

# ECHO

THE NEWSLETTER OF THE CULHAM SCIENCE CENTRE & HARWELL BUSINESS CENTRE

MAY 2001

## The MRC Harwell lecture

'Scrambled Eggs' by Lord Robert Winston, professor of fertility studies, Imperial School of Medicine, London University.

Lord Winston needs little introduction as, due to his award winning television programmes including 'Your Life In Their Hands', he is one of the best known scientists in the UK today.

Lord Winston and his research team have combined greatly to the world of assisted reproductive technology (ART). Some recent major achievements include the birth of the first baby after DNA testing to avoid sex-linked disease (eg. muscular dystrophy, haemophilia), the first babies born after identification to avoid single gene defects (eg. cystic fibrosis) and the first babies born after screening preimplantation embryos for chromosome defects.

In vitro fertilisation (IVF) is regularly used to help couples who have difficulty conceiving naturally, but there is still only a 15-18% chance of success. An important factor is the quality of eggs and here the age of the female is critical, 24-30 years old being the optimal age for IVF. Many women are very infertile by 40 and beyond this age a lot of chromosome defects become evident. The incidence of Down's syndrome (trisomy 21) is relatively common in mothers over 40.

There are only three chromosomes, 13, 18 and 21, for which trisomy is viable. Trisomies of all other chromosomes spontaneously abort. Down's syndrome habits are the most common of the viable trisomies probably due to the small size of the chromosome involved. If donor eggs from young females are employed for IVF then the mother's age becomes far less critical, hence the birth in Rome to a female at the age of 65. The advent of preimplanta-



tion diagnostic techniques has opened up vast new opportunities. These procedures allow the removal by microsurgery of one or two cells from an 8-cell embryo for subsequent DNA or chromosome analysis. If the biopsied cells prove normal the embryo can be implanted into the mother with a reasonable chance of a successful pregnancy and a healthy child. Unfortunately this technology is controversial and has led to the public notion of 'designer babies'.

Lord Winston noted that public attitudes are easily influenced by emotive or inaccurate reporting in the press. He also discussed the controversial subject of possible human cloning. He did not envisage human cloning in the near future as animal cloning currently produces mostly abnormal embryos and foetuses.

Lord Winston also talked about the use of animals in research and said that properly conducted and regulated animal research was absolutely essential

to scientific progress in medicine. The role of a new House of Lords Select Committee will examine the working of the Animals (Scientific Procedures) Act 1986 and he explained that all members of this committee were non-scientists. Lord Winston felt that this was probably a good thing as prejudice will be limited. He stressed the importance of the need to study gene function and how manageness research such as that carried out at Harwell was critical in generating new mouse models of human genetic disorders.

Lord Winston ended his fascinating lecture by talking about his role in the House of Lords and advised scientists that communication is all. He warned that scientists must improve communication with the general public or we will face a more difficult time in future years.

## Harwell D-Day service

Everyone is welcome to attend the annual Harwell D-Day memorial service on Saturday 2 June at 5.30pm. Held at the Frome Road memorial stone the service will be conducted by Rev. Chris Stott and lasts approximately 20 minutes. Wreaths will be laid by local British Legion groups.



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The need for such an agreement was identified as part of the launch arrangements for Harwell International Business Centre. It was clear that potential occupiers wanted new buildings designed for their needs but did not wish to develop the premises themselves. At the same time UKAEA does not have the ability to invest in new buildings and it is government policy to work with the private sector where appropriate. Prologis is one of the largest developers of business space in the UK and was selected through a competition process involving over 20 interested parties at the outset. As a self-financing partner Prologis could offer a proven track record in the development of large-scale business parks. The presentations were concluded by UKAEA's Steven Mass presenting Jason Dalby with a bottle of champagne to celebrate the recent birth of his new daughter.

## Landmark agreement signed

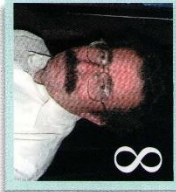


From left, Robert Jackson MP, John McKewen and Jason Dalby, at the launch event. Staff from A&V Engineering Software have now moved into the new Gemini building.

