

Introduction

Welcome to 2007 and a new name on this newsletter. I have just joined the Education department and will be responsible for the newsletter from now on. As mentioned in the October newsletter, we are intending to produce an enhanced version of this called *Physics Education in the Classroom*. This should include more news and reviews relevant to all UK and Eire schools and colleges, as well as resources and ideas for teaching. There will also be a greater focus on the 11-16 age range. Look out for this new resource coming into your school later this spring. If you would like to contribute in any way or have any particular requests or suggestions for items to be included, please contact me at clare.thomson@iop.org.

The following items are enclosed with this newsletter:

- *Are you a good scientist?* (affiliated schools only) The pack contains a poster and quiz that are designed to stimulate discussion about ethical behaviour in science. It is hoped that this resource will be useful in preparing students for courses where there is a focus on understanding the processes of science, such as the new GCSE's. It may also be useful in helping students to understand the importance of behaving ethically in terms of their own work. The quiz will be available in Word and PowerPoint form on the Institute website in case you want to amend the questions yourself.
- A new set of four posters illustrating careers that use physics: *Physicists predict, protect, save and inspire*. These A2 posters each feature an individual scientist in their working environment, with brief quotations on the significance and impact of their work. We would welcome any feedback on these posters as well as any suggestions for future series.
- A leaflet, *Thinking about physics*, with information about studying physics at all levels and bursaries for first degree courses.
- A DVD of the 2006 IOP Schools and Colleges' Lecture: *Gravity, Gas and Stardust* with one set of 3D glasses to view some of the images. This lecture, given by Dr Pete Edwards, takes its audience on a journey through the cosmos, exploring some of the latest results from the world of astronomy and what they reveal regarding the birth, life and death of our universe. The show includes demonstrations, stunning images and 3D movie clips to uncover the evidence for the birth of the universe in a Big Bang and explore its structure.
- A leaflet advertising the 2007 Schools and Colleges' lecture – *Light Fantastic: the Science of Colour*, presented by Dr Pete Vukusic. This lecture is aimed at 14-16 year olds and will open pupils' eyes to the basic concepts of light and colour to show how technology is making the most of light's astonishing properties. Details of venues and dates are on the reverse side of the leaflet.
- A 2007 wall planner that shows various important anniversaries in physics. This might be a useful source of ideas for homework.
- A leaflet advertising *Space School 2007* at the University of Kent.

- *Just the Job* – a leaflet with information about careers in medical physics, engineering and technology. For further information or more copies of the leaflet, contact the Institute of Physics and Engineering, e-mail: office@ipem.ac.uk

Those of you working in England may be aware that QCA is reviewing the KS3 curriculum for 2008 (the rest of you can feel grateful that you don't!). We are expecting a consultation to take place in February; details will appear on the QCA website: www.qca.org.uk. The Institute will be using this consultation to reiterate its concern that it would be inadvisable to reform of KS3 so soon after the introduction of radical changes at GCSE, and at the same time as changes in A-level specifications. I hope that if you get the chance you will make your views known. We will be circulating the Institute's response on the PTNC email list as soon as possible after the consultation starts. We would be very interested to know your views on the proposed changes.

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NEWS

Girls in Physics

The Institute recently published a review of the research into why more girls do not study physics post-16. The report is available online in the "making a difference" section of the Schools and Colleges web pages, under "policy". A guide suggesting how teachers might act on the findings of this research has also been published. This will be sent to all mixed and girls' schools early in 2007, so do keep an eye open for it. Many of the suggestions would apply to teaching boys as well as girls. If you do not teach girls, but would like a copy of the report, please contact Gita Tailor: gita.tailor@iop.org.

Engineering Development Trust (EDT)

EDT's mission is to encourage young people to fulfil their potential through careers in science, engineering and technology. There are four work-related learning programmes for 13-21 year olds, bringing companies and universities together with schools and students to work on real projects:

Go4SET – which links teams of six Year 9(England)/Year 2 (Scotland) pupils with companies and universities to offer an 8 week SET experience. See www.go4set.org.uk

Engineering Education Scheme (England) – which links teams of four Y12 students and their teacher with local companies to work on real scientific, engineering and technological problems with exciting outcomes. See www.thescheme.org.uk

Headstart – this is a well established programme held in the summer at 30 universities providing Year 12/S5 students interested in mathematics or science with informed choices regarding technology-based degree courses and careers. See www.headstartcourses.org.uk

The Year in Industry – this provides paid, degree-relevant work placements for students in a year out before or during their degree course. See www.yini.org.uk.

