



connect



AWE scientist Prina Mistry... "It is good for the girls to see women demonstrate how to apply physics"

Physics pupils vote AWE scientists number one

An "explosive" demonstration by a team of AWE's scientists won joint first prize at the Physics at Work Exhibition.

AWE's presentation, which included exploding custard powder, was voted the joint winner by the 2,500 GCSE pupils who attended the exhibition at the University of Cambridge's Cavendish Laboratory.

AWE scientists, including Tristan Matthias, Dave Bell and Prina Mistry, wowed the pupils with *Explosive Physics*, demonstrating the concept of sound waves by lighting gas inside a Ruben's tube and illustrating an explosion by

setting custard powder alight.

Prina said: "I think the demonstration inspires pupils to learn more about science or turn around their views of a subject they might find boring at school."

Prina was also pleased to see more girls showing an interest in physics.

"An increasing number of girls are choosing to study physics – traditionally, a subject which sees boys outnumber girls by the time it becomes optional at school," said Prina.

"It is good for the girls to see women demonstrate how to apply physics."

The three-day event – which aims to stimulate interest and encourage wider participation in physics among 14-16 year-olds by showcasing how physics is used in the everyday world – was attended by 25 different research groups and companies. The pupils were asked to score the presentations and the AWE team was voted joint winners alongside a team from the university.

● AWE is committed to working with young people to encourage interest in science, engineering and technology as part of its Schools Liaison Scheme.

Flying squad rescues falcon!

A feathered intruder gave some of AWE's construction workers a surprise when Blackberry the falcon paid an unexpected visit.

Contractors were carrying out routine work near the fence at Boiler House gate, Aldermaston, when they noticed the bird.

One of the men put on leather gloves and helped to retrieve the falcon. With the help of the local environment department, the next step was to track down a falconer who contacted the Independent Bird Register (IBR). The IBR used its register to identify the owner, Helen Pring, who lives in Somerset.

Helen was delighted as Blackberry, a barbary/peregrine cross, had been stolen a month earlier.

Helen said: "I really thought I would never see her again, as she is not the best of hunters. I put posters up wherever I could think of and went on the local radio to try to find her. I called the IBR with her ring number and told them she was missing, but I heard nothing at all.

"When I got a phone call from the IBR, they told me Blackberry had been found and caught at AWE.

"I can't tell you how pleased I was to see her. I really thought I'd never see her alive again after a month in the wild.

"Thank you to everyone at AWE who helped to bring her home safely."



Blackberry the falcon



AWE's Simon Hall, Linda Llewellyn and Michele Maidment present the £1,000 cheque to Deborah Speirs from Naomi House

Cash boost for hospice

A £1,000 donation by AWE's Community Committee has boosted a charity that provides support to children and young adults with life-limiting conditions.

Naomi House and jacksplace in Winchester are hospices for children and young adults with conditions that mean they are unlikely to live to become adults.

Deborah Speirs, corporate fundraising manager for the charity, said: "This donation will enable us to continue to provide respite breaks, emergency support, hospice at home care and family support free of charge to local families."

AWE employees also support the charity – firefighter Simon Hall volunteers on a regular basis and raised more than £600 on a 24-hour cycle ride.

He said: "It's a local charity to me and I know the work they do is outstanding. The support they give to families nearby is fantastic and you can see how much of a difference it makes to their lives."

Work the topic of Big Conversation

The benefits of an apprenticeship at AWE were explained by managing director Andrew Jupp and apprentice Louis McGee at Business in the Community's Big Conversation in London.

The event gave employers the opportunity to share experiences with young people still in full-time education.

Louis, a final-year electronics apprentice working in control and instrumentation, talked to the youngsters about AWE's apprentice scheme.

Louis said: "The discussion was really positive – in our group we discussed the work ethic, attitudes and behaviours that you need at work and how different this is to when you're in the education system."

Business leaders, including Andrew

Jupp, took part in the Big Conversation with young people about the working world and what they could expect from joining an in-house apprentice scheme.

Andrew said: "The conversation was a really valuable experience in understanding the challenges young people are facing in getting their first job and their motivations for work.

"Our apprentice scheme has always been a core part of ensuring we have the right technical skills to deliver the programme.

"This event was a great opportunity to share what our scheme had to offer and the benefits that completing an apprentice scheme can bring."

Apprentices welcomed

AWE has welcomed its latest intake of 43 new apprentices.

The apprenticeships will be undertaken in a variety of engineering and technical disciplines which are essential skills required to underpin the company's mission of providing and maintaining the warheads for the country's nuclear deterrent as well as supporting the government in national security and counter-terrorism.

The award-winning apprentice training scheme at AWE is entering its 60th year of continuous training and development.