UKAEA has signed a landmark agreement with Prologis Developments Ltd that will fundamentally change the face of Harwell International Business Centre.

The deal is a strategic alliance between public and private sectors that will pave the way for 120,000 sq ft of development over a three-year term. The agreement is a cornerstone of a long-term strategic plan to develop Harwell International Business Centre as the UK's leading location for companies working in the fields of science and technology. When complete the new development will have a capacity for up to 1,000 jobs. Some one hundred business leaders and representatives from the property sector attended an event in April to mark the signing of the new agreement and to celebrate the

completion of the Gemini Building, the first bespoke development by Prologis at Harwell. Robert Jackson MP spoke about how he had watched the site evolve over the past 20 years. "A transformation is taking place that demonstrates how the site has adapted and responded to changing economic circumstances. Oxonshire is an area of high employment but we welcome high quality developments like this that will add to the growth of the economy at a local and national level," he said. Dr John McKewen, UKAEA chief executive, told guests, "The development is an important element of the environmental restoration of the site. It meets the UKAEA's greatest gain from its assets." Jason Dalby, joint MD of Prologis Development Ltd, said he had come to know UKAEA and its business over the last two years and looked forward to the prospect of working together to develop further units on site. He praised UKAEA staff for their property expertise and a determination to see a project through to a successful conclusion. "Harwell is one of the best locations in the country for companies working in the science sector. With this agreement in place we can deliver the bespoke buildings that are demanded by such businesses," he said.



Lord Winston's lecture



This month Guardian feature



Thunderbirds are go!



Spring flowers



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### Intolytica Limited

Intolytica Limited has recently relocated to C2 at the Culham Innovation Centre. Business expansion meant that the company had outgrown its existing office space at Milton Park and needed a room for future growth.

The company specialises in the supply of electromagnetic, electrostatic, and electric motor design software to both industry and the academic world. It is the longest established supplier of commercial software in this sector, with a first sale to Black & Decker back in 1978!

Together with its sister company Intolyca, Corporation in Montreal, the organisation has an international reputation for innovation in the field of CAD, having pioneered most of the techniques now employed in modern magnetic design software. Recently a thermal simulation capability has been added to the portfolio.

Typical devices designed with the aid of Intolytica software



include electric motors and generators of all types, loudspeakers and electro-mechanical shakers, computer hard disk drives, MRI body-scanning equipment, actuators, levitators, particle separators, electromagnetic launch equipment, and screening devices.

MD Professor Ernie Freeman comments "We like the sense of light and space in our new offices, and the conference, library, and lecture theatre. This, together with the excellent restaurant and shop facilities make Culham Science Centre an ideal location for us."

### Free advice and win £500

Young entrepreneurs with bright ideas for developing their plans will have the opportunity to see the UK's most experienced business advisers at this year's **Venturesat at Culham Science Centre.**

The Young Persons' Business Plan Clinic, on 26 June, is open to anyone aged between 16 and 25 seeking assistance with a fledgling business concept. On offer to the best plan is a cash prize of £500. Last year's winner was Unique Students, an internet-based student service company established by two graduates which is now run from the Harwell Innovation Centre.

To apply for a free 30-minute clinic session, entrants should email a one-page business summary (as a WORD file attachment) to Dr. Russell Smith at russell@businessbothins.com before 30 May 2001.

Venturesat is an international event that brings together entrepreneurs, investors and support services to provide the advice, ideas and funding necessary to launch a successful new technology-based business. This year's event is to be held on 25 and 26 June at the Culham Science Centre. See [www.venturesat.com](http://www.venturesat.com) for more details.



### SmartSensor telemetered

Based at Harwell Innovation Centre, SmartSensor telemetered is a start-up company. The business is supported by equity investment from Inno-Ox, the Oxford based technology/business incubator, and by two DTI Smart awards. SmartSensor recently won the category 'Most Innovative e-Commerce Strategy' at the Global Pharmaceutical Awards 2001.

