



University of
Leicester

Autumn 2010

LE1

The Magazine of the
University of Leicester

Education that Inspires
Research that Changes the World



2008/9
THE AWARDS
UNIVERSITY OF THE YEAR

2009/10
THE AWARDS
OUTSTANDING SUPPORT FOR STUDENTS

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News update

The latest news from the University of Leicester



FISHY SCIENCE: Palaeontologists have discovered that studying rotting fish sheds new light on our earliest ancestry. Researchers from the Department of Geology at the University of Leicester devised a new method for extracting information from 500 million year old fossils – they studied the way fish decompose to gain a clearer picture of how our ancient fish-like ancestors would have looked. Their results indicate that some of the earliest fossils from our part of the Tree of Life may have been more complex than has previously been thought. The sequence of images show how the characteristic features of the body of amphioxus, a close living relative of vertebrates, change during decay. Colours are caused by interference between the experimental equipment and the light illuminating the specimens. Sansom et al. 2010 *Nature* 462:797-800. Picture credit: Mark Purnell, Rob Sansom, Sarah Gabbott, University of Leicester



Challenging times for university sector

Introduction by Professor Sir Robert Burgess,
Vice-Chancellor, University of Leicester

The environment faced by all universities over the coming years will be increasingly challenging as cuts in government funding bite deeply into our resources. However, recent achievements at Leicester make me confident that, despite this challenging context, we will continue to invest and develop to reach our goals and fulfill our ambitious plans.

Our research and teaching are thriving. The recent Research Assessment Exercise saw Leicester's Quality Related research income rise by 18%. And this year, our other main source of research funding – research grants won competitively from research councils, industry and government – has risen to a record level of £56 million (a 17% increase). You can read later of some of the excellent work across Leicester that has led to these achievements including our pioneering work in kidney transplant surgery and research to solve international territorial disputes.

Researchers at the forefront of their fields deliver inspirational teaching at Leicester. This approach has led to a growing demand for places – up by more than half since 2006 for our undergraduate programmes. As a consequence, our student satisfaction scores also continue to be amongst the best in the country. Our 2009-10 results for full-time students are second only to Oxbridge amongst public universities in England.

Royal Honour for Leicester's Vice-Chancellor



Professor Sir Robert Burgess receives his Knighthood at his Investiture on Wednesday June 2 (Image: British Ceremonial Arts).

These successes have helped transform our financial performance. The forecast surplus for the year is £11.6 million from our activities – all of which we will reinvest in our academic activities and our estate to prepare us for the challenges ahead. For example, you will have read in previous issues of LE1 about our £1 billion investment plan for the University's estate – arguably the most ambitious plan in the sector. This year will see us open our new Students' Union building and begin a new Cardiovascular Research Centre both of which you can read about in this magazine. Developments like these

will help us stay at the forefront of the sector in challenging times as we continue to provide a first-rate experience for our students, and excellent facilities for our world-class researchers.

Britain has a university sector that is world-leading – second only to the USA in its research outputs. Cuts will clearly make sustaining that position a challenge. But here at Leicester we will work together to stay true to our objectives of delivering world-changing research and inspirational teaching in an inclusive academic culture. ■

Heart *to* heart

Two major developments at the University keep Leicester in front



A transformed Students' Union will greet Leicester students this Autumn following the £16m refurbishment of the Percy Gee Building. The new building will boast a stunning central Atrium and Terrace, and a 1,750 capacity O2 Academy.



The University is also committed to realising a new £12.6m Cardiovascular Research Centre at the Glenfield Hospital, building on Leicester's enviable international reputation for academic and clinical excellence in cardiovascular medicine.

- ▲ The Union's Activities Resource Centre is a space for student leaders to plan and develop their clubs and societies, and receive training and professional support from the Union's staff team
- ◀ The stunning new atrium
- ▼ Percy Gee Building central atrium





The vital support of alumni, trusts and individuals will help to ensure the very best facilities, the highest quality student experience and continued investment in world leading research that can save lives.



Steve O'Connor,
Director of Development



Professor Nilesh Samani, British Heart Foundation Professor of Cardiology at the University

Both these separate developments reflect the ambition of Leicester to continue to invest in its future. As students are the lifeblood of the University, the Students' Union placed at the heart of the campus was a major priority. Leicester is consistently ranked among the top universities in England for student satisfaction.

A key feature of the Students' Union development has been the level of engagement and support shown by alumni, parents and friends of the University who have raised over £160,000 to help complete and equip the new building. Director of Development at the University of Leicester, Steve O'Connor, said:

"The vital support of alumni, trusts and individuals will help to ensure the very best facilities, the highest quality student experience and continued investment in world leading research that can save lives."

The multi-million pound project to construct a state-of-the-art Cardiovascular Research Centre (CRC) signals a continued commitment to invest in the University's world changing research. Cardiovascular disease is the

main cause of death in the UK and the Centre will revolutionise research and help to develop new treatments for patients in Leicestershire and beyond.

The Department of Cardiovascular Sciences at the University of Leicester has developed an enviable international reputation in research. It boasts a multidisciplinary cadre of principal investigators and a prestigious British Heart Foundation Chair in Cardiology which is held by Professor Nilesh Samani, a Leicester alumnus and one of the foremost researchers in cardiovascular genetics in the world. In the recent national Research Assessment Exercise, Leicester was highly rated and 95% of its cardiovascular research was considered to be of an international level.

The close relationship with the University Hospitals of Leicester NHS Trust has led to a clear, long term strategy to improve understanding of cardiovascular disease and its prevention and treatment. The recent award of a National Institute for Health Research grant to establish the Leicester Cardiovascular Biomedical Research Unit at the Glenfield Hospital, has provided the basic infrastructure to capture more data on more patients. The new Cardiovascular Research Centre will build on this investment and significantly increase the number of patients and

investigators involved in research on one site; and provide the increased space, specialist equipment and IT capacity to increase the scale and speed of research developments. This will not only improve prevention and patient care locally but achieve worldwide research impact.

The University has committed over £8m of its scarce capital resources to the Cardiovascular Research Centre project and is now seeking to raise a further £4m to equip and complete this building.

A generous gift of £375,000 from the Edith Murphy Foundation to the Appeal for the Cardiovascular Research Centre means that donations already total over £500,000. The Chairman of the Foundation, David Tams, said:

"The Foundation has been pleased to support both these major projects and help to ensure that Leicester remains at the forefront of leading universities providing a high quality learning experience and research that will not only bring significant benefit to the local community but achieve worldwide impact."

**To support the £4m CRC Appeal
call the Development Office:
0116 252 1071 or email
alumni.relations@le.ac.uk**

Transforming





lives

Pioneering research at the University of Leicester develops new techniques in kidney transplants

Doctors and researchers at the University of Leicester are leading the world in overcoming two problems that have dogged kidney transplant surgery – the shortage of donors and the limited life span of a transplanted kidney.



Michael Nicholson, Professor of Transplant Surgery and Head of the Transplant Surgery Group has harnessed Leicester's expertise in keyhole surgery to pioneer a way of removing a kidney from a live donor through the smallest of incisions and with a recovery time that is only a fraction of what used to be required.

