

www.clrc.ac.uk

What do you think of our external website? If you think it's long overdue for a change, then you're not alone. I have been asked by the Management Board to review what we need and come up with proposals for a new site to present our message more clearly to our various audiences and to make the site serve our needs better.

I have been taking advice from many people on what we want to say and how we should present our organisation and will soon be proposing a new layout

(and content) to replace the current one. If you have any bright ideas or strong views, please send me a brief email (putting the letters WWW in the subject field) and I will take them into account
[<wj.curtis@rl.ac.uk>](mailto:wj.curtis@rl.ac.uk)

A lot of work is needed to restructure and revise the contents, but I expect the result to be a gleaming new web site within the next few months. Watch this space!
Jeremy Curtis

CLRC Notices

RAL public lecture
 Invitation for participation in the International Workshop on Advanced Data Storage/Management techniques for High Performance Computing
 Daresbury Laboratory, 25-26 February

The workshop is jointly organised with the European DIRECT project. For registration and up-to-date information please see the conference web page at:
<http://www.dl.ac.uk/TCSC/datanagement/conf2.html>
 or contact Kerstin Kleese at Daresbury Laboratory on 01925 603207 <k.kleese@dl.ac.uk>

DL Notices

DL public lecture

All lectures are held in the Merrison Lecture Theatre at 7pm.

17 February The amazing Albert E Philip Reader

RAL Notices

RAL lectures

All lectures are held in the Pickavance Lecture Theatre at 3pm.

24 February

Physics of materials for the next Millennium
 Prof C Humphreys, Dept of Material Science & Metallurgy, Cambridge

Rutherford Appleton Laboratory Christian Fellowship

God sent His Son!

All meetings are held in Conference Room 1, Building R1 at 12.30pm unless otherwise stated:

- 17 February Mission link
- 24 February Bible study: 1 Thessalonians Ch. 4
- 2 March Meeting for worship and prayer
- 9 March Mission link

You are warmly invited to attend any of the meetings.

For further information, please contact Jonathan Wheeler, R27, ext.51899.



Articles, ideas and letters are very welcome!
Articles to the Editor or Correspondent by 15th of the month.

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LABNEWS

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National Solar physics award

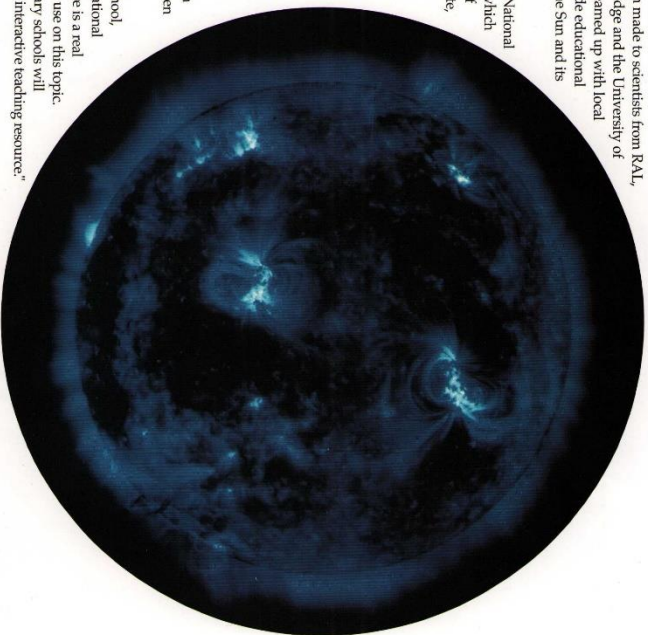
An award of £70k has been made to scientists from RAL, the University of Cambridge and the University of St Andrews, who have teamed up with local science teachers to provide educational material based on the physics of the Sun and its environment.

The money, provided by PPARC's National Award scheme, supports projects which further the public understanding of science, and now will fund a website, CD-ROMs and additional educational material.

"The project will help to inform the public about the UK's many scientific successes in studies of the Sun and its environment", explained project co-ordinator Dave Pike from RAL. "Because of its influence on the Earth's environment, the Sun has a direct impact on our daily lives so this field of science is exciting and relevant, especially as we approach the solar maximum, the period when the Sun is at its most active."

Vicky Fleming, from the Downs School, Compton who is acting as an educational consultant to the project said, "There is a real shortage of materials for classroom use on this topic. This funding means all UK secondary schools will eventually have access to a brilliant interactive teaching resource."

