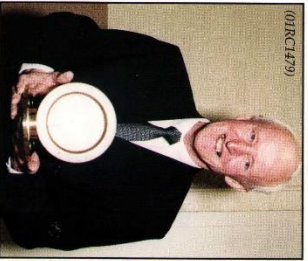


Letters
TO THE EDITOR



(01RC1479)

Dear Natalie

Please will you convey my heartfelt thanks to all my friends and colleagues who attended my retirement presentation in the social club on 23 Feb and to those who were unable to attend. The day was a truly memorable occasion with so many friends and retired friends. Special thanks to Mike Anthony for his presentation clock of my time at RAL, and to Ray Roberts for his superb card and all who signed it, and to Tony Hewlett who organised the collection. I will miss the company of so many special friends may I wish everyone at RAL a very happy future.

Yours sincerely
Ken Robbins
RAL Jan 1976 - Feb 2001



(01RC1508)

Dear Natalie

Jean and I would like to thank you all for the wonderful send-off you gave us on my retirement. The gifts and flowers were lovely, and we were made to feel like 'King and Queen for a day'. It was, for us, a wonderful occasion.

Thank you all
Len and Jean Denton



Dear Natalie

May I through LabNews say farewell to the many friends and colleagues I have met during my 40 years with NERNS, SRC, SERC and CCLRC. A special thanks for the generous gifts I received on 30 March to assist me on the golf course, in the garden and in the armchair! Finally, I wish CCLRC continuing success in the future.

Gordon Walker

(Full retirement story to follow next month -Ed)

Gordon and Uina Walker with Andrew Taylor (01RC2195)

Articles, ideas and letters are very welcome!

Articles to the Editor or Correspondent by 15th of the month.

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LABNEWS

APRIL 2001

A MONTHLY NEWSLETTER FOR STAFF OF THE COUNCIL FOR THE CENTRAL LABORATORY OF THE RESEARCH COUNCILS

INSIDE THIS ISSUE

CASIM 2/3 Science week 8/9



Stuart Byers, flanked by local MP Helen Southworth, leaves DL to applause from staff. The spontaneous gathering of staff and the applause he received seemed to catch Mr Byers by surprise and prompted a small speech in which he thanked staff for their efforts. (011011333)

Accelerating science: the CASIM capability

As reported last month, Stephen Byers has come out strongly in support of the CASIM proposal at Daresbury Laboratory. But just what is CASIM and why is it important?

CASIM - the Centre for Accelerator Science, Imaging and Medicine - was developed jointly by staff from Daresbury, universities and industry. It will advance scientific knowledge through unique accelerators and imaging technologies, benefiting industry, the environment, health and the quality of life. It will include Fourth Generation Light Sources (fCL/S), including an undulator-based free electron laser, as well as a proton cyclotron supporting a radioactive ion beams facility and facilities for medical imaging, diagnosis and treatment. By bringing this suite of facilities together on one site, with further opportunities for the SNS to be developed alongside them, a range of new scientific opportunities will be opened up. CASIM will also link the existing infrastructure and scientific expertise at Daresbury with northwest hospitals, universities and industry. It will unify scientific strengths across a number of disciplines, breaking down traditional barriers, and will combine next generation research technology with a range of existing capabilities and expertise.

CASIM's technology combines intense proton beams, free electron lasers, ion beams, novel computing and simulation and the capability to revolutionise medical imaging. This will advance studies ranging from the origin of elements in the universe to the detection of cancer at the molecular level. The fCL/S facility within CASIM will provide a suite of accelerator-based light sources, including free electron lasers (FELs). These will produce light of unparalleled intensity from the far infrared to the extreme ultraviolet. The powerful combination of the proximity of these FELs to each other and to the low energy synchrotron facility at Daresbury will allow a level of experimentation that will supersede anything existing or even contemplated in the UK or Europe.

CASIM will also contain SIRIUS, an accelerator which offers a combination of intensity, range of species and energy, that render it unique. The radioactive ion beams it produces will be crucial for fundamental studies of

nuclear physics and nuclear astrophysics, and to applications in condensed matter, materials, biomedical and environmental science.

CASIM will place the UK research community at the head of developments in imaging science. This is a priority area for 21st century biomedical research for universities, the NHS, research institutions and the drug industry. The focus will be on two disease classes: cancer and neuroscience. For cancer diagnosis the importance of imaging is enormous. CASIM will enable more accurate and earlier diagnosis through images that will have exceptionally high definition. Advanced imaging is also vital to monitor the effect of therapy, to detect pitfalls and to design new treatment therapies.

CASIM's unique combination of scientific facilities will allow new materials to be studied under real conditions. We will be able to process novel silicon devices for use in information technology and communications using bright free electron laser light, heavy ion beams and imaging. We will be able to see changes in the surface of the device so quickly that we will 'catch' the atoms in motion, allowing us to see exactly how 21st century materials work, helping us to design better communications, faster web access and the means to store all our CDs on one small disc. Advanced computing will help bring virtual reality on the next generation internet into everyone's home.

CASIM will improve the detection of disease by developing new and improved imaging techniques. It will also develop new treatments for cancers. It will enhance our understanding of vital biological processes; enable the exploration of the dynamics of disease at the molecular level; allow us to learn far more about cellular events such as immune recognition and cell signalling; help us to find the means to tackle such diseases as CID and Alzheimer's; and help in advancing the design of drugs which specifically target diseased cells, enabling greatly reduced dosages and improved outcomes.