Continued >>

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We think almost everybody must have a loved one who could give them a kidney, especially now we've reduced the consequences of being a donor.

Professor Michael Nicholson,
Department of Infection, Immunity and Inflammation

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The Transplant Surgery Group's response to the limited lifespan of transplanted kidneys is also pioneering, using an organ preservation system that is unique to Leicester.

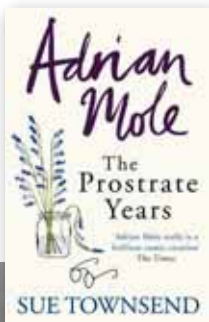
With a 97 per cent success rate for live kidney transplants, Leicester's results rank, with two other centres, as the best in the country.

The result is that instead of putting live donors through a painful major operation that leaves them with a large loin scar and weeks of recovery, the kidney is removed through a 6cm cut just above the pubic bone, the donor is out of hospital in three days and back to full-time work after four-six weeks.

Predictably, the result of that is that more live donors are coming forward to help someone they love whose life is blighted with chronic kidney disease and the restrictions dialysis imposes on their life.

"We think almost everybody must have a loved one who could give them a kidney, especially now we've reduced the consequences of being a donor," Professor Nicholson said. "There is tremendous potential for this. Last year 46 out of a total of 90 kidney transplants were from live donors."

One of those to benefit from a live kidney transplant is the creator of *Adrian Mole*, the Leicester author Sue Townsend. Professor Nicholson said: "Her latest book, 'Adrian Mole, the Prostrate Years' has been dedicated to all the members of the renal unit. It's very nice to have that. She is a lovely lady and she shows how a kidney transplant can really transform people's lives."



Sue Townsend, author of the *Adrian Mole* books, pictured with Louise Jones and Christine Fyfe, views a display of her work at the David Wilson Library in 2008. Her latest book, 'Adrian Mole, the Prostrate Years' has been dedicated to all the members of the renal unit.





Research conducted at the University of Leicester translates into better patient care.

The Transplant Surgery Group's response to the limited lifespan of transplanted kidneys is also pioneering, using an organ preservation system that is unique to Leicester.

Professor Nicholson explained: "When you take out a kidney, if it's from a deceased person then they've died over a number of days and the kidney has usually been 'insulted' in different ways, perhaps by a faulty blood supply or disease from the donor. Then the kidney will be stored on ice to shut down its metabolism for up to 24 hours.

"However, the kidney is sustaining injury during that period and the longer you leave it the worse results you get. A transplanted kidney treated in this way may take up to six weeks to repair itself before it starts to work properly."

What Professor Nicholson and his team are developing is a new technique to preserve kidneys warm rather than cold. At present this is still at an experimental stage, but results are exciting.

"We take a kidney and maintain it on a circuit that is essentially a heart-lung system. The kidney is in a chamber perfused with blood from the donor. This is oxygenated and the blood is warmed to body temperature. The blood then circulates through the kidney and the kidney itself actually functions and produces urine. It is a unique method of preservation. The kidney is warm and functioning, rather than cold and switched off."

What is more, they have found that this 'warm' technique can actually resuscitate the kidney and repair existing damage. "There is a lot of potential for the future," said Professor Nicholson. "If you've got the kidney warm and functioning outside the body before you transplant it then it gives you the opportunity to treat it, for instance with gene therapy or stem cells. This might help with tissue repair, or problems of rejections.

"When we take the techniques of blood perfusion to the human kidney this will be a world first," he added. ■

Fact File

- In Leicester, 90 kidney transplants were carried out last year (46 from live donors); 450 people are waiting for a new kidney.
- Nationwide, 7,000 people are waiting for a kidney transplant. Last year 1,400 received kidneys from deceased donors and 800 from live donors.
- Kidneys transplanted from a live donor can function for an average of 15 years, those from deceased donors for about ten years.
- Three new research projects the Leicester transplant surgery group is about to undertake:
 - ▶ Major research introducing bone marrow stem cells into a kidney to repair damage before transplantation;
 - ▶ The use of local anaesthesia alongside general anaesthesia. Before patients are cut they will receive a pain block to the area, which will prevent the 'pain pathway' from kicking in and will reduce post-operative pain.
 - ▶ A clinical project to develop sophisticated ways to check that a donor's heart is functioning well during the operation so that the kidney gets a good blood supply and will be in better condition when it is transplanted.





There will always be territorial disputes between countries, especially with the advent of satellite technology. Because now we can actually see where everything is from oil to minerals to water so that where boundaries actually are matters even more than before.

Professor Malcolm Shaw QC,
School of Law



Professor Shaw at the
International Court of
Justice in The Hague.

Barrister puts teaching on the map

Research into territorial disputes impacts on postgraduate teaching in Leicester's School of Law

"As long as the world is divided into states, there will be territorial disputes," observes Professor Malcolm Shaw QC. **And as long as there are territorial disputes between states, there will be a need for specialists in international legal matters like Professor Shaw.**

Professor Shaw is Sir Robert Jennings Professor of International Law at the University of Leicester where he currently teaches public international law, including human rights and international courts. This followed a five-year tenure as Ironsides, Ray and Vials Professor of Law.

Last year, Professor Shaw pleaded before the International Court of Justice in The Hague in one of the most politically charged and high profile cases in recent decades.

The United Nations General Assembly requested an advisory opinion from the Court on the question whether the unilateral declaration of independence from Serbia issued by the Provisional Institutions of Self-Government of Kosovo in February 2008 was lawful or not.

Professor Shaw, Counsel for Serbia, declared before the Court that many states around the world were watching the proceedings with apprehension. Should the Court, he noted, accept the declaration of independence as lawful under international law, it could encourage secessionist movements around the world and lead to an increase in instability in the

international community. Another issue of considerable significance is whether an international legal and administrative regime for Kosovo established by the Security Council in 1999 after the NATO intervention could be set aside or undermined unilaterally by one side to a conflict.

Emphasising the importance of the issue, a total of 35 states submitted written memorials or made oral statement before the Court, in addition to Serbia and the authors of the unilateral declaration of independence. For the first time in the history of the Court, all five permanent members of the Security Council pleaded in the same case. Indeed, it was the first time that China had appeared before the Court.

On 22 July, the International Court of Justice gave its Advisory Opinion on the question, holding that the unilateral declaration of independence by Kosovo was not prohibited by international law. The full political and legal consequences of this ruling have yet to become apparent.

For the last 18 years, Professor Shaw has been a practising barrister. He is the author of *International Law*, a leading textbook on the subject – the sixth edition of this book has recently been published by Cambridge University Press and it has been translated into Polish, Hungarian, Portuguese and Chinese.

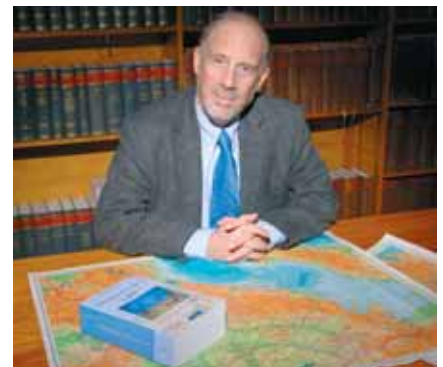
He said: "My work fits in very well with my teaching because I teach postgraduate modules on international

boundaries, international human rights and international courts. I can use this work as case studies for my students, being in a position to discuss why governments acted as they did and how particular arguments developed."