<http://www.sunblack99.org.uk/>



INSIDE: MATHS IS MARVELLOUS SEE PAGE 2

Maths is marvellous!

Maths Year 2000 is a government initiative to engage teachers, parents, pupils and business in seeing the importance of maths in daily life and the economy.

As part of Oxford Mathfest 2000, RAL invited over 200 local school children to the Laboratory for some 'Magic Maths'.

The children came from Harwell, Chilton and Blewbury Primary schools and Kingfisher and

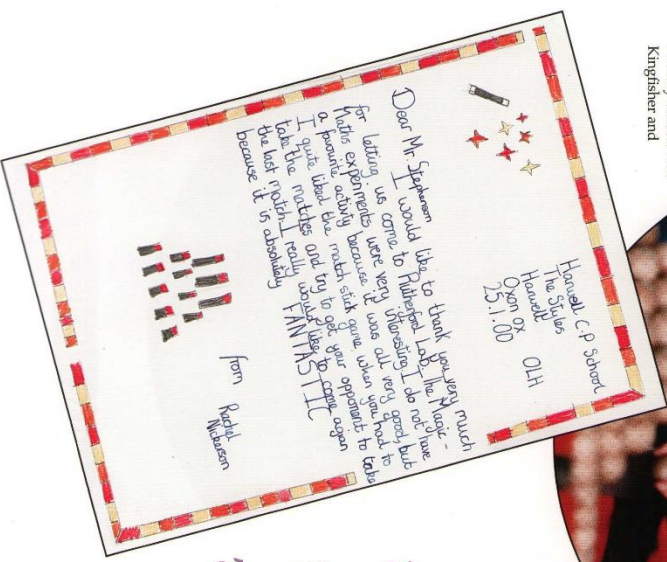


Fitzwarren Special schools. All thoroughly enjoyed the maths activities which were provided by Paul Stephenson of 'the magic math works'.

"I don't usually like maths but I would come every day to this", was one boy's reaction to the activities. One of the teachers, watching four boys working with great concentration on an activity observed that they weren't that quiet usually! "We would love to have stayed all day", said another.

The Oxford Mathfest, launched on 19 January, held events during the month to show that maths can be fun.

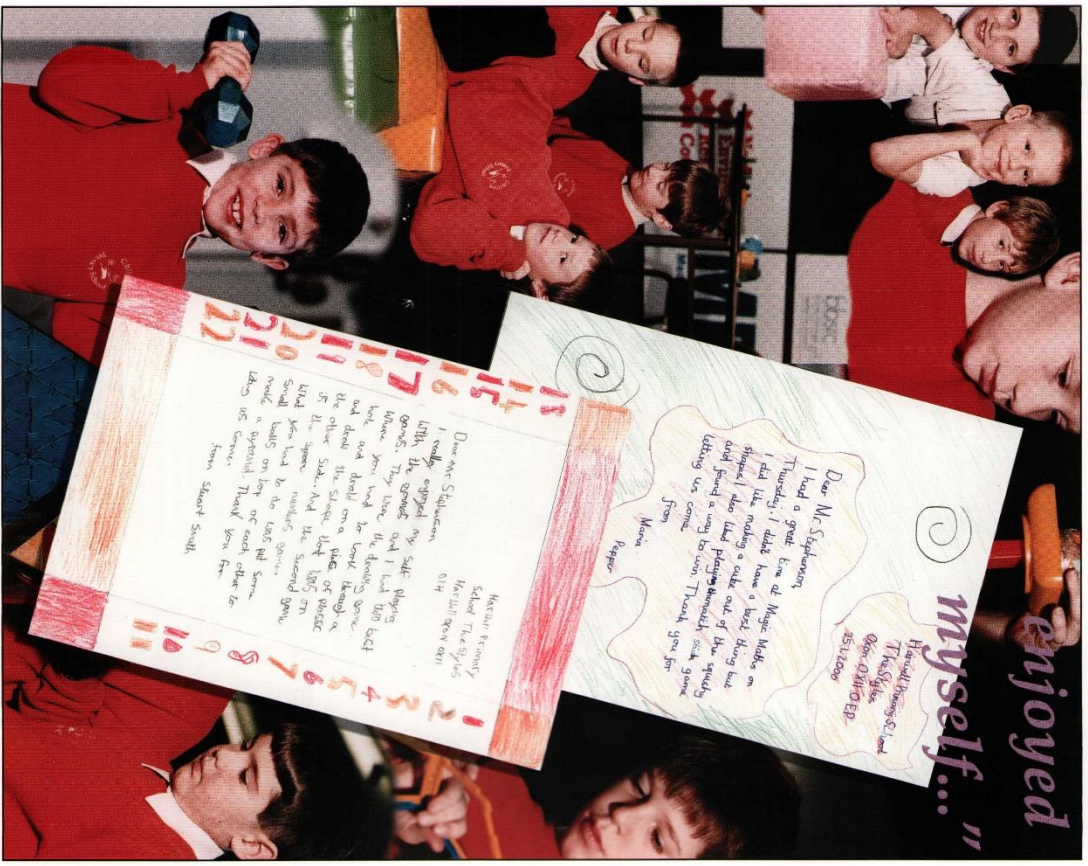
(00RC125)



