity to work through some ideas for practical work for students to carry out in order to prepare for the exam.

**Steve Evans** is Principle examiner for the WJEC at PH3, practical work at AS and Principle moderator for PH6 practical work at A2 level.

### Exploring the Universe (1hr) Available session 1 and 2

Discover how teachers and their students can explore the Universe from the comfort of their own classroom, using the world's largest fully-robotic telescope. I will be discussing how astronomy can be used as the hook to get your students enthused about science, maths and technology. I will also be showcasing certain tools and free resources available through the National Schools' Observatory (NSO) website that can assist you with the teaching of difficult areas of the curriculum, and provide an exciting and mind-expanding experience for both primary and secondary students.

**Dr Chris Leigh** is the Manager of The National Schools' Observatory part of The Astrophysics Research Institute of Liverpool John Moores University.

### The Power of Light (1hr) Available session 2 only

Apart from switching on the light at home when it gets dark. Have you ever considered how powerful light is. Scientists have used the power of light for many years in Elemental analysis, Astronomy investigations and The structure of Biological materials. See light in action.

**Alan Brown** is the Education & Public Events Officer at Daresbury Laboratory

### Rocket Workshop (2hr) Available for one session that takes up both sessions 1 and 2

Build your very own compressed air "rocket" launcher (well, projectile launcher really). Ideal for science investigations and a wow with children of all ages; including adult-age children! This launcher uses rockets that pupils can make out of paper, there's no charge for the launcher which you can take away when you've built it and there'll also be a CD of resources to use with the equipment.

**Gary Williams** is the National Coordinator, Institute of Physics Teachers Network