UCAS Higher Education Conventions

The Institute of Physics will have a presence at the following dates and venues:
 Manchester 28 Feb - 1 March 2007
 Exeter 21–22 March 2007

Canterbury 24–25 April 2007
Tyneside 3 May 2007
London (Olympia) 6 July 2007

Revision of Advancing Physics

A series of teacher consultation meetings are being held across the country where you will have the opportunity to hear more about, and to discuss, the changes with the project director, project manager, a member of the technical team and the examining and assessment team.

Dates and venues are as follows:

- Monday 5 February. Discovery City Learning Centre, Wirral.
- Tuesday 6 February. IOP Publishing, Dirac House, Bristol.
- Wednesday 7 February. Physics Department, University of Birmingham.
- Thursday 8 February. The Institute of Physics, Portland Place, London.

All meetings are free of charge and start at 12 noon, with lunch provided, and should finish no later than 4.30 pm. To reserve your place, contact evie.palmer@iop.org or call 0117 930 1269. All bookings must be made no later than Friday 26 January.

News from PPARC

With the opening of the Large Hadron Collider later in the year, one of the biggest experiments in the history of science is about to start! Find out all about it with your sixth form at one of the National Particle Physics Masterclasses taking place in March and April. See www.particlephysics.ac.uk/teach.html for details. There are also some PPARC posters included in this mailing. For further copies see their website: www.pparc.ac.uk/pbl/publorderform.aspx.

FORTHCOMING EVENTS

18 – 20 February 2007 Physics in Perspective – Study Course for 6th Formers.

Physics in Perspective is a three-day course for sixth-formers and college students, run each January/February in London, with the purpose of bringing to participants some of the excitement, relevance and fun of physics. It consists of a series of six lectures, or lecture-demonstrations, by eminent speakers and is held at London University colleges. Free time is scheduled in to allow participants an opportunity to explore other aspects of London. Further information can be obtained from Leila Solomon via e-mail: leila.solomon@iop.org

9-18 March 2007 UK National Science and Engineering Week.

Science Week has become Science and Engineering Week. See: www.the-ba.net for more information about running activities and what might be happening in your area. To apply for an IOP/PPARC grant of up to £500 to help with running your event, see: http://teachingphysics.iop.org/teacher_support/schoolsgrants/index.html

26-28 March Salters Horners Advanced Physics (SHAP) – preparing to teach A2. This is a course for teachers at the University of York. For information contact: Sandra Wilmott, slw5@york.ac.uk.

27-28 March SHAP – course for technicians covering AS and A2 at the University of York. Details as above.

30 March – 1 April 2007 Physics Update Course, University of Birmingham.

A two-night / three-day residential course 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 give opportunities to try develop new IT skills, learn new experimental techniques, try out novel investigations and engage with alternative teaching and learning strategies. The course commences on Friday 30 March and finishes at lunchtime on Sunday 1 April. Further information can be obtained from Leila Solomon via e-mail: leila.solomon@iop.org

6 June 2007 Stirling Physics Teachers Meeting, University of Stirling. The programme will comprise short presentations with the usual mix of physics and education, as well as a lecture from one of the frontiers in physics. There will also be an extensive exhibition of new physics equipment. Further details will be circulated to all schools in Scotland in March. For information contact: Leila.solomon@iop.org

7 June 2007 Schools' Physics Group 19th Annual Meeting, Rugby School. A day of presentations, workshops and discussions. For information contact: ChrisAButlin@aol.com

28 June 2007 The Annual Liverpool Physics Teachers Conference, University of Liverpool. Speakers will cover a range of topics interspersed with discussions and hands-on activities. There will also be the opportunity to question a panel of physicists. For information and downloads see <http://www.liv.ac.uk/~iop/PTC/index.html>, or email Dr Steve Barrett: s.d.barrett@liverpool.ac.uk

Things to watch out for in 2007

MODEL

Bringing new and innovative practical work in physics, which is more representative of the techniques used in research and physics based industries. A resource pack of instructions, worksheets and videos will be sent to all affiliated schools during the spring term.

SimPhysics

Interactive computer games that make students use physics to solve problems and win the game. The games have been chosen to support the new GCSEs. These will be available through the Institute website.

Big Bang Blogs - an open website for students - www.bigbangblogs.org

Big Bang Blogs is a new online magazine-style site aimed at students. It will include news stories, hot topics, opinion articles, careers information, polls and much more. The site will grow during 2007. We are trialing an e-mentoring scheme through the site and, for the time being, this is password-protected. However, the main content is freely accessible to all.

Opportunities. We are recruiting someone to coordinate training for non-specialist teachers of physics. Later in the year we will also be recruiting additional teacher fellows to work with universities as part of the Stimulating Physics project. If you are interested in more details please contact Daniel Sandford Smith via e-mail: daniel.sandfordsmith@iop.org