"I don't usually like maths but I would come every day to this."

Magic Maths - Cont'd

"I really enjoyed myself..."



Can you explain physics in five minutes?

As LabNews went to press, five teams of students from North West schools faced the Institute of Physics Paperclip Physics challenge at Darersbury Laboratory.

The challenge was to explain, in only five minutes, either a physics application, a device or demonstrate a

law or principle using only household items and no mains gas, electricity or water. Each year local schools are invited to enter the regional heats, with one team going through to the national final. Two teams from the King's School, Macclesfield entered with 'If you can't stand the heat' and 'Some current affairs you should know about'. St Ambrose College, Altrincham entered 'Principles

of rocket propulsion'. Withington Girls' School tackled 'Diffusion' and The Belvedere School, Liverpool 'Electromagnetism rings a bell'.

The teams had to explain their chosen subject to the three judges, including a non-scientist. More details including the winning entry and photos will follow next month.

Reception at House of Lords



CLRC was represented at a reception for young chemists at the House of Lords recently by Steve King, Samantha Foster and Haub van Dam.

The event enabled chemists to chat to each other about their research over their specially-prepared posters.

Steve (centre) and Samantha (second from the right) even had time to promote ISIS by handing out copies of the calendar to the prize-winners!

Teachers meet at the particle frontier

During the first weekend in March, 37 teachers from schools all over southern England will converge on The Cosener's House to learn more about the latest research in particle physics and cosmology.

This event is the third workshop in the series called "Frontier Physics for Teachers", which is being organised by Glenn Patrick and Bill Scott in PPD after winning a £5,000 public

understanding of science grant from PPARC.

The basic idea is that 'A level teachers are given the opportunity to acquaint themselves with some of the basic concepts of frontier research physics, as well as reviewing some of the latest experimental and theoretical advances.

In addition to particle physics, previous workshops have explored

astrophysics and applications in medical physics.

The forthcoming weekend will be based around lectures given by researchers in PPD, SSD and Oxford University covering topics as varied as dark matter, CP violation and quantum gravity.

One of the highlights will be an evening talk on black holes given by Professor Roger Penrose.

Calling budding young science writers

Would you like to help bridge the gap between the public's perception of scientists and the world of science itself?

The Daily Telegraph BASF Young Science Writer Awards give you the opportunity to write an article on any scientific or science-related subject to inform and entertain Telegraph readers. Entry is open to young scientists aged between 16 and 28 who have to write a short article of 270-500 words that presents any exciting discovery or topic of research in a vivid and readable style. Closing date for entries is 10 March.

The first prize-winner in each age category (16-19 and 20-28) will win all expenses paid trip to the world's biggest general science jamboree, the year 2001 meeting of the American Association for the Advancement of Science in San Francisco. In addition, they will receive £500 and an invitation to meet Britain's most distinguished scientists at the British Association's Festival of Science at Imperial College, London from 6-12 September, 2000.

A guide to entering the competition can be found at: <http://www.science-writer.co.uk/guides.html>

Snooker



The Snooker Section has existed for many years and remains a popular lunchtime 'escape'. A lot of the same old faces still appear over the table, plus a few new ones in recent months (which probably has something to do with the inclement weather!).

The competition to win the Paul Williams' sponsored trophy (a silver tankard) has been played on and off for about 15 years. The competition was re-launched on a more permanent basis about three years ago and a base was added to the tankard so that winners' names could be recorded for posterity.

We are currently considering adding a new singles competition to the snooker calendar. This will be run as a round robin instead of the knockout format of the tankard competition.