Stephen Byers, Secretary of State for Trade and Industry, making his announcement in the DL science centre on Friday 2 March, in front of some of those involved in the proposal and a large number of people from the media. Significant coverage in local and national newspapers and journals, and on local TV and radio, followed. (DL/01/13/20)

CASIM will make it possible to spot tiny early-stage tumours and monitor cancer treatments, while medical therapy enabled by the proton accelerator will demonstrate new forms of treatment. Virtual reality and modelling will also help surgeons to treat people more effectively.

The CASIM project will advance our scientific knowledge of the Earth, its environment and the dynamics of its composition; from interactions at sub-atomic level to those leading to the formation of supernovae; from an understanding of contaminants in plants and mineral structures to an examination of potentially harmful atmospheric gases.

The ion beam facility will represent a major advance in the field of nuclear physics and opens up radical new possibilities in other disciplines, including biomedicine and environmental studies. Radioactive beams will allow scientists to explore the limits of nuclear growth. CASIM will also play a vital role in creating new technologies, revolutionising existing technologies and underpinning industrial advance. Projects will involve industrial and scientific partnership right across the research and development spectrum. CASIM will help develop the next generation of information and communication technology. It will enable new magnetic storage materials to be developed for use in credit cards,

computers and audio-visual equipment allowing us to store more information, more securely in less space. CASIM will open the way to revolutionary nanotechnology devices that harness the properties of atoms and molecules; it will focus on state-of-the-art technology for everyone's benefit, eg non-destructive testing of new materials to enable aircraft to be lighter, safer and more fuel efficient. Companies will be able to use CASIM's facilities to develop industrial processes and materials tailored to specific needs, helping to ensure eco-friendly, energy-efficient production.

- CASIM will underpin the competitiveness of UK industry and ensure the leading position of British science in vital technological developments.
- An international centre in the UK for fundamental scientific research.
 - A hub of next generation research capability helping to improve health, create new technologies, benefit the environment and understand our universe.
 - A focus for maintaining and developing UK expertise in accelerator science, for training new accelerator scientists and for exploiting a myriad of opportunities from accelerator technology.
 - A centre of excellence for the development of next generation internet technologies and very high performance computers.
 - A pioneering partnership including industry, Daresbury Laboratory, the north west universities, Clatterbridge Centre for Oncology, Christie Hospital, The Walton Centre for Neurology and Neurosurgery, South Manchester University Hospitals and Royal Liverpool University Hospital.

CASIM: some reactions

"I want to thank the workforce at Daresbury ... We know the background for this review to be set up. It would have been the easiest thing in the world for people to walk away. That was not the approach of my parliamentary colleagues or the people here at Daresbury."

- Secretary of State for Trade and Industry, Stephen Byers, announcing his support for CASIM. (For full transcript of Mr Byers' speech, see <http://intranet.dl.ac.uk/>)

"Not often scientists are lost for words in reaction to a government announcement of funding, but this morning I think we all were"

- Professor Peter Weighman of Liverpool University, who led the CASIM project proposal

"... this secures the future of Daresbury and the top-class people who work there. It is excellent news both for Daresbury Laboratory and for the area in terms of boosting the economy and creating jobs"

- Derek Twigg, MP for Halton

"The announcement is just the beginning for a major collaboration that could become a model for the rest of the English regions"

- Bob Cernik, Daresbury Laboratory

"I'm delighted we are going to get CASIM. It is a testimony to the excellent work being conducted at Daresbury... The loss of the diamond synchrotron was a bitter blow but this new proves that when things don't go the way you want them to, you must stay and fight"

- Mike Hall, MP for Weaver Vale

"These are really exciting developments for the north west region and for the NHS. The announcement will give a significant boost to research into the prevention, early detection and treatment of cancer"

- Professor Maggie Pearson, director of public health for the NHS north west

Spacecraft sheds new light on near-earth space

Earth is surrounded by a raging battle zone that begins only a few hundred kilometres above our heads, and yet most of us are totally oblivious to the fact. Now scientists are poised to understand this turbulent war zone following the first scientific results from the four Cluster spacecraft orbiting this no-man's land of space between the Earth and the Sun. One fully understood we should be able to protect our satellites and Earth based power and communication systems more effectively from this raging 'firefight' of cosmic particles.

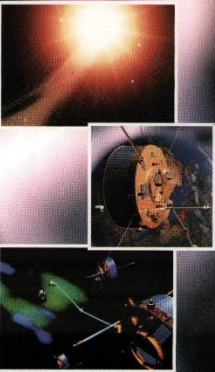
Our natural defence from this onslaught is the Earth's magnetosphere - an invisible bubble - surrounding the entire planet. Acting like a cosmic punching bag the magnetosphere is subjected to regions of solar particles, the Solar Wind, charging outwards from the Sun at supersonic speeds and constantly bombarding this protective bubble. But some break through, resulting in the spectacular Aurora Borealis and, perhaps more dramatically, magnetic storms, which can knock out power and communication systems on Earth, as well as on satellites.

A critical area for observation has been the bow shock wave, the point at which the Solar Wind slams into the Earth's magnetic bubble, where it abruptly slows down and forms a shock wave in front of it, just like that ahead of a supersonic aircraft. This bow shock wave becomes the Earth's first line of defence.

