

### Introduction

Welcome to Einstein Year! Included with this mailing is a poster of the man himself with a listing of Einstein Year events on the back. There is also information about an International Poster Competition to mark the year. For more details of Einstein Year visit the website <http://www.einsteinyear.org>.

Before going on to the various resources enclosed with this mailing I would like to draw your attention to some resources you should have received last term. I hope you have signed up to the National Schools Observatory and are planning to make some observations this term. You should also have received a Contemporary Physics Education Project poster about Nuclear Physics. Have you put it up? Is it useful? We used the buying power of Affiliated Schools to get a good discount from the Americans who produce it. There are a number of other posters in the series which we could buy for Affiliated Schools if they would be valued; please let me know what you think.

Enclosed with this newsletter is the 2005 synopsis of what the Institute is currently doing for schools and colleges. I hope this will help you to take full advantage of the various resources and support on offer. Please do let us have your feedback on the support we offer schools, to ensure that we are meeting your needs.

Daniel Sandford Smith  
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### Schools Grants Scheme

The Particle Physics and Astronomy Research Council (PPARC) and the Institute of Physics have set up a small grants scheme designed specifically for schools and colleges. The aim is to provide schools with grants of up to £400 for small-scale projects or events linked to the teaching or promotion of physics. This could be used to support a range of projects, for example

- running a school/college based science week activity
- purchasing materials/ resources outside the normal department resources
- organising a visit to or from a working physicist

Projects linked to astronomy, space and particle physics are particularly encouraged. The scheme is open to all UK educational institutions (schools and colleges) catering for pupils/students in the age range 5-18. Applications will be electronic through a simple form. Further details and application form are available on:

<http://teachingphysics.iop.org>

If you need more than £400, try the PPARC Small Awards Scheme ([www.pparc.ac.uk](http://www.pparc.ac.uk)) which can offer up to £15,000.

### Careers

One of the most important functions of the Institute is to promote physics to young people. We hope that the enclosed material- Independent Supplement, How Far with Science leaflet, Careers Poster and Careers postcards- will help you to promote physics to your students. We have enclosed two copies of each item so that you can deposit one in the careers library. Affiliated Schools are entitled to request as many copies of any of these resources as they require for open evenings, etc.

### Practical physics website

The practical physics website <http://www.practicalphysics.org/> is growing in size. The next stage is to ensure that it reflects current best practice as well as the wisdom of the past. If you have any suggestions for how we can improve the site or, even better, if you

have a contribution please complete one of the enclosed pre-paid cards and return it to the Nuffield Foundation.

### **Physics Update**

These are two-night/three-day residential courses for physics teachers. The lecture component of the programme is devised to update participants on innovations in physics, both pure and applied, and in curriculum matters. "Hands-on" workshops afford teachers opportunities to try new equipment, develop IT skills, learn new experimental techniques, try out novel investigations and engage with alternative teaching and learning strategies. The courses are located in pleasant surroundings with good accommodation, and are subsidised by the Armourers and Brasiers Company in association with Alcan Aluminium Ltd, and by the Institute. The course will cost £70 for a non-residential and £130 for a residential place but there is a discount for Affiliated Schools.

Future courses

- 8<sup>th</sup>-10<sup>th</sup> April 2005                      Royal Holloway, Surrey
- 8<sup>th</sup>-10<sup>th</sup> July 2005                      University of Leicester

Contact: Leila Solomon, [leila.solomon@iop.org](mailto:leila.solomon@iop.org)

### **'Residential Summer School for Physics Teachers'**

The purpose of this annual summer school is to bring together physics teachers from across Scotland to give them scope to discuss contemporary issues on physics and physics education. By providing a forum for teachers to meet, share, discuss and enjoy physics together, the summer school aims to draw physics teachers into the wider group of professional physicists, helping teachers to feel that they are part of the physics community, and from this, to enrich their work as school-based physics educators.

- 27<sup>th</sup> June – Friday 1<sup>st</sup> July 2005, University of Glasgow

Contact Details: [lucy.murray@physics.gla.ac.uk](mailto:lucy.murray@physics.gla.ac.uk)

### **Stirling Physics Meeting**

The largest meeting of the physics teaching community in the UK. A mixture of information, stimulation and communication that will bring you into contact with the latest thinking and with colleagues from throughout Scotland. This popular one-day event provides not only updating but also an informal forum for discussion of strategies and policies regarding science and physics education in Scotland.

- Wednesday 1<sup>st</sup> June 2005, University of Stirling

Contact Details: [leila.solomon@iop.org](mailto:leila.solomon@iop.org)

### **The Rugby Meeting**

The Institute's Schools' Physics Group organises a one-day meeting each year in early June, at Rugby School. Physics teachers attend to find out about current issues and new developments in physics teaching.

- 9<sup>th</sup> June 2005 Rugby School.

Contact Details: [leila.solomon@iop.org](mailto:leila.solomon@iop.org)

### **Advancing Physics INSET for Technicians**

Featuring workshops led by experienced AP technicians, the course covers practical activities, with a focus on construction. It is also a valuable opportunity to meet colleagues from other schools and ask questions of the tutors. There is a discount for Affiliated Schools.

- Thurs 7<sup>th</sup> July University of Birmingham

See <http://advancingphysics.iop.org/technician/index.html>

## **Advancing Physics INSET for Teachers**

Our INSET for teachers new to the Advancing Physics course will cover all aspects of teaching and learning, including a session on coursework. Courses will take place at Birmingham University's Physics Department on the following dates:

- Introduction to AS - Tuesday 5<sup>th</sup> July 2005
- Introduction to A2 - Wednesday 6<sup>th</sup> July 2005

Special rates are available for early bookers and Affiliated Schools.