Graduates who have studied under Professor Shaw at the University of Leicester have gone on to pursue a range of careers: some have gone into private legal practise, some have gone to work for governments, others have moved into teaching. Those who follow the Professor into the field of international law practise hope to find plenty of work in the future.

"There will always be territorial disputes between countries," emphasises Professor Shaw, "especially with the advent of satellite technology. Because now we can actually see where everything is from oil to minerals to water so that where boundaries actually are matters even more than before." ■

The sixth edition of Professor Shaw's book, *International Law*, has recently been published by Cambridge University Press.



Awesome ALICE keeps her cool while thinking big

Supercomputer enables Leicester to engage at highest levels in new research paradigm

She's the most significant addition to the University of Leicester's team of researchers in years – a powerful performer with strong green credentials, able to work across disciplines, and likely to bring in millions of pounds in research grants to the University.

Meet ALICE, the £2.2 million supercomputer that started full-time at the University in July.

ALICE will offer researchers computational power equivalent to thousands of desk top PCs by clustering large numbers of central processing units, while also providing substantial storage for research data. This means researchers at the University will be able to analyse larger datasets than ever before, get responses more quickly, and also ask different kinds of questions.

"Without the supercomputer, some of the work I have done would have taken years to get any results – in some cases, 50 years," says Dan Ladley, a lecturer in the Department of Economics, who has been involved in pilots of ALICE. "Now I can get answers in a total computational time of about a month. It will also let me ask bigger questions."

Ladley, whose work involves using simulations to understand the behaviour of financial and economic systems, has been using the computer for three projects. The first

examines the effect of different kinds of regulation on financial market stability, the second uses genetic programming as a way of pricing derivatives, and the third looks at the effect of different voting systems on political stability.

He says problems examined by social scientists often require a lot of computing time because modelling people involves looking at so many different scenarios.

"Having a better computing facility and more computing power allows you to ask questions you couldn't attempt with a standard desk top computer," he says. "It should make it easier for social scientists to ask these questions and to work together."

Astrophysicists and engineers have also been involved in the pilots. Aldo Rona, part of a team in the Department of Engineering which is building a chamber to test noise levels in different appliances from hand-held mixers to small engines, has used ALICE to create a numerical model for testing sound waves. The ceiling and walls of the chamber are lined with acoustic absorbent tiles, which need to be tested before taking sound measurements. The wide frequency range involved in this test makes it particularly hard to recreate numerically – but ALICE has risen to the challenge.



Without the supercomputer, some of the work I have done would have taken years to get any results – in some cases, 50 years... Now I can get answers in a total computational time of about a month. It will also let me ask bigger questions.

Dan Ladley,
Department of Economics

Continued >>





The computer, which is free to use for any researcher at the University, will prove a boon for Leicester's key research areas of genetics, astrophysics, space research and climate science, allowing scientists to ask new and more speculative questions about the origins of the universe, our genetic make up and the effects of climate change.

University managers also hope that by being a centrally managed service it will bring researchers together and prove a catalyst for interdisciplinary work.

But what makes ALICE really special is how, in spite of her awesome computing power, she manages to remain relatively environmentally friendly.

High Performance Computing produces an enormous amount of heat, so keeping such powerful equipment cool is a major challenge. If a traditional cooling solution had been used, this would have been both expensive to run and also bad for the environment.

Instead, the £1 million computer room built to house ALICE uses an advanced water-cooling system, which maximises the potential for free external cooling, working a bit like a car radiator. As a result, it uses two and a half times less electricity than the traditional air-conditioning previously used by the University to cool this type of facility.

It is believed this could make ALICE one of the greenest computers of her kind, and means that because the University will spend less on keeping her cool, it will be able to spend more on keeping her busy.

And she's likely to be working flat out. The computer is expected to bring in millions of pounds from the award of research grants related to its use. Based on initial feedback from departments, awards which require significant use of a supercomputer amounted to £15.6 million over the past three years, and access to the extra power it offers is likely to be increasingly important when attracting new funding.

It is also likely to attract top international researchers – from all disciplines. Mary Visser, Leicester's director of IT services, says: "We have entered a new paradigm in research over the past few years, and a lot of that is down to the evolution of computers. It means our scientists will go to places with these facilities where they can work on the big problems. The research universities have this problem where, if they want to stay in the premier league, they have to have these kinds of facilities."

While in the past, to engage with this kind of computer you had to be, in Visser's words, "a real techie", Leicester is working hard to make ALICE accessible to any academic who needs her. This will be done mainly by offering plenty of technical support.

With the amount of computer data produced increasing by 50 per cent a year, storing, managing and sorting data is becoming increasingly challenging for universities. Here too ALICE will be earning her keep, helping to train a new generation of computer-savvy academics and keeping Leicester at the forefront of research developments across the world. ■



This is just the start of a fascinating journey. This will strengthen Leicester's position as an international leader in computational astrophysics.

Justin Read,
Lecturer in Astrophysics



What makes ALICE really special is how, in spite of her awesome computing power, she manages to remain relatively environmentally friendly; because the University will spend less on keeping her cool, it will be able to spend more on keeping her busy.

The fate of the Milky Way

Leicester's theoretical astrophysics group has high ambitions for the new ALICE supercomputer: it will use it to predict our Galaxy's future and discover the origins of the universe.

The computer's huge processing power allows the group to simulate larger patches of the universe in finer detail than ever before.

Its first task is to work out what will happen when our Milky Way galaxy collides with the Andromeda galaxy a few billion years from now. This image shows the first results from this simulation, which is the highest resolution simulation of its kind to date.

The Milky Way (the smaller of the two dense blobs) has just plunged through Andromeda releasing several plumes of gas. The white regions show high gas density, the dark low gas density. The red spheres are young star clusters formed as the two galaxies collide.

The researchers plan to use this simulation to follow the birth of stars during the collision, and the fate of the interstellar gas, giving clues to how the huge black holes in the centre of every galaxy have grown to their present masses – some millions of times the mass of our Sun. The simulation will also allow the researchers to study the implications of galaxy mergers for the future of life on Earth and on other planets.

"This is just the start of a fascinating journey," says Justin Read, lecturer in astrophysics, who has been piloting this work. "This will strengthen Leicester's position as an international leader in computational astrophysics."

He says the advantage of having an in-house machine is that it is tailored to the exact needs of the University's research teams. But the computer is not designed for just one kind of simulation.

"It will have uses we cannot even imagine," he says. "It will be a game-changer."

Image courtesy of Chris Nixon, Justin Read, Chris Power, Alex Hobbs and the Leicester Theoretical Astrophysics Group.





A better degree





by far

Leicester's global reach in distance learning provision is producing students in unexpected places. From an American prison to a closed convent in Cyprus and an African war zone, Leicester's students span the globe.



The University of Leicester is now the biggest provider of distance learning degrees in the UK after the Open University and one of the largest in the world. Distance learning enrolments make up around a third of the nearly 23,000 students on full or part-time courses. The School of Management alone has 6,500 students on distance learning programmes.