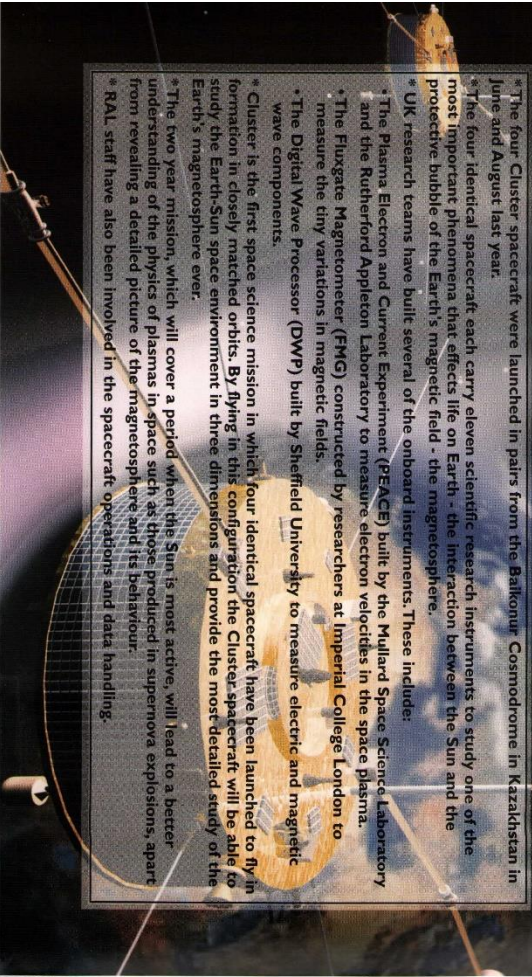
Dozens of instruments on board the four Cluster spacecraft have now begun to provide the complete processes that take place in the near-earth space. This is the first time in the history of space exploration that four identical spacecraft have explored the Earth's magnetosphere, delving into the different regions of this defensive and invisible magnetic 'bubble' that surrounds planet Earth.

As the quartet fly in tetrahedral formation around Earth their suite of scientific sensors is carrying out the most comprehensive, three-dimensional investigation of the cosmic battle zone that links the Earth and the Sun.

<http://sci.esa.int/cluster>



- *The four Cluster spacecraft were launched in pairs from the Baikonur Cosmodrome in Kazakhstan in June and August last year.
- *The four identical spacecraft each carry eleven scientific research instruments to study one of the most important phenomena that effects life on Earth - the interaction between the Sun and the protective bubble of the Earth's magnetic field - the magnetosphere.
- *UK research teams have built several of the onboard instruments. These include:
 - * The Plasma Electron and Current Experiment (PEACE) built by the Mullard Space Science Laboratory and the Rutherford Appleton Laboratory to measure electron velocities in the space plasma.
 - * The Fluxgate Magnetometer (FMG) constructed by researchers at Imperial College London to measure the tiny variations in magnetic fields.
 - * The Digital Wave Processor (DWP) built by Sheffield University to measure electric and magnetic wave components.
- * Cluster is the first space science mission in which four identical spacecraft have been launched to fly in formation in closely matched orbits. By flying in this configuration the Cluster spacecraft will be able to study the Earth-Sun space environment in three dimensions and provide the most detailed study of the Earth's magnetosphere ever.
- * The two year mission, which will cover a period when the Sun is most active, will lead to a better understanding of the physics of plasmas in space such as those produced in supernova explosions, apart from revealing a detailed picture of the magnetosphere and its behaviour.
- * RAL staff have also been involved in the spacecraft operations and data handling.



Paperclip Physics

Can you explain a physics principle, law or the physics behind a household device in just five minutes? Students from local schools thought they could when they took up the Institute of Physics' challenge and entered the Paperclip Physics competition regional final held recently at DL. The competition, now in its third year is a

national competition run by the Institute of Physics. The combined final of the Merseyside and Manchester branches was held at DL for the second year running. The teams had their nerves stretched further in a tense wait for the delayed arrival of the non-scientific judge, Helen Southworth, M.P. Helen was making her second

visit of the day to the Laboratory having accompanied Stephen Byers in the morning. Withington Girls' team 1 started the final with 'ready, steady, microwave' and compared how conventional and microwave ovens work. Urnston Grammar, newcomers to the competition, demonstrated why the sky is blue and the sun yellow - and often red at sunset. The team from the King's School, Macclesfield made inventive use of a drum, drumstick and tablecloth to represent the corndrum, in 'when a tree falls...'. The final team, Withington Girls' team 2, tackled the optical illusion of a wheel spinning backwards with 'spin city'. Questions from the three judges, Helen, Heather Rix, a science teacher at Manchester High School, and Professor Erwin Cabibbler of Liverpool University were very stringent. The winners were determined by their convincing answers to some very difficult questions.



Two of the winners with the judges and Helen Southworth sat in the middle.



The winning team, Urnston Grammar School

The winning team was Urnston Grammar who stopped Withington Girls' from winning for the third consecutive year. They carry out best wishes for the national final to be held at the Institute of Physics headquarters in London later this year.

Our thanks go to Helen Southworth for her continued commitment during a very demanding schedule, and to Heather Rix and Erwin Cabibbler for ascertaining Helen's understanding of the demonstrations as well as their scientific accuracy.

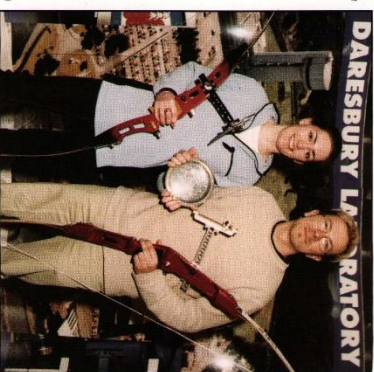
Civil Service National indoor archery championships

On Friday 9 March the CS National Indoor Championships took place at Quarry Hill in Leeds. Competitors from various civil service departments throughout the country assembled together to shoot a Portsmouth round - five dozen arrows shot at a 60 cm target face at a distance of 20 yards.

The shoot lasted just over three hours and at the end of the day 1 was placed 3rd Lady, Hywel Owen was placed 3rd Gent and the North West Area Team won the regional team trophy. The team consisted of Hywel Owen, Alan Banks (my Dad, who shoots for North West Post Office Region), and myself. Together, we put Daresbury Laboratory on the map!