See <http://advancingphysics.iop.org/teacher/index.html>

## **Preparing for Salters Horners Advanced Physics**

Each year, the project team at York runs a programme of residential in-service workshops for SHAP teachers and technicians. Participants find out about, and discuss aspects of, teaching and managing the SHAP course, try out some of the more novel practical and IT activities found in SHAP, and work with experienced SHAP teachers and technicians. The teachers' workshops also have some input from SHAP examiners. All the workshops take place on campus at the University of York.

Dates for 2005 are given below. Full details and booking forms are available on the SHAP website: <http://www.york.ac.uk/org/seg/salters/physics/> Choose 'support' from the menu on the home page, and follow the links to 'residential courses'.

- |                             |                  |      |
|-----------------------------|------------------|------|
| • Technicians               | Apr 14 2005      | York |
| • Preparing to teach the A2 | Apr 18 - 20 2005 | York |
| • Preparing to teach the AS | Jul 13-15 2005   | York |

## **School and Colleges Lecture Series 2005:**

### **Our Planet – Our Future**

"Our Planet - Our Future" looks at the ways in which science and technology are helping us to understand the impact that human life has had on the planet. Exciting demonstrations will be used to bring the material to life and will incorporate cutting-edge research and technology. The audience will be personally involved in deciding the content of the lecture, through use of an interactive choose-your-own-lecture format. Audience members will also have the opportunity to vote on the best solutions to ensure that we can plan for a healthy and happy future here on Earth. For details of dates and venues visit <http://teachingphysics.iop.org>

### **Lab in a Lorry**

An interactive mobile physics laboratory with one simple aim: to enthuse the next generation of world-class scientist and engineers. Staffed by volunteer practising physicists and engineers, Lab in a Lorry gives young people the opportunity to do experimental physics in the way it actually happens; exploratory, accidental, informed by curiosity and intuition. Lab in a Lorry is about expressing curiosity and creativity with the long-term aim of cultivating bright, inquisitive and resourceful students. Year round the Lorries will tour the UK and Ireland - visiting schools, festivals, shopping centres, major sporting events, and other community activities. Contact [www.labinalorry.org.uk](http://www.labinalorry.org.uk) or [labinalorry@iop.org](mailto:labinalorry@iop.org) for more information.

### **The National Particle Physics Masterclasses**

2005 is the 9th year of these popular events for Sixth Form students and their teachers. They will take place at universities and laboratories across the UK in March and April. The classes provide excellent support for the material on Particle Physics which is in many AS and A2 courses.

The programme will include talks by particle physicists which convey some of the excitement of working in a rapidly-moving field, where current experiments include a close study of antimatter and the search for the origin of mass. As well as hearing talks from scientists who work in the field, students will gain hands-on experience of

the interactive graphical display programs that particle physicists use at the European Laboratory for Particle Physics, CERN, using software specially written for schools. Details of this year's programme are at <http://www.innotts.co.uk/morrison/masterclass.htm>

### **Advancing Physics AS Revision Road Show 2005**

Following the success of last year's event, the Advancing Physics Road Show will visit three Universities in 2005.

- University of Bristol - Tuesday 12<sup>th</sup> April
- University of Leeds - Wednesday 13<sup>th</sup> April
- University College, London - Wednesday 20<sup>th</sup> April

The day sets out to summarise the entire AS Advancing Physics course using interactive lectures. With demonstrations and PowerPoint animations to illustrate the key areas, it paints the broad picture of the course, allowing students to target their revision during the weeks up to their exams.

There will also be an opportunity to ask questions of a panel of examiners, university staff and experienced physicists. As part of the day, accompanying teachers will be able to attend a "New Ideas" session focusing on practical demonstrations for the classroom.

The cost of the day is £20 per student, to include refreshments, lunch and a student revision handbook. This also includes a copy per student of the AS/A2 Revision CD-ROM. Accompanying teachers are free. For more information see <http://advancingphysics.iop.org/teacher/roadshow.html>

### **Physics Teacher Network**

This newsletter would have been twice the size if it included all the activities that are being run by the Physics Teacher Networks across the UK. For example;

- Sept.10<sup>th</sup>-11<sup>th</sup> 2005 - Residential Physics Teachers' Conference at The University of Birmingham - more details, incl. feedback from 2003 at [www.ph.bham.ac.uk/prospective/schools/teacherevents.htm](http://www.ph.bham.ac.uk/prospective/schools/teacherevents.htm)
- 'GCSE Forces and Motion Revision – for science students' – School of Education, Leeds University, Thursday 14 April 2005
- "Cosmic fingerprinting" a lecture for post-16 students about our understanding of the nature of light. At the King's School in Grantham, pm Tuesday 8<sup>th</sup> March 2005.  
Contact [petebell@em-physicsteachernet.org.uk](mailto:petebell@em-physicsteachernet.org.uk)

However, those of you in Cork might not want to know about an event in Aberdeen so rather than produce a complete listing of all the network activities, we are going to start producing regional newsletters with information about local events, courses and places of interest. The newsletters will be produced by Regional Co-ordinators. Most of the Regional Co-ordinators are practising physics teachers who undertake the necessary work in their own time. They are keen to be responsive to local needs, so find out about your local co-ordinator by visiting <http://teachingphysics.iop.org> and making contact.