The company currently employs close to 500 former apprentices, many in managerial and supervisory roles.

The scheme takes between 36 and 48 months to complete and combines both technical knowledge and practical skills, resulting in nationally-recognised qualifications, and instils AWE's values and safety culture.

● If you would like to find out more about the company's apprenticeship scheme, visit www.awe.co.uk/careers/apprenticeships.

Safety award marks 11 years of success

AWE's outstanding health and safety record has been recognised with a national award.

The company received the President's Award for its occupational health and safety standards at this year's Royal Society for the Prevention of Accidents (RoSPA) awards.

The President's Award is presented to those organisations who have received 10 to 14 consecutive RoSPA Gold Awards – AWE has received 11.

Gold Awards are presented for the highest levels of performance and well-developed occupational, health and safety management systems, as well as a supporting safety culture.

Heather Young, AWE's director of Environment, Safety, Health and Quality, said: "This is a wonderful achievement for us and



With the RoSPA award are, left to right, Paul Willis, Paul Rees, Heather Young, Colin Reeves and Jack Mason

a great reflection of delivering excellence.

"Being recognised in this way by the highly-respected programme is real testimony to our commitment to maintaining our focus on safe, secure and

clean in all our operations."

● To add to the company's success, AWE's construction management department was awarded a RoSPA Gold Medal for five consecutive Gold Awards.



Hurst Community College's rocket on its way to winning the longest flight prize

Pressure no problem for rocket scientists

Teams of budding young scientists launched themselves into AWE's Water Rocket Challenge.

The challenge – for 14 and 15-year-olds at schools on the company's Schools Liaison Scheme – was to use a combination of water and air pressure to propel a rocket made from a family-sized fizzy drinks bottle.

Entries were judged on distance, time in the air, overall design and how much of a crowd-pleaser they were.

The overall prize was won by the event's hosts, the Mary Hare School in Newbury.

Hurst Community College in Baughurst won prizes for the longest flight and for good team working. The Clere School in Burghclere won a prize for the best launch mechanism, while Kennet School in Thatcham and the Vyne School in Basingstoke were joint winners of the most crowd-pleasing effort.

The challenge is part of AWE's

AWESome Education programme which aims to nurture the interest of young people in science, engineering and technology.

Gary Butler, head of national nuclear security at AWE, presented the prizes. He said: "Challenges like this are designed to show how science and engineering can be great fun.

"At the same time, without using basic science and engineering principles these rockets wouldn't have worked."

The inside job



Safety governs every step

Working in contaminated areas doesn't faze Adam Blake and Gareth Bridger.

"We're perfectly comfortable with it," said Adam, who – like Gareth – has been decommissioning out-of-use buildings and equipment for more than four years.

"We're so heavily trained, we know exactly what we're doing. We follow a safe system of work which covers every

single step of the process."

Gareth enjoys the job's physical work: "It's very hands-on and time goes quickly when you're busy.

"The metal glove boxes in the lab we're decommissioning are about three metres long and a metre deep. As well as drills and saws, we also have Brock, which is like a remote-controlled JCB with a drill."

Gareth Bridger, left, and Adam Blake dismantling an out-of-use lab

Safely dismantling AWE's out-of-use facilities and equipment is not just about dealing with the company's past, it's vital for building its future. *Connect* suits up to find out more about the expert decommissioning team...

Sweating hard inside his protective suit as he cuts through old shelving, Adam Blake is working to dismantle another out-of-use AWE lab.

"It gets pretty hot inside all the kit, especially in the summer," said Adam, who is with fellow frontline worker Gareth Bridger in the 1950s building.

"We're taking down the shelves and racking first to give us some space before starting on the four glove boxes.

"Two were for radioactive materials and two for chemicals. We unbolt as much as possible but then need to use power tools."

The pair are part of a 14-strong Directorate Site group that specialises in decommissioning facilities and equipment that have had their day.

Given AWE's 60 years of scientific history, Mark Hedges, head of environmental operations projects, said decommissioning teams past and present have had to face some complex and challenging facilities over the years.

"In handling our legacy areas, part of our success has been down to developing a unique range of skills that has led the way in nuclear decommissioning, while maintaining excellent assurance performance," said Mark.

The safe dismantling and disposal of old buildings and equipment is essential for the business and has played a key role in achieving recent planning

approvals for new manufacturing facilities.

Jim Robertson, senior project manager, said the team's expertise is important for future developments.

"We've learned from our history. The knowledge we've gained through decommissioning is factored in at the design stage of new construction programmes."

Mark and his team recognise the expectations on the company in the future.

"As successful as we've been to date, decommissioning thinking must move forward," said Mark.