Caroline Banks

Hywel and Caroline pose with the regional team trophy (DL01/26/2)



UK e-Science Grid programme

On October 2000, the OST announced a £98M three-year programme to develop and deploy Grid technology to meet the data and computing challenges arising in several areas of the physical and life sciences.

The rationale behind this decision is that today's science is posing some of the most extreme computing challenges. These challenges represent the cutting edge in developing the next generation of distributed IT systems. Just as happened with the web, however, the solutions to these challenges will quickly find application in the commercial marketplace. By supporting the Grid developments required by science now, the belief is that we will get to commercially useful systems more quickly.

This new funding is being channelled through the UK research councils which support basic and applied research in many areas. CLRC provides major scientific research facilities in support of the work of the other research councils and also supports UK scientists in their use of large scale facilities elsewhere in the world. Together, all these facilities will generate increasingly large quantities of increasingly complex data over the next decade. Grid technology offers a potential solution to the challenge of extracting useful science from this complexity.

Some of the developments which are proposed as part of the UK e-Science Grid programme over the next three years are summarised below.

BioScience

Molecular simulations are an essential tool in understanding macro-molecular function at an atomic level.

Researchers at Birkbeck College in London, supported by BBSRC, have been using molecular simulation techniques, such as molecular dynamics, to study the stability and unfolding of specific proteins where the onset of partial unfolding is correlated with disease. One example of this is the protein lysozyme (see figure) for which two mutations have been found, clinically associated with amyloidosis (formation of the



protein into fibres resistant to temperature and enzymes). These calculations are computer intensive and have been traditionally carried out on supercomputers and more recently on in-house departmental multiprocessor workstations. Rowulf diesters have recently been demonstrated to be a very cost effective solution to the considerable computing requirements of these techniques. A project funded by BBSRC and the Wellcome Trust is establishing a prototype BioScience Grid linking five molecular simulation groups at Oxford, Southampton, Birmingham and York universities and Birkbeck College with RAL who will provide technical support and computational and data resources.

Earth system science

One of the possible proposals is for a major new NERC initiative with the goal of predicting environmental changes on timescales of up to 100 years on the basis of:

- a sound scientific knowledge of the processes within, and the interactions among, the components of the coupled earth system;
- an understanding of the uncertainties of our knowledge of key processes;
- the inherent limitations of the predictability of the system.

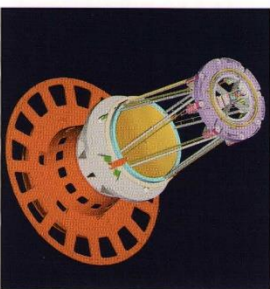
The approach is to develop a modular modelling environment in which a hierarchy of models can be supported in a common framework. The project would involve collaboration between a broad spectrum of UK researchers from many areas of climate research and earth observation. The primary aim of this prototype climate research Grid is to provide the Earth System Science community with:

- a Data Grid providing high performance, integrated access to distributed massive data resources;
- a Simulation Grid supporting large scale and distributed modelling capability spanning process studies to fully coupled climate change experiments;
- a Model Grid providing a modular model code framework supporting multi-model experiments.

Astronomy

The UK astronomical community is planning the Astro-Grid project. This will create a Grid infrastructure which will link together the major astronomy centres at RAL, the Mullard Space Science Laboratory and Edinburgh, Cambridge and Leicester Universities with important astronomical resources elsewhere and which will be accessible to the whole UK astronomical community. The concept of Astro-Grid is to create a virtual observatory. This will enable researchers to obtain new knowledge about a particular class of astronomical objects by extracting and analysing information from many existing data resources distributed throughout the world, rather than by applying for scarce telescope time at some remote mountain-top observatory. These federated resources will contain data, with appropriate metadata, to support efficient search and retrieval from a wide range of high resolution, all-sky, multi-wavelength surveys. Among the data sources feeding into the Astro-Grid will be the UK Infra-Red Telescope Wide Field Camera (UKIRT-WFCAM) on Mauna Kea in Hawaii; the Sloan Digital Sky Survey on Apache Point in New Mexico; the XMM-Newton X-ray satellite and the Cluster mission of four satellites measuring the effect of emissions from the Sun on the earth's magnetosphere. As an example of the productivity of these facilities, UKIRT-WFCAM can generate a substantial fraction of a terabyte of data every clear night.

Detail Boyd, Julia Goodfellow (Birkbeck College) and Lois Steinmann-Clark (University of Reading)



Daresbury lecture series success continues

On 16 February the Daresbury lecture series continued with Ian Russell's 'Blown up Biology'.

Exploiting Cistard's 'has always been a big success so on this recommendation tickets sold out quickly and a number of people turned up on the off-chance for a spare seat.

Ian didn't disappoint with his microscope and various samples of pond life and plenty of audience participation in the collection of samples. He explained how a bare sample of rock quickly supported life in the form of algae and moss, and encouraged his young audience to wonder what it must be like to live on a rock. Even some of the older members of the audience were surprised to realise this is what we do.

Ian explained that the earth is a rock hurtling in space and probably seems as large to us as the microscopic life see their homes. From this promising start we were shown how (what appeared to be

clear) water supported tiny microscopic life. Each slide revealed another amazing creature; a paramoecium, a spirogyra, a daphnia or water flea, a volvox and an amoeba moving elegantly across the screen to some well-chosen music.

We saw the chromosomes in an onion root and the cells in a sample scraped gently from the mouth of identical twins, whose chance inclusion in the audience gave a good example of how such twins share identical DNA.