Despite the wide use of the virtual learning environment, tens of thousands of parcels of materials are shipped, airmailed or even air dropped across the world each year. Remote locations have included the middle of a jungle, a nuclear submarine and one of the world's most remote populations on the sub-tropical island of St Helena, 1,200 miles from the nearest settlement.

The broad reach of distance learning at Leicester reflects the University's overall commitment to widening access to higher education. Last year the School of Management met the challenge of finding a venue and invigilator for a student to take exams on Sao Tome and Principe, two volcanic islands off the west of Africa. In 2008/09 it dispatched 23,635 study items to 3,414 students abroad. And it does not let battles get in the way: in 2005 a member of the British Army sat exams in Baghdad in a room where windows and doors had been blown out.

Continued >>



◀ Top: Centre for Labour Market Studies distance learning students congregated to receive their degrees on 13 July 2010
Bottom: Top 60 territories for distance learning students



Professor Simon Lilley, Head of the School of Management

Video conferencing is used to communicate with one of the University's most unusual MBA students, a nun from a convent in Cyprus which does not allow visitors. "Through this distance learning programme she wished to gain enough knowledge and skills to be able to wisely allocate the funds that are available to the church and use them for establishing a different type of charity," said her spokeswoman.

"The new charity will help educate single mothers, offer them spiritual support and sponsor their business attempts so they can support themselves while bringing up their children and hopefully tackle the problem of abortion," she said.

Professor Simon Lilley, the Head of School, believes the reflective and rather unorthodox nature of the MBA course has struck a chord with students: "Unlike most mainstream Western business schools, our primary concern is with challenging the status quo rather than perpetuating it," he says.

But it is not only management students who are seeking a degree from Leicester. Lawyers seeking to enhance their knowledge of EU or employment law, archaeologists at sites across the world, government officials in Africa and relief workers engaged in risk and crisis management are preparing assignments for the 12 university departments which offer distance learning diplomas, certificates and degrees.

Students from the Institute of Lifelong Learning at the University are involved in the relief effort in Haiti following the earthquake, including Barbadian Robert Harewood, 43, who is studying for an MSc in Risk, Crisis and Disaster Management. He works in the Barbados disaster management department which liaises with CDEMA, the Caribbean Disaster Emergency Management Agency.

He said: "I looked first to the US but I didn't really like what I saw. A lot of the US universities aren't accredited so you have to tread very carefully. I found the University of Leicester online and liked the international aspect of the programme because it's easy to get bogged down in what is happening in the Caribbean," he said.

David Rosset, who graduated with an MSc with merit in January 2010, now works as an adviser for the United Nations Standing Police Capacity. David specialises in delivering expert advice to train police officers to respect human rights, be gender-sensitive and treat the vulnerable, especially women and children, with dignity.

David says: "Soon after the Haitian earthquake, I was sent to Port-au-Prince to provide technical expertise to integrate the United Nations crisis management response into the police structure in order to maximize support to the international humanitarian relief operations in Haiti. It is important to keep in mind that during humanitarian crisis and post-disaster situations, women and girls are particularly at risk

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Unlike most mainstream Western business schools, our primary concern is with challenging the status quo rather than perpetuating it.

Professor Simon Lilley,
Head of the School of
Management

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of sexual violence and exploitation by traffickers. Furthermore, children are among the most vulnerable members of the society and in this current situation their vulnerability increases significantly due to violence, abuse, separation from family and disability”.

Meanwhile in Singapore students and alumni of the course and its partner MSc – Emergency Planning Management – meet regularly for dinner. One of them, Kim Lim Yang, graduated with an MSc in 2007 and is now doing a PhD. She helps companies draw up plans for the crisis management of disasters ranging from rumours and reputational damage on the internet to accidents on the scale of the BP oil spill.

“I like the Leicester approach because of the balance between theory and practice which makes it relevant to practitioners,” she says. “I’ve been working in the field for many years and know we do things in a certain way but

I didn’t always know the reason why it was best practice. Now if my clients want to challenge me I can explain the reasons and give them concrete examples.”

Helen Lentell, the University’s Director of Distance Learning (DL) Development, tasked to expand sustainable DL growth at the University, stresses the importance of good organisation. “Robust administrative and operational systems are as indispensable to our good completion rates as high quality courses and support for students who are often working in difficult circumstances,” she says.

“In the first phase of expanding our DL provision we are creating a Distance Education Centre that will support the educational design, development, production, and dispatch of distance learning resources – virtual and physical – thereby freeing up academics to concentrate on teaching and research.

The second phase will be the provision of a central support service to DL students and partners (agents) with the student experience firmly to the forefront. Presently our departmental approach, which provides in many instances wonderful support to DL learners, leads to many academics being diverted from their core roles of teaching and research as well as a lot of replication of administrative tasks across the University.”

For students such as Sylvie Rhugenda, 32, a telecommunications manager from the Democratic Republic of Congo who is studying for an MBA, the high point has been contact with people from different cultures.

“Though I have never been to the UK, distance learning at Leicester has brought me part of the British way of being and I am proud to bring part of the African way of being to my assignments,” she says. ■

Haiti UN Ambulance airlift – Image provided by D. Rosset, 15/02/2010



From Skylark to Swift

Leicester celebrates 50 years of space research – and unveils the most advanced astronomical teaching facility at any UK university

The University of Leicester Department of Physics and Astronomy has consistently been at the forefront of world-class space research and this year celebrates the 50th anniversary of its involvement in space science which began with use of the UK Skylark rocket.

To mark the occasion, a symposium, Exploring the Extreme Universe, reviewed past and current successes and discussed future missions. Attendees included the President of the Royal Society, Lord Rees, former NASA astronaut Professor Jeffrey Hoffman (MIT/Leicester) and Dr Philip Campbell (Editor in Chief, *Nature*).

The Department of Physics and Astronomy continues to push back the boundaries of space research and currently has a major involvement in two operational satellites: XMM-Newton and

Swift. Future projects include provision of instruments for the European Space Agency's Mars Rover and for a new, large space telescope (JWST) being constructed by NASA, ESA and the Canadian Space Agency. Other exciting new ventures include collaborative projects within the growing Indian and Chinese space programmes.

Space research pioneer Professor Ken Pounds commented: "Over the past 50 years access to space has had a major effect on everyday life such as easy and cheap communication, the ability to monitor the Earth's climate and improving our scientific understanding of the Universe. Notwithstanding the current financial problems in many countries, we can confidently predict that the next 50 years will see even more remarkable developments as improved access to space accelerates both scientific discovery and benefits to the wider population."

Professor Mike Watson, of the University's Department of Physics and Astronomy, who was the main organiser of the Symposium said: "The Department has been involved in space science for almost the entire period mankind has explored space. The technology we use today was undreamt of in the early days, but the basic principles remains the same – explore and discover."

Professor Paul O'Brien, a co-organiser of the symposium and Director of the University Observatory, commented: "Our ambitious aim is to try and understand the Universe, a subject which fascinates children and adults alike. To achieve this we construct and use sophisticated instrumentation in space and on the ground. In this spirit we were pleased to be able to install a new 20" telescope, the most advanced astronomical teaching facility at any UK university, unveiled early this year by Professor Hoffman".