"So, we have been developing a holistic approach to the management of wastes that arise from our operations, with the aim of reducing further any environmental impact." The approach offers many benefits, including improved safety, savings in costs and time and a better understanding of scope, schedule and cost and risk mitigation strategies.

Ian Barnes, senior project manager, said: "A waste-led focus will reduce the need for on-site storage of intermediate level waste by approaching decommissioning differently and applying different tools and techniques, both physical and procedural."

The new method is being tried and tested across six current building projects.

factfile



Left to right, Ian Barnes, Mark Hedges, Jim Robertson and Andrew Payne

AWE's decommissioning teams have clocked up more than three million hours without a lost time accident since 2002. Their work has included:

- handling 203 gloveboxes and 20 fume cupboards
- de-watering and placing a research reactor in a safe state
- removing a used fuel store
- demolishing a number of experimental research facilities and a tritium facility, a depleted uranium facility and an effluent gantry project.

Backbone of the business

Delivering the programme is all about AWE's engineering expertise, from the design of the company's many research and production facilities to the warhead itself. *Connect* sees how safe, secure and clean is built in at every stage...

From drawing board to wrecking ball, engineers across AWE ensure the company's facilities are safe, secure and clean throughout their working life.

Whether it's their design, maintenance, re-kitting refurbishment or, ultimately, their decommissioning, AWE's expert teams handle each phase through a system of standards, processes, controls and double-checks that is continually being updated.

Many of them are written and carried out by the 400-strong team led by Mike Hedges, head of engineering,

"I passionately believe engineering is the backbone of AWE's ability to meet excellence in safe, secure and clean," said Mike, who is responsible for facility and infrastructure design, from whole buildings and revamps down to small modifications.

"Safe, secure and clean facilities enable our operations to perform.

"As part of 'safe', our designs meet all the requirements of the Health and Safety Executive and the Office of Nuclear Regulation; for 'secure' our designs meet MOD standards; and for 'clean' we meet the Environment Agency requirements."

Mike's Directorate Major Projects team writes the standards and processes that govern how all designs are produced, competency test the experts creating them and then handle



Dave Murray, right, with AWE colleague Keith Warburton

independent verification to ensure they are fit for purpose.

"We've had very good feedback from the MOD, the Health and Safety Executive and external stakeholders to say we're good at what we do," said Mike.

"Although we're up with the best in how we deliver and verify, we're not complacent and we strive to continually improve."

Mike works closely with Dave Murray, whose Directorate Site teams keep more than 1,500 buildings compliant and available to satisfy programme demand.

"Just about everything we do is about safe, secure and clean," said Dave, head of engineering current facilities.

"My guys provide the engineering nous to make sure all buildings, infrastructure and plant are compliant and satisfy their safety cases by adopting appropriate engineering and

maintenance processes and procedures."

Much of their effectiveness is down to last year's restructure that created much closer links between engineers in different directorates.

"We're talking about some 600 people in a new engineering function that allows us to flex and get greater resource utilisation towards our aim of providing safe plant and equipment," said Dave.

The shake-up also created nine principal asset engineers. Embedded across the business, they have been very successful in enhancing the way engineering and maintenance is governed and carried out.

"They're ensuring improvements in overall safety performance and a significant reduction in maintenance backlog," said Dave. "I'm very pleased with how quickly the team have gelled and raised their game."

Award delights Debbie

More than 200 guests attended the annual AWE Celebrate Success awards where hard work and dedication were recognised.

The event included awards for achievements in the science, engineering and technology fields alongside awards for meeting business objectives.

Debbie Leadbetter won the Heart Award for the voluntary work she does for the South Central Ambulance Service as a community first responder for Tadley and the surrounding area.

Debbie has worked as a responder for more than two years. She attends any life-

threatening emergency within the local area under the direction of the ambulance service.

In sometimes difficult and emotional situations, she has to keep a calm and clear head to give the right emergency treatment before the professional ambulance service arrives.

She said: "I was very surprised to receive this award as I felt just being nominated and then being invited to the Celebrate Success night was enough recognition for me.

"I enjoy being a first responder as it gives me the opportunity to help others."

AWE-sponsored conference debates nuclear future

Experts in the field of nuclear weapons and policy met at the inaugural UK Project on Nuclear Issues (UK PONI) Conference – which was sponsored by AWE.

The event, *The Last and Next 60 Years of the UK's Nuclear Deterrent*, was held at the Royal United Services Institute (RUSI) in London.

UK PONI is an initiative in collaboration with RUSI to create an open forum for debate in the UK on issues surrounding the ownership of nuclear weapons.

The PONI forum is well established in the US and managed by the Center for Strategic and International Studies, but this event was the first of its kind in the UK.