If anyone wishes to join the section or find out any further information please contact David Farrell on ext. 5935 <d.j.farrell@ncl.ac.uk>

Retrieved above are the 1999 finalists David Farrell and Andy Wells with Bert Westwood (00RC1041)

Retirement

Ken Louch

Ken Louch retired recently after working at RAL for more than 30 years. He was a senior mechanical engineer and had worked on Nimrod and more recently, ISIS.

Over the years he developed an enormous amount of expertise on the wide range of mechanical equipment used in the accelerators and beamlines that make up ISIS eg magnets, RF systems, vacuum systems diagnostic equipment, etc.

He ran the mechanical workshop and planned the shutdown programmes for the linac and synchrotron areas and became the mechanical expert on almost all the installed equipment in the ISIS accelerators.

His greatest asset was being able to react quickly and positively to mechanical fault situations using his experience and skills to come up with effective solutions.

He has always been passionate about golf, having been a member

of Newbury Golf Club and very active in the local societies – indeed he was treasurer of the RAL club for about 25 years.

In his retirement he and his wife, Margaret, intend to travel as much as possible, get out and about cycling to pubs along the riverbank. He also plans to play a little (!) golf now and then.

At his retirement presentation he was given a mountain bike, a drill stand and mechanical vice, and a bottle of whisky.



From left to right, standing: John Sexton, Ken, Anita Sexton, Eddie Fitzharris, Babs Hingson, Roy Bell, Mick Sedwards and Phil Hingson. Seated are Margaret Louch and Mrs Bell (00RC1024)

Apprentice recruitment

AL is recruiting Engineering Apprentices again this year. There are expected to be four places within the skills range of Mechanical and Electrical trades.

Advertisements will be appearing in the local press and radio soon. Part of the selection process will include aptitude tests which will run on 6 and 7 April.

If you have any relatives or friends with children in the final year of their schooling, working at GCSE level 'C' or better why not let them know?

Further information can be obtained from Joe Hoskins ext. 6724 <jhoskins@ral.ac.uk> or from HR in R71.

The starting date for the successful ones is early September 2000. All applicants must be able to get themselves to and from Abingdon College on a daily basis for the first 46 weeks (for block release). Dates for interviews in May 2000 will be announced shortly.

Joe Hoskins

Learning and Development

Project Management training programme CLRC's corporately-funded project management training programme has now been finalised. All courses will be

Course details

Project sponsors and clients
1 day workshop for senior staff who may act as project sponsors, and clients

Learning objectives

- ▶ to gain an overview of the project management process, and CLRC's methodology
- ▶ to understand the sponsor's role in projects
- ▶ to be aware of the project management processes being used by staff
- ▶ to understand the link between external clients, sponsors, and project managers

Course dates

- ▶ To be arranged on demand

Project practitioners

A 3 day residential workshop based around a generic simulation, which allows participants the opportunity to run a project from start to finish in a 'safe' environment.

For project managers, project team members, and possibly project sponsors.

- ▶ More courses planned for May

APMP examination course

For project managers wishing to gain a professional qualification. (Candidates will normally need to have completed the 3 day simulation course.) The course is in 2 parts, each of 2 days

- ▶ to achieve APMP qualification

- ▶ 13 - 14 April and 27 - 28 April

Also, look out for APR training - everyone will be invited to attend a two hour training session on the new APR during February and March.

Dear Natalie
As office security is a hot topic at the moment, please bring this article about problems that can occur in the office when people are complacent about security to the attention of staff:

You may recognise some of these security weaknesses in your office once they are highlighted. Some points to remember -

- NEVER leave handbags on desks, or wallets in coats, in your absence. Take them with you or lock them away.
- BE CAREFUL with keys. Keep them in a secure place and don't put spare keys to safes, etc. in desk drawers.
- FASTEN vulnerable windows in your absence. It's easy to forget, particularly in the summer, and a thief can come and go in minutes.

NEVER assume that a stranger wandering in the building is a member of staff. Challenge him! Even "Can I help you?" will often deter the dishonest.

DON'T just accept that a stranger is authorised to be in the building just because he says so. Check with someone in authority and never allow anyone to remove equipment without checking first.

NEVER leave callers alone in your office, use the telephone to enquire whether someone can see him.

DON'T disclose confidential information to a stranger: No matter how important he may seem, always report such requests for information to your employer.

DON'T assume all staff are as honest as you are. Take care of your own property and that of your employers. Prevention is simpler than cure! You lock your home and your car, so why not lock your office?