Professor Hoffman unveiled a new 20" telescope, the most advanced astronomical teaching facility at any UK university



The new telescope is housed in the University's Observatory in Oadby. The American-built 'piCETL' telescope offers undergraduate students the opportunity for hands-on work with a state-of-the-art telescope which can be quickly set up and with which the students can decide what to observe and take the data.

Professor O'Brien said: "We feel it's important to give students exposure to the real experience of observing for themselves and not thinking that astronomy is all done over the Internet." Professors George Fraser and Bob Warwick head the two research groups in the Department engaged in Space Instrumentation and Observational Astronomy. ■

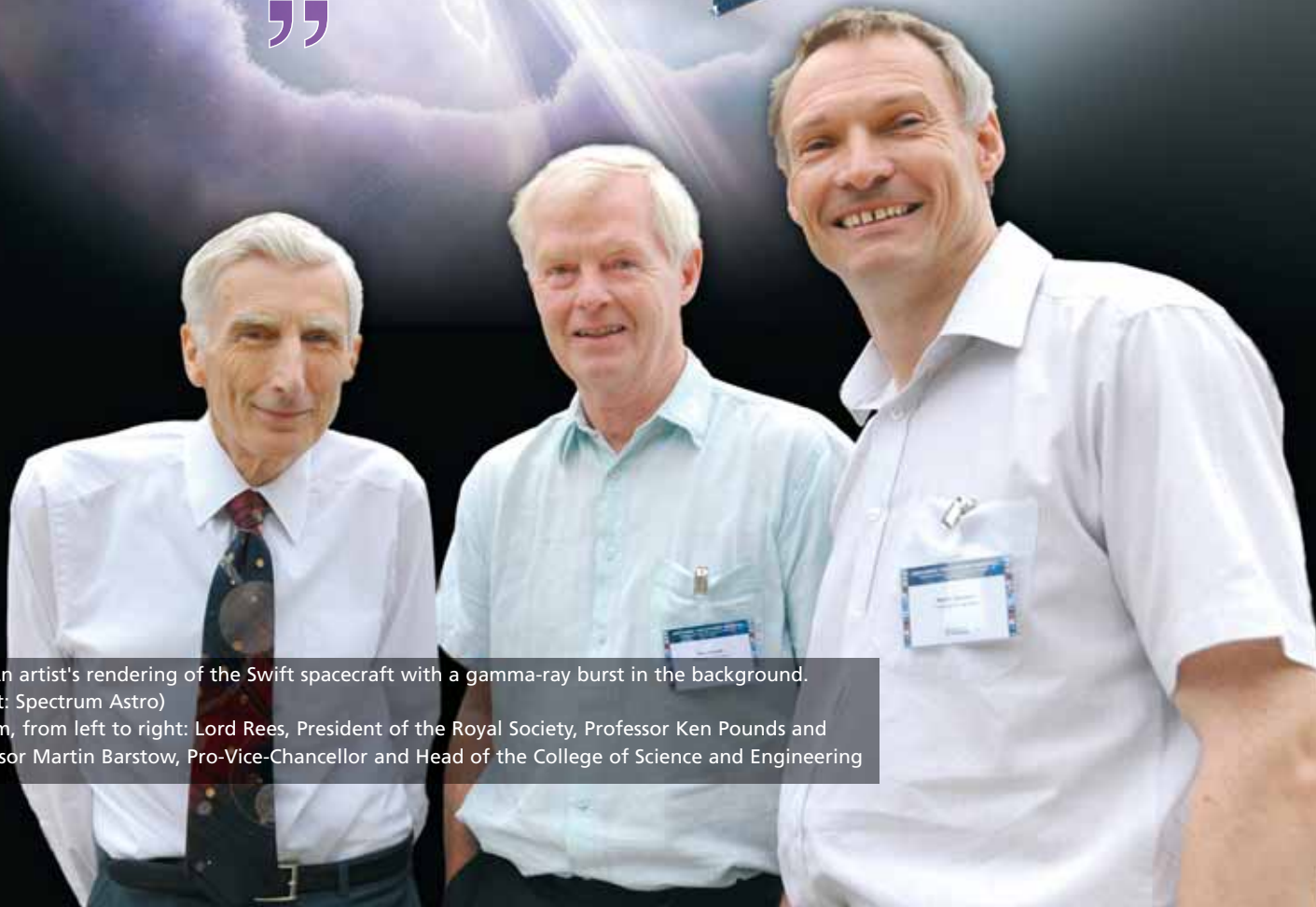
Symposium web site:
<http://www.star.le.ac.uk/conf50/>

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Over the past 50 years access to space has had a major effect on everyday life such as easy and cheap communication, the ability to monitor the Earth's climate and improving our scientific understanding of the Universe... we can confidently predict that the next 50 years will see even more remarkable developments as improved access to space accelerates both scientific discovery and benefits to the wider population.

Professor Ken Pounds,
Department of Physics and
Astronomy

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Top: An artist's rendering of the Swift spacecraft with a gamma-ray burst in the background. (Credit: Spectrum Astro)

Bottom, from left to right: Lord Rees, President of the Royal Society, Professor Ken Pounds and Professor Martin Barstow, Pro-Vice-Chancellor and Head of the College of Science and Engineering

Yeast, the human genome and infertility

Research in the Department of Genetics examines yeast for new insights into aspects of human health

It is an amazing fact that much of what we know about human genes has actually come from studying common baking or brewers yeast.

Professor Rhona H Borts, Royal Society Wolfson Research Merit Award Holder and Director of the Leicester Institute of Genetics and Genome Science in the University of Leicester's world-renowned Department of Genetics, has been at the forefront of yeast-based research into understanding how organisms reproduce and pass on their DNA.

She was one of the first to appreciate that if human DNA from both parents is not perfectly matched when making a human egg or sperm, then problems such as spontaneous abortion and Down's syndrome can ensue.

Professor Borts is currently looking at yeast to find new insights into aspects of human health and fertility. In this area, also, she has made the highly exciting suggestion that changes in a gene, already well documented for its link with cancer, might also be involved in male infertility, though in neither case does the existence of the gene mean that either cancer or infertility will result.

One in four or five couples experience infertility, and the vast majority of cases reflect male problems. A number of these may turn out to have a genetic basis, as Professor Borts explained: "All the genes that I'm interested in cause yeast to be infertile. In the last five or ten years laboratory models have indicated that they may be a cause of infertility in men."

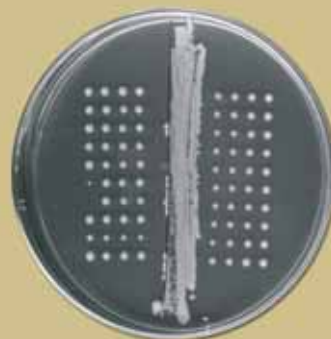
Why has yeast proved so useful in the study of human genetics? "Cells in people, yeast and other organisms all have DNA contained within a nucleus that are the instructions for life. They all must maintain the integrity of this genetic information and pass it on to their offspring," Professor Borts explained. "Yeast is one of the simplest organisms that can be used to model humans. When we were able to sequence the yeast we found that many genes had exactly the same structure and function as in humans."