With all the samples, music and audience participation nobody noticed the time and the lecture ran over by 15 minutes but there was still time for the usual tea, coffee and biscuits and a good look round the science centre.

For more details of the Daresbury lecture series,



(12/01/16/02)

contact Marg Jacks or Anne Humphreys or visit the DL calendar: http://admin-www1.ac.uk/admin/notices/dl_calendar/

British Red Cross

We recently been working part time for the British Red Cross (BRC) as a tele-counsellor. Yes, I'm afraid I've been one of those hideously cheerful people who phone up of an evening just as you've sat down to eat your dinner and watch Eastenders. Ironically just as I was sitting down to eat late one night recently (too late for Eastenders but I'm not a fan anyway) my phone rang.

Some Scottish bloke asked if I would like to buy a time share, and I ended up telling him what I'd been doing all evening (fifty-odd phone calls to residents of Basingstoke). To be honest I couldn't do commercial work. I think it goes without saying that the Red Cross is a worthy cause. We are paid staff and I was surprised to find that the BRC employs rather a lot of people:

an organisation needs a core group of employees to maintain integrity.

The aim of our campaign is to recruit community-minded people to collect for Red Cross Week 6 -12 May. With 8760 hours in the year, they figure that two hours is little to ask for, considering what it can achieve. In just two hours, volunteers can typically raise enough money for:

- 45 blood bags for an emergency field hospital,
- 6 baby parcels, each providing vital supplies to look after a baby for a month in areas suffering from natural disaster such as the recent India earthquake,
- 4 first aid kits for use by trained British Red Cross Personnel providing first aid support to our local communities, or

- 10 home visits by volunteers providing short-term care.

Geoff McBride

If you can spare a couple of hours during Red Cross week to help collect - either in your street, shopping centre or local pub - please contact Linda Chapman at the British Red Cross Oxfordshire Branch, Red Cross House, Colwell Drive, Abingdon, Oxfordshire, OX14 1AU Tel: 01235 555811 Fax: 01235 539009 or Patricia Swindells at the Cheshire Branch, Memorial House, Northwich Road, Knutsford, Cheshire, WA16 0AW Tel: 01565 650201 Fax: 01565 653885.

Successful science week

Over 1700 people were inspired by science when they visited CLRC sites during National Science Week.

At RAL about 900 school pupils and 400 members of the public experienced, first hand, some of the wonders of science, and met and talked to staff who are involved in some of the amazing research that is carried out at the Laboratory.

Janet Haylett organised the events for schools which included visits from 120 local primary school pupils who carried out experiments and toured the Space Science Department, sixteen-year-old girls from local schools who talked to several female scientists - gaining a better understanding about the pros and cons of a career in science. One of their projects was to set up their own web pages with their views on the day so far. Almost 300 pupils studying A-level physics attended a particle physics masterclass, involving lectures and tours round ISIS.

The Laboratory also hosted a special event, 'In search of the past', organised by ScienceLine. Over 300 school pupils attended interactive workshops where they used archaeology research techniques to discover the truth behind some old 'wired' tales that have haunted a small village for decades. 'Organising events for such a range of ages and abilities is a challenge, and I'm thrilled to say that RAL staff all rose to this challenge brilliantly. I've been promised thank-you letters, and look forward to seeing what the visitors thought were the best bits of the visits', Janet said.

As well as school pupils, members of the public grasped opportunities to get involved in activities at RAL, attending a special lecture by ex-astronaut Don Lind and rising to the archaeological challenge. A group from the Women's Institute became engineers for the day, building model aeroplanes. These were all tested, and the aircraft that stayed airborne the longest, won a prize. The day was organised as a follow-on from last year's very successful 'buggy' challenge. There was also a chance for staff to bring their families onto site to compete in a family science quiz on Saturday afternoon. The quiz included various written and picture rounds as well as a hands-on paper challenge.

Daresbury Laboratory took science to local schools during National Science Week, exploring light with primary schools and DNA with pupils at Key Stages 3 and 4. The pupils at Winsford Over Hall school in Cheshire were treated to a talk and hands-on experiments about light, where they learned about the way that light can be split into different colours, how mirrors work, were entertained with some optical illusions and saw how light can be 'trapped' in a stream of water. Older pupils, including those at Wade Deacon School in Wiltshire, had the opportunity to learn about DNA, extract the DNA from kawi fruit and study clumps of it under a microscope.

Tony Buckley said, "I'm really pleased that we were able to explore the wonder and science of light with pupils at primary level. The questions they asked after they'd done their hands-on experiments showed that they'd listened, learned and wanted to know more. The synchrotron light source at Daresbury is also helping to unravel the mysteries of the human genome, so it was good to introduce older pupils to DNA and have the chance to discuss how this important molecule contains all the information that makes up the book of life. Who knows, maybe one of these pupils will come to Daresbury to make some ground-breaking discovery in the future," he added.



A tenants tail!

In last month's issue Chris Pickles told LabNews about the tenants at DL and now Terry Maruby takes up the RAL and Chilbolton story...

So reiterate Chris's opening remarks - CCLRC is not in the business of being a landlord; however, where there are strategic, tactical or synergistic benefits to be had, then CCLRC will open its doors to tenants.

The largest of CLRC's tenants is UKERNA, originally the Joint Networking Team located in the computing department until it was spun-out as a separate company in 1994. UKERNA's business is the provision of advanced networking and communications facilities to the education and research community and, as such, the company manages the JANET network and provides a number of other value-added services to its customers. The business has grown over the last two years, following the extension of JANET connectivity to the further education community and the company now employs some 60 people. As a result, UKERNA has expanded out of R31 to occupy both floors of the R27 west wing, plus the former Atlas conference rooms.