The company aims to revolutionise disease management by making mass screening, diagnostic and monitoring tests readily accessible and economically viable through a unique approach to patient self-testing. SmartSensor's technology enables a total managed healthcare environment. This encompasses early detection of major diseases, feedback and assistance for newly diagnosed patients. It also includes lifetime patient monitoring.

SmartSensor's vision is set to bring substantial benefits to users and providers of healthcare alike. The SmartSensor technology was invented by James Jackson and is protected by worldwide patents.

### The Target Practice

Assessing the likelihood of success in the marketplace is the specialty of a new marketing services company at the Culham Innovation Centre called **The Target Practice.**

Innovation is sometimes defined as the application of invention. Any invention needs a market, and market places are always looking to be stimulated by new ideas and new products. Unfortunately, inventors and innovators are not always the best at defining the market for their ideas.

The key to success is an effective market research that seeks to understand how ideas and products fit into marketplaces. The main area of expertise for The Target Practice is consumer markets.

Lawrence Coslett is an organic chemist who worked for many years before a successful marketing career in the food industry. He has much experience of running innovation programmes and launching new consumer products, and that expertise is now being brought to a wider market with The Target Practice. The style of market research needed to drive innovation is not survey or opinion research but one that assesses consumer's behaviour and also tests their cognition and understanding of ideas and product concepts. Lawrence is looking forward to working on some high technology products that will have an impact on consumer's lives.



## Ahead of expectations

### Harwell Innovation Centre celebrates first anniversary



Some of the staff of these companies, many of the Harwell Innovation Centre staff, managers, Harwell Innovation Centre front

May 2001 sees the first anniversary of the Harwell Innovation Centre. Managed by Oxford Innovation, it is the largest of ten centres. Since launch it has achieved considerable success, outperforming targets for occupation by more than 30 per cent. Harwell Innovation Centre is well on course to house 40 companies, employing about 200 people, by the end of this year.

Dr David Kingham, chief executive of Oxford Innovation, said, "Our innovations, chief executive of Oxford Innovation, premises for new science, technology, knowledge-based and creative companies. Harwell has a very strong brand name among scientists and engineers and there is an entrepreneurial streak in the local economy. It is therefore not surprising that the centre has attracted so many interesting businesses, though the uptake of space has been much faster than we expected.

"UKAEA has helped enormously in the process to help us get established. Building on the success of Harwell, I am delighted that we have opened a new centre at Culham this year, again with strong support from UKAEA."

The Harwell centre is currently home to 24 companies, employing around 120 staff. Just over half the available space - some 12,500 sq ft - has been let to date.

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Culham Innovation Centre Tel: 01865 408300 Email: [ballswoth@oxin.co.uk](mailto:ballswoth@oxin.co.uk)

### Another APM award

Malcolm West, last year's winner of the Sir Henry Finiston Award for Project Management, has once again been recognised by the Association of Project Management (APM), Malcom, who works in AEA Technology's environment, business, has encouraged many people to join the APM, boosting APM membership to more than 100. For his successful recruitment drive Malcom and his wife have won a European city break. The prize was presented to him by APM chief executive Richard Strange. The APM has a busy programme of activities to help project managers further their professional development through training and shared experience.



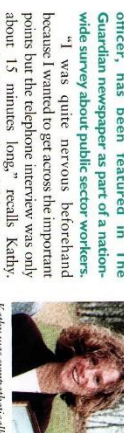
Pictured (from left): Richard Strange, John Phillpott, president of AEA's Project Management Association, and Malcolm West with Sir Henry Finiston award

### Guardian survey features Kathy

An interview with Kathy Stark, a UKAEA environmental systems officer, has been featured in The Guardian newspaper as part of a nationwide survey about public sector workers. "I was quite nervous beforehand because I wanted to get across the important points but the telephone interview was only about 15 minutes long," recalls Kathy. "The journalist, Andrew Gillchrist, was a nice Scots guy and put me at my ease."

The Guardian project involved hundreds of interviews with people working in the public sector from high court judges to street cleaners and from maternity nurses to firemen. The newspaper carried workplace portraits of these individuals covering topics such as vocation, duties, pay and why they had chosen employment in the public rather than the private sector.