Although yeast is a single cell, it produces two different kinds of cell division: mitosis, making more and more identical copies, rather like human skin cells; and meiosis, involving the process of reducing the duplication of chromosomes after reproduction, as in the human egg or sperm.

A major advantage of working with yeast is that you can experiment on it in ways you can't with humans. More than that, you can put human genes into yeast and they can function. "If you use human proteins in yeast it could tell you – at some point in the future – whether the human proteins are functioning properly," Professor Borts said.

Her aim is that in the future better understanding and diagnosis for infertility may allow patients and clinicians to make more informed decisions on treatment options, and may also lead to an earlier diagnosis and prevention of colon cancer. ■

Fact File



- Yeast is a single cell with a very small genome. It has about 6,000 genes, whereas humans have about 30,000, and it was the first eukaryotic (a cell with a nucleus) to be entirely sequenced.
- Professor Rhona Borts has been working with yeast since her post-doctoral years in Boston. After obtaining a Wellcome Trust Senior Fellowship she moved to Oxford to set up her own group working on basic aspects of DNA repair. She was involved in the Pan European project to sequence yeast in the 1990s. After coming to Leicester in 2000 she began looking for ways to translate knowledge gained in yeast to humans and that has led to her work on infertility.
- Funders for her work include: Cancer Research UK, the Medical Research Council, the Wellcome Trust and the Royal Society.



“

I'd like to emphasise the importance of basic research. When I got into this, we didn't know the genes we were interested in were cancer genes or genes that affected infertility, we just wanted to understand how things worked in the yeast. Now yeast research has opened up whole horizons relating to humans.

Professor Rhona H Borts,
Department of Genetics

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Great Expectations: A tale of two cultures

An intense interest in Japan in nineteenth century British culture and in nineteenth century English writers has led to flourishing links between Leicester's School of English and institutions in Japan.

The University of Leicester's Victorian Studies Centre has welcomed a growing number of Japanese students onto the MA in Victorian Studies, some of whom have come through the highly prestigious Rotary Scholarships.

It stems from the fact that 19th Century British writers are very popular in Japan, not just within the academic community, but also throughout the population at large.

Dickens, Hardy, the Brontës, George Eliot, Elizabeth Gaskell – all have thriving Japanese societies devoted to them which in turn publish books and journal articles. They also feature prominently in University English syllabuses in Japan.

It began long ago, said Professor Joanne Shattock, until recently Director of the Victorian Studies Centre in Leicester's School of English. The curriculum in

university English departments has been a traditional one, and the influence of English writers who went to Japan including the poets Edmund Blunden, Anthony Thwaite and the University of Leicester's own George (GS) Fraser, was important in creating cultural links.

Also, in the 1860s and 1870s a series of Japanese missions came to London after the Great Exhibition, looking at examples of English culture and manufacturing, and taking ideas back to Japan.

Today many English books are translated into Japanese, including volumes of Professor Shattock's *The 'Works of Elizabeth Gaskell'*, and though there is,

▼ Left to right: Dr Joan Crossley, Professor Yukio Kaneko, Dr. Chieko Ichikawa; Tomoko Kanda, Nanae Hama



nowadays, more emphasis than there used to be in Japan on vocational degrees, students are still coming to Leicester's Victorian Studies Centre.

"The students who come to us do heroically well when you think they have to learn a different language," Professor Shattock said. "I can't begin to understand how they get to the stage where they can both read 19th Century texts and write about them with critical sophistication.

"We've been attracting good postgraduates to the Victorian Studies Centre for some time and are wanting to nurture these academic relationships – hence we have Honorary Visiting Fellows with us. The University is also developing an exchange with Nara Women's University, in both English and Biological Sciences.

"As Victorian Studies is very much thriving in Japan, it is to our mutual benefit to welcome Japanese visitors. I have also had the opportunity to visit Japan, and I hope this reciprocal arrangement will continue."

In order to reinforce these links and

build new ones, Pro-Vice-Chancellor (International), Professor Douglas Tallack, met recently with academics and senior managers at Nara Women's University, Waseda University, Nihon University, Kobe College, and Aoyama Gakuin University in Japan.

He said: "Japanese Universities are very keen to internationalise - witness the establishment at Waseda University of the School of International Liberal Studies which sends all home students on study abroad. There seems, also, to be an intent to diversify beyond the very strong USA orientation that emerged in the decades following World War Two. The UK is an obvious direction for Japanese academics and students, in part because of English language, but also because of the UK's relationship with the rest of Europe."

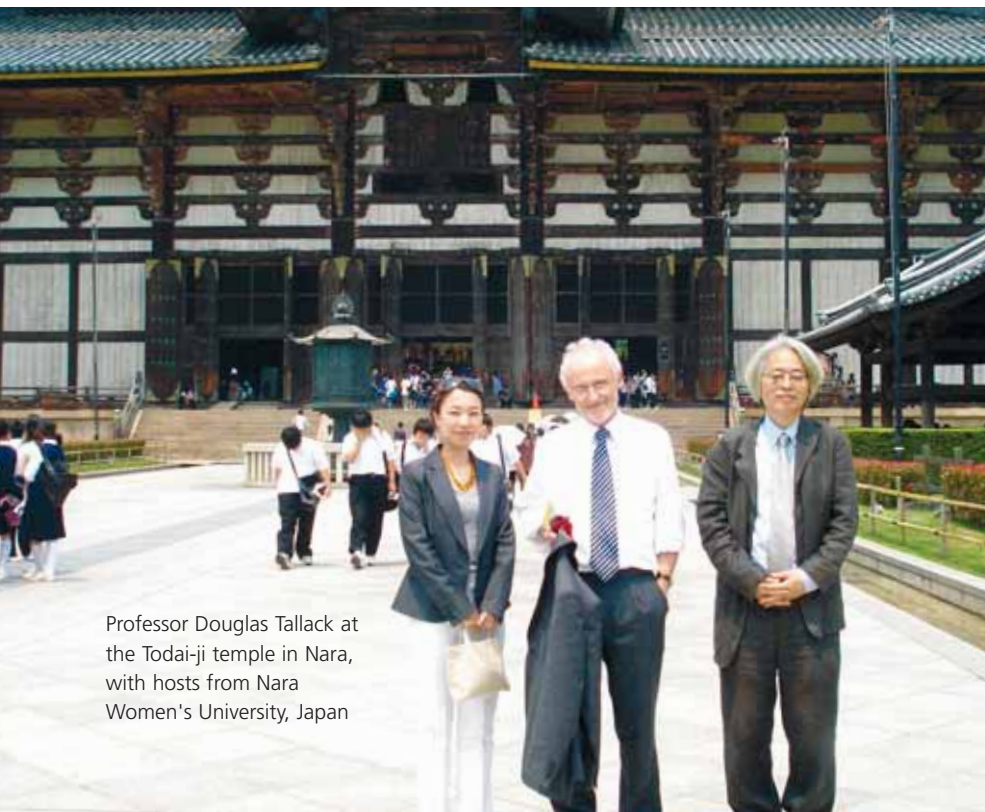
Accordingly, the seminars Professor Tallack gave on international partnerships were of considerable interest, and he was asked to encourage UK academics to think of Japan as a 'third country' when applying for EU funding, and, of course, to make use of existing funding opportunities through the British Academy and the Japan

Society for the Promotion of Science.