*Pete Wells
Security Warden*

Dear Natalie
I would like to thank all of the friends and colleagues who joined me to celebrate my retirement. May I also say a big thank you for the many lovely gifts that I received and to say sorry to all those that I was unable to see and say goodbye to. Good luck and best wishes in the future.

Regards

Ken Louch

Dear Natalie
In reply to the comments on cycle paths, the RAL cycle path is an excellent effort, and is in fact used by many cyclists. It is generally built to a very high standard, being well away from the road and having an excellent surface.

However I think cyclists are discouraged from using it on the inward journey because of its involvement and possibly dangerous exit at the RAL end. On the outward journey using the cycle path unfortunately involves crossing a stream of impatient homework bound traffic, which is hazardous. If these areas could be improved - at a fairly low cost I believe - most cyclists would probably use it.

Ron Culver

Dear Natalie
Perhaps I may be allowed to reply to Andy Kurzfeld on the use of cycle paths:

I cannot speak for other cyclists, but the reason that I do not use the Ferni Avenue path is that it would not help me on my particular journey, especially the homework one. This would involve me having to turn right across two streams of traffic in order to join the path, and do a similar manoeuvre at the end of the path. This would be both more dangerous for me, and less convenient.

I am a member of the Harwell Bike Users Group (BUG), and as far as I can determine, the paths were designed and built without proper consultation of BUG by AEA/UKAEA, who have also been fairly deaf to suggestions and criticism since.

The path as it stands is pointless and has several design flaws. I did not ask for a path there, and I don't know of any other cyclist who did, why should we? This was just about the safest part of our journey in. The BUG has been campaigning for other facilities, e.g. a safer way of crossing to the Winnoway, so far without success. I do not remember Ferni Avenue ever being high on its wish list, if there at all.

My suspicion is that most drivers want cyclists to use the paths for the drivers' convenience, and not the cyclists' safety, but that is another issue. Under the law and the Highway Code, there is no compulsion for cyclists to use off-road paths, they have the right to use the road, and safe drivers should always be expecting the 'unexpected'. By the way, how many drivers obey the 30-mph speed limit on Ferni Avenue?

Yours sincerely,
*Mike Ellwood
(cyclist and driver)*



Dear Natalie
I would like to suggest a New Year's resolution: Motorists could resolve to leave their cars at home or even better to scrap them.

There are a number of side effects of car use that lead me to suggest this resolution. Here are a few of my least favourites:

- ▶ Cars pollute the atmosphere making people ill.
- ▶ Particularly those who aren't in cars.
- ▶ Car use increases consumption of fossil fuels raising carbon dioxide levels in the atmosphere and hence contributes to global warming.
- ▶ Increased levels of car use restrict the freedom of children particularly those who need adult supervision to get anywhere and can't play football in the road anymore.
- ▶ Cars pose a serious danger to cyclists and pedestrians.
- ▶ Chronic car use produces drivers who whinge that they had to walk the full length of the car park to get into the morning. This does not impress those us who have cycled from anywhere or even walked over from the buses.

As a cyclist I would like to see money spent on bollards across the road to avoid the mixing of cars and cycles wherever possible. I am confident that this measure would dramatically reduce any risk of a serious accident in the future.

Sarah James

Dear Natalie
Might I suggest that if Andy Kurzfeld is finding parking his car a challenge, he should consider cycling to work. Not only would he then avoid the frustrations of the car park, but he would also be able to offer an 'informed' opinion on the merits of using cycle paths.

Yours sincerely,

Richard Stamper

Dear Natalie
On my daily run to work, I am often greeted by words of encouragement from passing cyclists. Surely we should be promoting a similar relationship between motorists and cyclists, not berating those who choose to ignore the dangerous-to-watch cycle paths? An increase in the number of cyclists would also help to ease the car parking problems.

Philip Jones

Dear Natalie
I was dismayed to read Andy Kurzfeld's letter about the use of the cycle paths. Does he think that cyclists are ignoring the paths just to spite the car drivers? As a frequent cyclist, I was pleased to hear that cycle paths were to be built along Ferni Avenue but disappointed at the result. I understood

that the paths conform with the county regulations but this only highlights the inadequacy of cyclist provision in general. The reason that cyclists do not use these paths is because they are inconvenient and dangerous.