Caravision came to the Laboratory in 1999 having been enticed here from California by CMF's extensive facilities. Their business area is flat screen displays that they have interests in other areas as well. Last year they won a DTI SMART Award and were subsequently visited by Lord Sainsbury.

PPE came to RAL in 1998 with four staff working in a ray former radiochemistry lab whilst their facilities in R30 were prepared. They now employ 20 people and occupy virtually the whole of R30, having built up themselves an impressive array of R&D facilities. This has been made possible by raising £4.5 M in venture capital, aided by no less than four SMART Awards including a Foresight SMART Award for the best use of SMART Award funding. PPE's business is the development of their unique technology for the next generation of flat screen displays, typically for use in televisions and other multimedia applications, which will permit goods such as a hang-on-the-wall tv to be produced at consumer prices.

Quodus Technology has been located at RAL since 1990 and has developed a successful business providing R & D and prototype production capabilities for a number of leading edge technologies. Quodus continues to expand its technology base and has recently taken on a number of new contracts involving the manufacture of gratings and waveguides for the fast-growing photonics industry. In April 2000 the company won a prestigious SMART Award for the development of sub-100 micron solder bump technology which is used to attach device chips to circuit boards. It is anticipated that at the end of the development period Quodus will offer the service to industry.

AMM, Roundman and Bookham are all companies whose main premises are elsewhere but who, because of the amount of time their staff spend here, have found it useful for them to have a proper base here.

Also, RAL occasionally assists companies faced with sudden problems; Resonance Instruments used the R12 engineering hall to assemble an NMR system for export, their own facilities not being large enough to deal with the volume of business at that time. This kind of help is a very real example of CCLRC using spare resource to contribute to the wealth of UK industry - and it is much appreciated by the small companies involved. Unfortunately, given the pressure on space at RAL, we can only rarely offer this kind of help.

Like DL, RAL has some communications masts; the largest one, by R25, is a base station used by both Vodadone and One-to-One. The reason

why such fence rivals share the masts because Telecommunications Regulations requires them to do so whenever possible - a measure introduced to reduce mast proliferation; consequently we anticipate that other operators may also use the mast in the future. Orange already has a low output 'microcell repeater' mast on site located by the R20 hostel.

The Chilbolton site occupies nearly 190 acres but BCRU's 25 m antenna and buildings only occupy a small proportion. The rest is leased out to a local farmer. Unfortunately it is not prime agricultural land; the site is half of a former arable and when the MoD departed, a 9" layer of soil was placed over the runways/taxways and hard standings which remain in situ. Some areas are not cultivated, partly because of the presence of building foundations, whilst some is 'set-aside' - but it does mean that these areas provide a sanctuary for the local wildlife population, particularly for birds such as Lapwings that nest on the ground. Hares, partridges and a kestrel, which has taken to perching on the navigation light on the dish, all add to the diversity. The locality is heavily protected by planning restrictions and, unless it is chosen as the site for 'the new Winchester', the wildlife will otherwise remain undisturbed for years to come.

Returning to RAL brings us to CCLRC's smallest but most mobile tenants - Tess and Flight - who come to graze in a small paddock CCLRC owns in Chilbolton every summer!



Investors in People update

Assessment

Our re-assessment is booked for 1-3 May and the assessor, Chris Butcher, is expected to interview selected staff at RAL on 1 and 3 May and at DL on 2 May. Staff selected for interview will be notified in the week beginning 23 April and our advisor, Paul Temple, will be available to speak to them at RAL on 26 April and at DL on 27 April. We will be assessed against the 6 indicators that we failed to meet at our first assessment last June:

- 1.2 Employees at all levels are aware of the broad aims or vision of the organisation.
- 2.6 Objectives are set for training and development actions at the organisation, team and individual level.
- 3.2 Managers are effective in carrying out their responsibilities for training and developing employees.
- 3.3 Managers are actively involved in supporting employees to meet their training and development needs.
- 4.2 The organisation evaluates the impact of training and development actions in performance.

4.3 The organisation evaluates the contribution of training and development to the achievement of its goals and targets.

Progress

A recent internal audit of our progress against the above indicators showed the following:

- There are still some surprising gaps in staff's understanding of CLRC's mission and objectives. All managers are asked to find ways of reminding staff about the Council's three main objectives, which can be found on the Information for Staff web page.
- Objectives are not being consistently agreed with staff before they attend Learning and Development events, and are therefore not being reviewed afterwards. Please make sure that before you attend any learning activity you have agreed your learning objectives with your manager. All managers are encouraged to attend one of the two-hour workshops 'Reviewing and Evaluating Learning' which are currently running at RAL and DL.

The road users' corner

Hi and welcome to the road user forum. This section can be used by all you road users (two or four wheeled, petrol, diesel or sugar driven) who would like to share information, current MOT thinking, driving tips or air any 'it really makes me mad when...' topics. If you wish to join in just contact Alfie on the 'e' below.

Speed cameras - their use and abuse

There has been a lot of discussion lately about the use of speed cameras which appear to have been installed in places purely to boost local authorities' revenues, and not to reduce road traffic accidents. Local authorities stress that they are positioned to deter excessive speeding and reduce road traffic accidents (RTAs) in local 'black spots'. A lot of motorists say that the cameras are only there to trap them, as some cameras are positioned on dual carriageways and on A class roads, as well as in built up areas. So I asked the local authority what criteria are used to justify the £40 k per camera installation. They quoted the following two cases:

Case 1. A local, very busy dual carriageway of which a three-mile

section has double and single curves through a wooded area. Over the last few years there had been a steady increase in the number of RTAs and fatalities in the wooded section, so it was decided to place a 50-mph speed limit through the wooded section only. After a five-year study, it was found that there was still a steady increase in RTAs and the number of fatalities was increasing even faster. They then installed a camera 1.5 miles into the 50-mph section, and set the cameras' speed trip level to photograph any vehicle travelling over 70 mph. The system was started at 2pm mid week and the film cassette (400 twin exposures) as used up within three hours.