Kathy explained how her job involved environmental management at the 800-acre Harwell site including important decommissioning work. When asked about the service aspect of her work, Kathy said, "I feel valued in my job and I would say it's a sort of vocation. It's not just about pay, it's about conditions, pension and the people you work with."



Kathy was sympathetically greeted by the journalist.

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## OUT & ABOUT

### Garden fete

The East Hendred annual garden fete will take place on Saturday 19 May from 12noon to 4.30pm. Held in the grounds of Hendred House the fete will include traditional stalls and attractions such as a fun fair, tug-of-war and a wheelbarrow race. There will also be a barbecue, refreshments and bar. Call Sue on 01235 833451 for details.

### Family history open day

The Berkshire Family History Society is holding an open day on Saturday 19th May. The event takes place at Larkmead School in Abingdon between 10am-4pm. Admission is free and interesting exhibits include the 1881 Census index, soldiers who died in WW1, family history research advice, a computer help room, Oxford Record Office and family history societies from surrounding counties.

### Spring Craft Fair

On Sunday 20 May there will be a Spring Craft Fair at Hagbourne School and Village Hall, East Hagbourne, near Didcot, from 11.30am - 4.30pm. There will be over 50 stalls. Entry: 75p (children free). Homemade refreshments will be available all day. Details 01235 830688.

### 1000 years of Meccano

A century exhibition '100 years of Meccano - Tops of Quality' is being held at Didcot Railway Centre from Saturday 26 to Monday 28 May. Organized by the Hornby Railway Collectors' Association, there will be displays of Meccano models and vintage products, working layouts of Hornby Orange and Hornby Dido trains, Dinky Toys and sales stands. The event marks the invention of 'Mechanics Made Easy' by Frank Hornby of Liverpool in 1901. The toy soon became world famous as Meccano.

## Murphy's

W e are a nation of animal lovers and proof of this dedication can be found at Culham, where an AEA Technology employee has devoted the majority of her spare time to her family of dogs. Marilyne Lade and her husband, Derek, live with seven golden retrievers, aged from 14 years to 9months, and spend most weekends travelling far and wide to compete at dog shows.

Two and a half year old Murphy, or to give him his pedigree name, Gillibryan Partner in Crime with Mantonian, is a great success on the show circuit. He is highly rated for his gentle head and good conformation or bone structure. After one successful mating Murphy will hopefully become a popular choice of sire in the future.

Her love of the breed began 25 years ago when a colleague brought a golden into work. A few years later she entered her dog William in a show and scored

## magic



Marilyne has had new photographs taken to show Murphy at his best, for inclusion in the Golden Retriever Club yearbook.

second place and the 'big bit'. Today Marilyne is extremely knowledgeable about golden retrievers and is herself a judge.

For anyone starting out the recommends local village shows, where there are classes for pedigreees and those of the 'Heinz' variety. The next stage would be 'open' shows and for the elite competitors, championship shows and Crufts.

"Golden retrievers and Labradorers make up the biggest entry at many shows so your dog has to be exceptionally good to win through," says Marilyne. "I don't like to bath a dog too often as it strips the coat of its natural oils. Besides, when it comes to getting Murphy dry I always do several laps of the kitchen with the hand dryer!"

If anyone would like to know more about showing, obedience, agility, or for general advice Marilyne can be contacted on e-mail mlhumberden@btinternet.com or 07769 690523 (mobile).

## 'Thunderbirds are go!'

One of the most popular National Science Week events in Oxfordshire was held at Culham. Gerry Anderson, creator of the cult TV series 'Thunderbirds', gave a talk about the special effects and techniques used in his work to a capacity audience of over two hundred avid fans.

In a local radio interview that day Gerry said how pleased he was to find his films attracting a whole new generation of viewers. It was obvious that the children had no problems per-



A new Captain Scarlet film will be screened next year.



Gerry Anderson with journalist, Tom Tramm, who accepted the donation on behalf of the local air ambulance team.

suading their parents to bring them along (or was it the other way around!).