Surveys have shown that most accidents between cyclists and cars occur when the two are brought into conflict at junctions. The path along Ferni Avenue requires a cyclist to make a 90 degree turn - swinging out into the traffic - at a point just after a busy roundabout where motorists have enough to concentrate on already. The exit is equally farcical with another right angled bend and a 'Cyclist Dismount sign'. I have yet to see a junction requiring a car driver to get out and push their car, so why should this be the case for the cyclist?

I am happy to use cycle paths that are safe and well designed but it is clear to me that these paths have been installed for the convenience of the motorist rather than the safety of the cyclist.

Chris Davis

Dear Natalie
As one who cycles regularly to and from work for half the year (guess which one!) and uses the bus and occasionally the car for the rest, I feel I am in a position to reply to Andy Kurzfeld's letter which urged cyclists to use the cycle path.

I know there are cyclists who don't use the path at all. My view is more pragmatic. In order to use the cycle path when leaving the site, it is necessary to manoeuvre to the right hand side across oncoming traffic and to do this where, from a motorist's view, there is apparently no junction. This introduces a hazard compared with continuing in the flow of traffic and being visible and predictable on the road. Whichever direction, the path does not help you with the four junctions near the RAL gate, where an accident is more likely and actually have occurred, and it would be complex to try to achieve it.

Andrew does rightly raise the point, if the facility is wrong, let's redesign it. There is a bicyde users' group for the site which has made representations about how cycling can be improved on and around the site, but it apparently was not consulted when this cycle path was designed. In general, the points where a cycle path begins, ends and crosses other routes are liable to add danger if not well-designed.

Julian Collop





Aliens at the BBC

With the superb images coming from space in recent years and 1999's total eclipse, there has been much media interest in the Sun and the way it influences our lives. With RAI's leading involvement in missions such as the ESA/NASA Solar and Heliospheric Observatory (SOHO) we have been in much demand for interviews. In the

past we have given interviews for BBC News, ITN, Thames Valley, RM, Sky News, BBC Radio 5 Live, BBC Radio 1, Central News, to name but a few. However the request to be the 'solar interviewer' for BBC Breakfast News on 6 January was a totally new experience. The BBC had realised that the Sun is approaching its phase of maximum activity and wanted someone to tell them about what it means to the person in the street. From start to finish the whole experience was a pleasure, and not the usual hair-biting event. Everyone was amazingly friendly and happy; the whole air was more like a party than a news programme. Yet, they still remained totally professional and everything ran like clockwork.

I met my first alien! Just before I went into the studio, whilst eating the croissant which had been thrust into my hand, a couple walked into the room with a superb four-foot model alien. Commissioned for a museum in the USA, he was to be interviewed after me! The alien had just missed Angus Fraser, the English fast bowler, who had just left the room for his interview. As a cricket fan, I was delighted to have met him. When it was my turn, I was taken to the sofa and John Nicholson came over. He was extremely friendly and we had a good chat about everything from the time he gets up in the morning to the existence of life on other planets. Then, it was time for the interview. Given the whole air of the studio, it was more like talking to some friends than giving a formal interview to half of the UK as it wakes up. Their approach had made it so much easier for me. However, I am not sure that they got so many words out of the alien!

Richard Harrison

ATSR website

The ATSR website <http://www.atsr.ac.uk> has been updated. The site layout changed to make it easier for you to find information, will be constantly evolving. Images and new features will be added regularly so check back often!

Please send Marcus Povey your comments!

Media fellowships

Each year the British Association administers the Media Fellowship scheme allowing practising scientists to experience first hand how the media work. Fellows are professional scientists or engineers in any discipline who spend between 4 and 8 weeks working in the media after which they return to their full time occupation. Up to ten fellowships are offered each year and placements are regularly offered at a variety of BBC radio and television departments. The Guardian and Times Higher Education Supplement. All fellows are required to attend the British Association Annual Festival of Science where they spend the week working as journalists in the busy press centre. Fellowships are usually taken up in the period between August and October. The closing date for entries is 31 March.

Further details and application forms can be obtained from:

Maecnal Gupta, British Association, 23 Savile Row, London W1X 2NB
Tel: 0171 973 3500, fax: 0171 973 3051
<maecnal.gupta@britassoc.org.uk>

Press Officer Jacky Hutchinson said of the opportunity "This is an excellent way to find out how the media work first hand and I urge anyone interested in PR, who can spare a month or two away from work, to seriously consider it. You would be working as a reporter going round other establishments, interviewing other scientists and writing up science stories for the press, or preparing them for broadcast. If you're interested contact me for more information."