Question sessions following Professor Tallack's academic lectures on aspects of Anglo-American 'Victorian' culture made him aware of how knowledgeable Japanese faculty and students are about mainstream Victorian authors, from Dickens to Hardy. Although this stems, to some extent, from a strong and perhaps cultural adherence to canonic writers, developments within Victorian Studies, for instance towards the study of less well-known female Victorian authors, are also becoming popular in Japan.

Professor Tallack added: "It was a pleasure to find such expertise and enthusiasm, from undergraduates to senior professors, in this aspect of British culture and, indeed, in American "Victorians", such as Edith Wharton and Henry James. I am sure it will give students of Victorian literature an added impetus to come to the University of Leicester, with its remaining Victorian buildings and the city's Victorian legacy, as well as its strong academic reputation in the subject. Across subjects, from English through Media and Communications to Biosciences, students are keen to come to the UK, whether on study abroad or postgraduate programmes."

Professor Tallack added that Japanese students stood to benefit from the academic and welfare support that is common across the UK HE sector and that is so well-established and widely-acknowledged at the University of Leicester. True internationalisation is reciprocal, of course, and many UK Universities, Leicester included, provide basic Japanese for students keen to study abroad. For their part, UK academics have many research interests in common with their Japanese colleagues. Speaking for the Humanities and Social Sciences, Professor Tallack singled out Media and Communications and Urban Culture and History as topics where a number of his Leicester colleagues are keen to establish links. ■



Professor Douglas Tallack at the Todai-ji temple in Nara, with hosts from Nara Women's University, Japan

Everyone's a winner

Nowhere is the University of Leicester's credential for being 'elite without being elitist' better illustrated than in its collaboration with the Trust that runs the 17th-century Northamptonshire country house, Lamport Hall.

Together, the University's Centre for the Study of the Country House and the Lamport Hall Preservation Trust offer a unique internship each year for one of the Leicester graduates taking the Centre's MA in the Country House: Art, History and Literature.

As the current incumbent Charlotte Carroll has found, the internship provides the chance to spend a year living and working in an historic country house open to the public and rare for having been in the hands of the same family – the Ishams – since the 16th century.

Charlotte's appreciation of the benefits the internship has given her is twofold. "Every day is different. I like a challenge and whenever I'm presented with something new I get quite excited because it means learning a new skill," she said, adding on a more personal note: "As an intern you have to work hard, but I'm very grateful to the Centre for the Study of the Country House and to Lamport Hall, that they give this opportunity to people who aren't from a wealthy background."

George Drye, Executive Director of the Lamport Hall Preservation Trust, explained the thinking behind the internship. "One of the reasons we were so keen on assisting the University's new Master's programme is that there is nowhere else where you can study the subject. The Trustees gave money for bursaries and scholarships for the Master's programme, and that was successful. Then, three years ago we created an internship because there are few places where people can gain experience."

Getting the right person is vital, he says, since the intern lives and works with the household. That said, he feels the internship is a scheme in which everyone is a winner. "Charlotte has been a major asset to me. It's been lovely to see her confidence grow. She has done high quality work and done it extremely well. She will be getting a very positive reference from me and she has had good experience, so she has gained a lot of advantages here over a short period.

"It's also been beneficial for the University and its Master's programme. We're now receiving applications for the next internship and the Master's programme from all over the world. We intend to repeat the exercise but will in future pay half the fees of the MA programme."

As she approaches the end of her internship and her Master's course and begins to look at job applications, Charlotte is in no doubt about what she has gained. "The important thing for me was to experience every side of running and managing a country property.

"I've done front-of-house work, marketing, advertising, organisation and execution of painting restoration, working with volunteers, redesigning the guide book and working on the five-year conservation plan. I've been given responsibility in the organisation of the May Festival of Country Life. This has given me a solid background in events management, which I thoroughly enjoy. I've also learned to deal with the public and sometimes take guided tours round the house, which is open to the public two afternoons a week.

"It's the range of work that has been

the most rewarding part. Other part-time jobs I've done have brought to light how generous Lamport has been, because in general you just don't get this kind of experience."

Dr Phillip Lindley, Founding Director of the University's Centre for the Study of the Country House in the Department of History of Art and Film, commented: "Tourism and heritage form one of the biggest industries in the country. Ask almost any tourist in the world why they come to Britain and they will say for the museums, galleries and to visit our country houses.

"The advantage of the internship at Lamport Hall, is that it gives the student a sense of what it's really like to be involved in the running of a house and this should help her find a career in the industry. The personal commitment of the Chief Executive and the Trustees and their interest in education have been enormously supportive to us, and the internship represents a new and exciting development."

Charlotte confessed she would find it hard to pick out one highlight of her year at Lamport Hall. "There have been so many things I've not done before, for example helping to draw up five year plans for the management of Lamport.

"Painting conservation has also made a huge impact on me. It started when I was asked to insure a very large painting for transport to our conservator. Then there was the nerve-wracking experience of helping to take off an area of varnish with the conservator, and finally the proud moment when I saw the restored painting back on the wall." ■

“

I imagine coming back in 50 years to see that painting still hanging here, and being able to say: I had a hand in that!

Charlotte Carroll,
Centre for the Study of the
Country House, Department of
History of Art and Film

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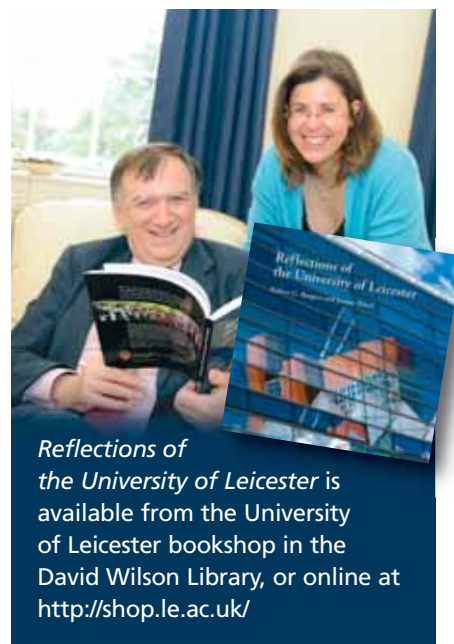
News update

Images that have shaped Leicester

A wealth of images that tell a story of the University of Leicester over 50 years has been presented in a new publication by Vice-Chancellor, Professor Sir Robert Burgess, and Assistant Registrar, Jo Wood. (pictured)

The book provides perspectives on the University from 1958-2008 – looking through the lens at the people and events that have contributed to its rich history.

The 148-page book with more than 430 illustrations captures many aspects of Leicester life. There are reflections on the origins of the University, prominent people and events that have shaped the institution including: royal visits; visits by distinguished personalities; student events; research, teaching, business and community activities, celebratory events and many more.