The UK PONI Conference considered the lessons learned from 60 years of the UK's ownership of nuclear weapons and assessed changes and developments that could occur in the nuclear landscape over the coming years.

Leading representatives from UK government, industry and academia, including the Ministry of Defence, Dstl, Babcock, Lockheed Martin, BAE Systems, Rolls-Royce, King's College London, University College London and the International Institute of Strategic Studies, attended the event.

AWE's managing director Andrew Jupp said: "This was a great first event that set in place a new forum for debate about the

future of nuclear issues. We were pleased to sponsor this venture and will continue to support future events.

"The presentations and contributions by the AWE team were first class and demonstrated the excellent work undertaken by our people. AWE looks forward to supporting the future of UK PONI and its conferences."

Topics of discussion included nuclear geopolitics, future technological considerations for nuclear issues, the Royal Air Force and the nuclear deterrent, natural resource scarcity and nuclear proliferation, and balancing technology and requirements in future systems.

Egg-citing challenge for young engineers!

Local schools from Berkshire and Hampshire put their design and engineering skills to the test when they competed in AWE's annual Schools Engineering Challenge.

Pupils from 10 schools attended the event at the Tadley Community Centre.

A team of AWE's engineering graduates had put together the task – which they called Project Benedict.

The young engineers, aged between 14 and 15, had to design, build and test a structure to protect a raw egg from destruction during a number of gruelling tests.

All materials were supplied to them on the morning of the challenge and each were priced according to their strength. So, the secret to winning was to create a strong structure within a carefully-managed budget.

The event demonstrated the importance of teamwork, material selection and planning – all vital aspects of a career in engineering or science.

First prize was awarded to the team from St Bartholomew's School in Newbury. The team received £750 to spend on scientific or technical equipment for their school.

Second place went to Little Heath School in Tilehurst. The school's science department received £500.

Third prize went to Kendrick Girls School in Reading, with the science department receiving £250.

AWE managing director Andrew Jupp, who presented the prizes, said: "Science and engineering skills are really important to the country which is why we run these competitions to nurture interest in these



Kendrick School deep in concentration, and inset, winners St Bartholomew's are presented with the trophy by AWE managing director Andrew Jupp

important areas. This challenge was all about teamwork; you needed a balance of good planning, engineering skills and budget management.

"It is wonderful to see your enthusiasm and I have been impressed by the results."

Schools Liaison chairwoman Philippa Kent said: "The challenge was a great success and the teams this year were particularly innovative. We enjoy working closely with local schools to encourage interest in science, engineering and technology."



Debbie Leadbetter with AWE MD Andrew Jupp and director of Environment, Safety, Health and Quality Heather Young

Celebrate
at AWE awards
2011

Lunch club gets tasty donation

AWE has continued its important links with a local charity by supporting Tadley Age Concern with a donation.

The company's Community Committee has given £1,000 to the lunch club which meets every Tuesday to provide a hot meal, entertainment and a chance to socialise.

The cheque will go towards the cost of a new public address system and the annual Christmas dinner.

Lynda Mead, chair of Tadley Age Concern, who also worked at AWE for a number of years and was herself a Community Committee member, said: "The lunch club helps to promote the wellbeing of our local elderly people and this generous donation from AWE will make a big difference."



AWE Community Committee member Linda Llewellyn and secretary Michele Maidment with Lynda Mead, left, and Lyn Norris, right, from Tadley Age Concern



AWE's Mark Hall presents the cheque to shop manager Sue Scott and fundraiser Sue Crook

Cash aids old chapel plan for new service

A disused village chapel is about to get a new lease of life – as the local shop.

Two years ago, people living in Headley rallied to save the post office and local shop.

Now that the lease is expiring, they have turned an old chapel into the new home for the shop, and AWE's Community Committee has donated £250 towards the refurbishment – the remainder being raised by local residents and some local trusts.

The community-run shop sells everyday groceries, while local residents donate surplus home-grown produce which is sold for a donation to funds.

There are two staff, a full-time manager and a post office clerk, as well as several volunteers who have taken on a multitude of roles – from serving, cleaning and delivering papers to assisting with the building works to convert the chapel.

Shop manager Sue Scott said: "I would like to thank AWE on behalf of the committee, staff and patrons for the generous donation, which will be put to good use in the refurbishment."

The shop also supports local group Growing Together, run by Cottismore Garden Centre, which aims to give young people with learning difficulties a protected employment scheme to help them develop in a safe and protected environment. Produce they create is also sold in the shop.

Looking to the future, those who run the shop also hope the converted chapel will provide a book exchange, an internet café and an area for local artists to sell their work.