Christmas Crackers

1999 saw the return of Christmas Crackers. This - an annual event at DL on the day of the Christmas lunch - contained sketches, songs - even dancing by DL staff. This year the staff involved excelled themselves, nail-biting plots with Paul Durham and Derek Hotherhall in roles for 'Who Wants to be a Millionaire', Lorna Moran was MC and songs were sung by



Ron Maksin. We hope this will become a regular event again each year.

Circulation lists

Here's a little test for you. To get a chance to win a million on Tarant's quiz show you have to put 4 items in some sort of order - against the clock. Have a go at putting these magazines in circulation order. The highest circulation is 139,000 - the lowest 20,000. No time limit for you, so here are 8 to have a go at:

- ▶ Aviation Week and Space Technology
 - ▶ Computer weekly
 - ▶ Economist
 - ▶ Nature
 - ▶ New Scientist
 - ▶ Physics World
 - ▶ Times Education Supplement
 - ▶ Times Higher Education Supplement
- Answer next month (figures from Mechnad - the on-line database we use for contacting the media)

Prize winning work



Over the next few months we will be listing previous Nobel Prize winners and the reason that they were recognised in this way. Recognise some of the achievements?

- N 1901** **WILHELM CONRAD RÖNTGEN** in recognition of the extraordinary services he has rendered by the discovery of the remarkable rays subsequently named after him.
- N 1902** The prize was awarded jointly to **HENDRIK ANTOON LORENTZ** and **PIETER ZEEMAN** in recognition of the extraordinary service they rendered by their researches into the influence of magnetism upon radiation phenomena.
- N 1903** The prize was divided, one half being awarded to: **ANTOINE HENRI BECQUEREL** in recognition of the extraordinary services he has rendered by his discovery of spontaneous radioactivity the other half jointly to: **PIERRE CURIE** and **MARIE CURIE, née SKŁODOWSKA** in recognition of the extraordinary services they have rendered by their joint researches on the radiation phenomena discovered by Professor Henri Becquerel.
- N 1904** **LORD JOHN WILLIAM STRUTT RAYLEIGH** for his investigations of the densities of the most important gases and for his discovery of argon in connection with these studies.
- N 1905** **PHILIPP EDUARD ANTON LEARNER** for his work on cathode rays.
- N 1906** **SIR JOSEPH JOHN THOMSON** in recognition of the great merits of his theoretical and experimental investigations on the conduction of electricity by gases.
- N 1907** **ALBERT ABRAHAM MICHELSON** for his optical precision instruments and the spectroscopic and metrological investigations carried out with their aid.
- N 1908** **GABRIEL LIPPMANN** for his method of reproducing colours photographically based on the phenomenon of interference.
- N 1909** The prize was awarded jointly to **GUGLIELMO MARCONI** and **CARL FERDINAND BRAUN** in recognition of their contributions to the development of wireless telegraphy.
- N 1910** **JOHANNES DIDERIK VAN DER WAALS** for his work on the equation of state for gases and liquids.
- N 1911** **WILHELM WIEN** for his discoveries regarding the laws governing the radiation of heat.
- N 1912** **NILS GUSTAF DALÉN** for his invention of automatic regulators for use in conjunction with gas accumulators for illuminating lighthouses and buoys.
- N 1913** **HEIKE KAMERLINGH-ONNES** for his investigations on the properties of matter at low temperatures which led inter alia to the production of liquid helium.
- N 1914** **MAX VON LAUE** for his discovery of the diffraction of X-rays by crystals.
- N 1915** The prize was awarded jointly to **SIR WILLIAM HENRY BRAGG** and **SIR WILLIAM LAWRENCE BRAGG** for their services in the analysis of crystal structure by means of X-rays.
- N 1917** **CHARLES GLOVER BARKLA** for his discovery of the characteristic Röntgen radiation of the elements.
- N 1918** **MAX KARL ERNST LUDWIG PLANCK** in recognition of the services he rendered to the advancement of Physics by his discovery of energy quanta.
- N 1919** **JOHANNES STARK** for his discovery of the Doppler effect in canal rays and the splitting of spectral lines in electric fields.
- N 1920** **CHARLES EDOUARD GUILLAUME** in recognition of the service he has rendered to precision measurements in Physics by his discovery of anomalies in nickel steel alloys.



More to follow in future

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