Gerry explained in his talk that originally he had no intention of being a puppeteer. Indeed the famous puppet wires were nowhere to be seen in a preview clip of a new 'Captain Scarlet' film that he hopes will be screened on TV next year. The next generation of Gerry's films

feature state-of-the-art computer generated graphics. The event raised over £1000 for his favourite charity, the Thames Valley and Chiltern Air Ambulance Trust.

UKAEA's Heather Clark of the Culham PK team organised the event and commented "It was a great success and the Trust was really thrilled and astonished to receive such a large cheque."

## Harwell Spring flowers

Spring flowers bring to mind primroses and violets, which are woodland species, as well as cowslips which are the equivalent of primroses in grassland. How many are present at Harwell? Cowslips have established well in a number of new grassland and wildflower seedlings, by the Harweg 9 and Dido road lagoons, and in fragments of old grassland by the disused runways outside the perimeter fence.



Primroses have established well.

Woodland flowers are less abundant, apart from some clumps of primroses and a nice showing of violets. There are good reasons for this. Harwell was never a woodland site.

Most of the trees date from the end of the RLP period. Even the older ash trees at Marshill have almost no woodland flowers, but the structure is there both at Marshill and at the mound, and with a helping hand, a good



Thriving violets.

variety of woodland flowers could be established.

The violets are rather a special case. Normally woodland plants, they survive on the edge of rides or in hedgerows where light is adequate but competition from other species not too severe. The blue or dog

violets occur on the edge of Marshill but they are spectacular in full sunlight in company with white violets on the corner of the old Chilton field housing site, because of the intensity of rabbit grazing. Rabbits do not eat violets so the grass is kept short and the violets thrive.

## A vision for Rutherford Appleton Laboratory

### Professor John Wood, chief executive, CCLRC

On arriving at RAL a few weeks ago from a university background of over 30 years, the one thing that struck me about the laboratory is its people. While this is easy to say, it is true that our real strength is not buildings, facilities or even our illustrations in developing a vision, it starts with people.



Where is the science base that we facilitate going to be in 20 years time and how do we get there? This is the question I have set and one the staff and experts from around the world, including those in universities nearby, are helping answer. From this we are developing our plans for facilities, and the research community that will be on the site in the future.

Our immediate horizon is dominated by Diamond and all that will result from this. This prestige facility will be the focus of our site and attract world beating scientists from many disciplines including those from the medical and biological communities that have only recently come to see how light sources can advance research and development in pharmaceuticals etc. While that will be the immediate jewel we are expecting to serve the scientific community with a second neutron target station as a result of the great success of ISIS, further developments in laser



and nanotechnology will also take place, again with communities that have not traditionally used physical techniques.

So the vision is for an intellectual hub of scientists and facilities that will attract the best from around the world. High sounding words, but we have an opportunity for growth which is greater than at any time in the recent past. Of course this will mean an extensive building and refurbishment programme that will greatly enhance the site visually. Whatever the future it will be exciting.

### For safety's sake

Dial the 177 Help Line for all your safety enquiries. This will connect you directly to the HSED Safety Section who will provide you with a prompt reply. If we can't answer your query immediately, we know somebody who can! The facility is available to all Southern Sites - no site dialling code necessary. Issued by HSED, B152, Harwell

### Abingdon korfbal

Korfbal is a mixed-sex sport which is a fast-moving relation of basketball and netball. The Abingdon Korfbal Club was formed last year and in its first year won the Oxfordshire League (comprising five teams). Korfbal is a great way of having fun, meeting new people and keeping fit. The club is keen to recruit new members and everyone

### Abingdon korfbal

is welcome, no matter what your ability. The club plays outside on the field of John Mason School on Tuesdays between 6.30-8pm throughout the summer. In the winter season play continues indoors.

Dave Butler of AEA Technology is a member and would be happy to explain about the game. Dave can be contacted on Culham x3343.

### SAFETY Update

There has been one reportable incident at Harwell and none at Culham since the last issue of ECHO. A contractor sprained his thumb whilst handling conductive materials and was off work for more than three days, which made the event reportable under RIDDOR.