Case 2. The headmaster of a local primary school (sited on a busy A class road but in a 30 mph limit) had complained about the speed of traffic passing the school's main gate; in

Standards of staff management are inconsistent and many managers are not updating their management skills often enough. Managers are encouraged to take advantage of the management courses, workshops and other resources that are available from the Learning and Development teams.

CLRC's Standards of Management Excellence are currently being piloted in 6 areas of CLRC and it is hoped that this framework will provide a useful tool for identifying, clarifying and prioritising management development needs.

Finally...

You might be interested to know that our colleagues in PRARC and NRPB have recently been recommended for recognition. Please do all that you can to make sure that CLRC is successful in May.

If you have any questions or concerns please do not hesitate to contact me.

Rosie Sherry



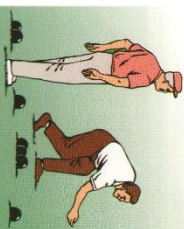
particular, at the school let out times. A traffic survey between 3pm and 3.30pm showed: 133 vehicles travelling at or below 35 mph; 232 vehicles travelling between 35 and 45 mph; 65 vehicles travelling between 45 and 55 mph; and 35 vehicles travelling over 55 mph. This is in a 30-mph speed limited section at primary school let out time. One fact that emerged was, of those vehicles being driven over 45 mph past the school, 85% of them had female drivers!

I'm sure you will draw your own conclusions from the above, but if you wish to voice your opinion on the camera phenomenon, or any other topic, please let me know. Safe driving everyone.

Alfie Neill
<alfie.neill@cclrc.ac.uk>

Short Mat Bowls

If you are interested
in playing or learning short mat bowls then do please come along to the RAL Sports Hall in R58 on Fridays at 12.15pm - 1.15pm, from 27 April to 29 May.



If there is sufficient interest this will become a regular event.

RAL Tennis Club

Just a reminder
that it's the start of a new tennis season and a single court is available for the use of all members of staff by joining the RAL Tennis Club (only £3 per year). Racquets and balls are provided if required.



Membership forms are available from David McPhail in R2, ext 6222 <dl.mphail@rl.ac.uk>

Snooker success

The snooker competition at this year's Indoor Sportsday was competed for as a singles tournament instead of the usual pairs format. This proved to be the right decision as the afternoon provided a nail-biting finale for the event.

Adopting a round-robin competition, the only person to achieve 100% failure was the organiser, David Farrell, who lost every game!

Steve Burge and Nick Fielden achieved four wins from their five games - Nick losing what would have been the deciding frame against Robin Burridge, Steve's regular partner in the pairs competition. In Steve's last two games results could have gone to either of his opponents Richard Lawrence and Richard Stephenson (who made a 27 break but narrowly lost on a black-ball game).



Nick Fielden and Steve Burge

And so it was Nick and Steve who went head-to-head in a final frame to claim the overall winner position. In their first game of the main competition Nick had won their game narrowly on a black-ball game, but the final was a more convincing win to Steve.

Congratulations to all the competitors for a very entertaining afternoon's snooker.

(Steve Burge also won the Paul Williams ranked which was reported to have been won by Richard Stephenson in last month's LabNews. Apologies Steve and congratulations on your double success! - Ed)

Richard Lawrence

Learning and Development

Learning Lunches

April	
26	Cash flow (DL)
May	
2	Motivation (RAL)
10	Work/life balance (DL)
16	Communicating with your team (RAL)
24	Complexities of the budget system (DL)
June	
7	Motivation (DL)
13	Emotional intelligence (RAL)
21	Communicating with your team (DL)
27	Interview skills for the interviewee (RAL)
July	
5	Emotional intelligence (DL)
11	Managing creativity (RAL)
12	Interview skills for the interviewee (DL)
18	Managing creativity (DL)

Longer workshops
25 - 26 April Coaching for performance improvement
This two-day workshop is designed to help people who manage staff. It will help you to get the best from your staff by developing your coaching skills and techniques.

Some forthcoming courses

Stress management
Work life balance
Coaching for performance improvement
NIERS Introduction to supervisory management
Presentation skills
Assertiveness
Finance for non-finance staff
Project practitioner's course
Effective selection



Congratulations

A placement student working in the Central Laser Facility has recently been awarded a 2nd degree black belt in 'The Kwon Do. Matthew Deer has been training in the art for over six years.

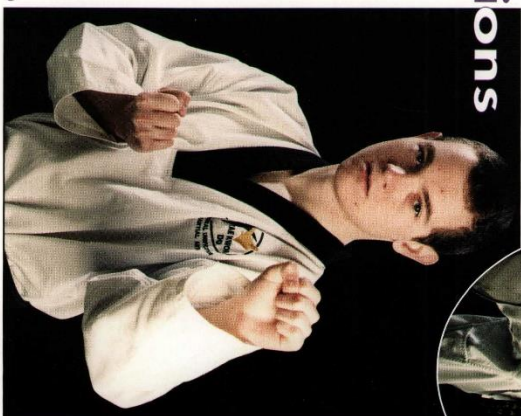
Matthew said 'The Kwon Do has helped me to encapsulate a positive attitude and given me a strong sense of purpose as a result of a new self-imposed discipline.

Achieving my 2nd degree black belt has given me the confidence to overcome new challenges. The grade of 2nd degree black belt has put me in a position to give back to my club and pass on more of the knowledge I have obtained to other students'.
The grading involved line work, patterns (12), destruction (breaking 2 inches of wood with both hand and foot techniques), fighting two opponents at once, sparring and theory.

Matthew's next goal is to win the English destruction championships and achieve his 3rd degree (there are nine in total).

Good luck Matthew!

(01R1C711) and above (01R1C716)



Retirements

Allan Smith

Allan Smith retired from ISIS recently after spending 36 years at the Laboratory.

Allan's first job was as a mechanical apprentice with a firm in Banbury who made milk bottle tops. He joined RAL as a craftsman in 1965 working initially in R7 instrument support. Later, Allan went to work on Nimrod as a changehand where he worked with Colin Thomas and Eddie Fitzharris. From there he went on to help build the 70 MeV linear accelerator, now used as the ISIS injector. Eddie once told Allan "you'll be working here for a little while" and he's been there on and off ever since, especially when there are RF window changes.

When volunteers were asked to man the ISIS shift back in 1985 Allan was one of the first. As a technician he provided support throughout ISIS and in particular in the target station where he developed a deep understanding of the moderators and other target services.

Allan was promoted to Assistant Duty Officer on Mike Armstrong's

shift in the early '90s. His all-round knowledge, reliability and dependability together with his methodical and safety first approach in dealing with problems and faults made him an ideal ADO. He has always been very keen to help and train newcomers into the shift.

Outside of the work place his interests include folk and jazz but his main love is walking. In his youth he belonged to a ramblers club where he was known as 'a mountain before breakfast-Smith' due his habit of rising early and legging it up nearby hills before his companions were even awake! He is a founder member of a select group of RAL walkers known as 'the old gits'. They are at present in the process of completing - in stages - the Cotswolds Way, a distance of some 120 miles.

In retirement Allan is going to partake of daily walks, repair the boiler, do up an old 'noddie' motor bike and go on a Canadian holiday. Peter Gean, who made the presentation to Allan said "Allan, you will be



(01RC1497)

badly missed on the ISIS shift. You are very much a team player with a keen sense of humour and you have made a very positive contribution to the success of ISIS over the years. Allan was presented with a digital camera, an extremely large pot of strawberry jam and a cake prepared to look like a jam sandwich. Apparently, Allan was rarely to be seen without a jam sandwich in his lunch box when on shift! His wife, Liz, received a bouquet of flowers.



(01RC1503)



customers, Ministry of Defence and opinion formers. QinetiQ was seen as particularly distinctive and reflects the organisation's spirit of innovation and creativity but also energy, motion and progress. It is a positive name, with connotations of speed, motion, energy, progress, bold, and assertive overtones, underpinned by a good, solid, technical ring'. So now you know.

Red Nose Day 2001
Many, many thanks to everyone who helped make RAL's red nose day activities a success - whether you sold raffle tickets, donated prizes for the raffle, took part in the competitions or simply gave your money!

It was a great day and a huge success - raising a total of £1050, so thanks again from everyone in Purchasing Group for your support and generosity.
There were 40 raffle prize-winners, four poster competition winners (Tim Durkin, Vicki Stowell, John Mackerness and Sally Gill) and the winner of the guess who? competition was Diane Rabbeets.

(01RC1820)



PPARC's awards schemes for public understanding of science and technology, 2001

Small awards
The next closing date for this scheme will be 10 October and you can apply for up to £10,000 per project.

The money may be used for any relevant purpose promoting PPARC-area science and technology. Note especially that awards can be used as mini PUS fellowships - they can pay for salaries for people doing short-term special projects, for example.

National awards
Closing date for Stage 1 of a two-stage National Award Scheme will be 10 July. You can apply for sums between £10,000 and £100,000 for projects making a major regional or national impact. Partnerships between researchers and other professional communicators or educators are encouraged.

Further information on both schemes is available from Steve Dawson <stevedawson@pparc.ac.uk> on 01793 442198. Notices for guidance, applications forms and all contact details are also available on the PPARC website. www.pparc.ac.uk/Rs/Fs/Pu/funds.asp

The launch of the ISS Intranet site for research councils
ISS are pleased to announce the launch of their intranet site. The site, which went live on 6 March, is part of a plan by ISS to give the scheme members as much easy to use and easy to understand information as is possible.

The Research Councils' Pension Scheme management board, all research council personnel groups and others with pensions/Internet expertise have reviewed the site. Wherever possible their comments and suggestions have been incorporated, making the information on the site clear and easy to read with pieces of pension jargon used.

The intranet site is a first step towards an independent internet site. ISS plan to introduce many additional

pages and facilities then. If you have any comment on the new intranet or suggestions for the internet site please email philip.grace@bhpsc.ac.uk or research-councils.ac.uk/jss

Dera becomes QinetiQ
From 2 July, the Defence Evaluation and Research Agency (DERA) will be split into two parts. The largest part (9,000 scientists) will leave the public sector and become a public limited company called QinetiQ (pronounced kinetic). The remaining 3,000 staff, including the Porton Down chemical and biological establishment, are to stay in the Ministry of Defence.

The following rationale behind the new name comes from their press release. 'The new name has been derived from the scientific term, kinetic (phonetic: ki'ne tic), which means 'relating to or caused by motion'. This in turn comes from the Greek, *kinētikos* based on *kino* which means 'to move'. It was carefully chosen as the outright winner from an original list of 400 which resulted from extensive analysis of all our capabilities and strengths. Using strict criteria the list was refined and a short-list taken through MORI research amongst staff.