Reflections of the University of Leicester is available from the University of Leicester bookshop in the David Wilson Library, or online at <http://shop.le.ac.uk/>

Turning windows into power generators

An international team of scientists and industrialists met at the University of Leicester to develop a revolutionary new technique for harnessing green energy.

Norwegian company EnSol AS has patented a ground breaking, novel thin film solar cell technology which they seek to develop commercially by 2016.

The company is now working with experts in the University of Leicester Department of Physics and Astronomy to develop the revolutionary new type of solar cell material that could be coated as a thin film on, for example, windows in buildings to produce power on a large scale.

Experts met at the University in August to officially launch the collaboration between EnSol AS and the University of Leicester.

Professor of Nanotechnology at the University of Leicester, Professor Chris Binns, said the collaboration offered a tremendous opportunity to develop a new method for harnessing solar energy:



Professor Chris Binns is working on a new method for harnessing solar energy.

“The material has been designed by EnSol AS and is based on nanoparticles that can be synthesised in Leicester. In fact, following some initial investment by the company, the equipment we have here at the University of Leicester is uniquely suited in the world to produce small amounts of the material for prototypes.”

A spokesperson for EnSol AS said: “EnSol’s next generation PV cell technology has tremendous potential for industrial scale, low environmental impact, cost effective production via standard “spray on” techniques.”

Postnatal Depression can be prevented by Health Visitors

The world’s first ever analysis of data from a full scale clinical trial in adults shows that training Health Visitors to assess and psychologically support mothers after childbirth can prevent the development of depression over the following year.

But the substantial reduction in the number of NHS health visitors was identified by researchers as a key issue for the health and well-being of mums.

The prevention study was led at the University of Leicester by Professor Terry Brugha with researchers from the universities of Nottingham and Sheffield. It is being published in the Cambridge University Press journal *Psychological Medicine*.

While small scale studies have been carried out into the prevention of depression among adults, this peer refereed scientific report is the first sufficiently large scale randomised trial to clearly show a statistically significant reduction in future cases of depression in women living in the community who were not depressed when they joined the study.

Political leanings

A new study from the University of Leicester Department of Economics reveals that highly educated people make wrong assumptions about their political leanings – they are more likely to think they are left wing when they are more likely to be relatively conservative.

The study suggests that some people may end up voting for left of centre parties because they hold the mistaken belief that they are left wing.

The research by Dr James Rockey, a lecturer in Economics, used data from the World Values Survey and described the opinions and characteristics of 136,000 individuals, in 82 countries,

over a period of over 20 years.

His study, *Who is Left-Wing, and Who Just Thinks They Are?*, analysed whether people misperceive their relative ideological position by measuring on a scale from 1 to 10 what people think they are – and measuring their opinion against a substantive issue ie how income should be divided.

“The most startling result is that the more educated tend to believe that they are more left-wing than they are measured as being,” said Dr Rockey. “That is, well-educated individuals are more likely to think that they are quite left-wing but actually believe things that compared to the rest of the population would make them comparatively right-wing.”

World first remote heart operation using robotic arm

A pioneering world first robotics system operation was conducted at Glenfield Hospital Leicester thanks to expertise at the University of Leicester and University Hospitals of Leicester.

Dr André Ng, Senior Lecturer in Cardiovascular Sciences at the University of Leicester and Consultant Cardiologist and Electrophysiologist, Glenfield Hospital, University Hospitals of Leicester, became the first person in the world to carry out the operation remotely on patients using this system.

He used the Catheter Robotics Remote Catheter Manipulation System for the first time in a heart rhythm treatment procedure.

The system is novel because it allows a doctor to carry out a common heart treatment procedure remotely using a robotic arm.

Dr Ng and his team’s international standing and leading position in the management of heart rhythm disorders are reflected in the invitation to be the first to apply this new Robotics System



Dr Ng operating the robotic arm from a nearby room

in clinical procedures which also affirms the world-class research and pioneering work at the University of Leicester.

The Remote Catheter Manipulation System (RCMS, Catheter Robotics Inc., New Jersey) is a new system and Dr André Ng, who has extensive experience in EPS procedures, has been selected to apply the system in human studies for the first time in the world.

Wireless chip in brain to control prosthetic limbs

A team of researchers, including academics from the Engineering Department at the University of Leicester, have been awarded a £1.2 million grant by the EPSRC (Engineering and Physical Sciences Research Council) to develop a chip which can be implanted in the brain.

The chip will be wirelessly connected to prosthetic limbs. It will collect data from neuron activity in the brain, and send the information wirelessly to move prosthetic arms or legs.

The technology has the potential to enable patients with spinal cord injuries to move paralysed parts of their bodies by using robotic devices which are controlled by the wireless chip.

The use of wireless technology provides an alternate to cables, which can be obtrusive and have risk of infections.

This ground-breaking research is being developed by academics from the University of Leicester, Newcastle University and Imperial College London..

Professor Rodrigo Quian Quiroga, who is a Bioengineer and is heading up this research at Leicester, commented:

“This research is the first of its kind. We are addressing the problem of how to transmit a signal of hundreds of neurons from inside the brain to outside the brain. The answer is by using wireless technology and advanced processing in a chip. This research will develop new technology to transmit messages from the brain to elsewhere in the body.”



Fasting 'feelgood' factor impacts stock markets

A new international study investigating the correlation between the Islamic holy month of Ramadan and stock markets has discovered that the average stock market returns in predominantly Muslim countries were historically almost nine times higher during Ramadan compared to other months of the lunar calendar.

Jedrzej Bialkowski (University of Christchurch, New Zealand), Ahmad Etebari (University of New Hampshire, United States) and Tomasz Piotr Wisniewski (University of Leicester, UK) also discovered that, at the same time, the volatility of these markets declined. These conclusions are based on a sample of 14 stock markets located in countries where Muslims constitute at least 50% of the population.

Dr Wisniewski, of the School of Management at the University of Leicester, said: "According to the new research findings, the heightened sense of social integration and possible salubrious effects of the changed dietary regimen may influence the sentiment of the investing public."



"Our research reveals that it is not only the fundamentals, but also psychology of investors that drives the valuations in stock markets."

Leicester seeks to enhance research and enterprise mission

The University of Leicester has announced the appointment of a top academician to its Senior Management Team in order to spearhead the University's research and enterprise mission.

Professor Kevin Schürer, who joins Leicester as Pro-Vice-Chancellor for

Archaeology find sheds new light on family pets

A University of Leicester archaeologist has discovered a bone belonging to a late 19th-century tortoise from Stafford Castle, Staffordshire – believed to be the earliest archaeological evidence of a tortoise kept as a family pet.

As reported in *Post-Medieval Archaeology* by Dr Richard Thomas, the significance of the find is in the insights it gives on the early importation of tortoises and the changing attitude of British society towards family pets.

The Stafford Castle tortoise bone was found amongst the skeletons of cats and



The bone belonging to a late 19th-century tortoise. Photo copyright: Post-Medieval Archaeology

dogs, in a context that suggests it was kept as a pet, possibly by the family who were caretakers at the castle at the time. The date of the find coincides with the late 19th-century increase in the trade of live animals and with the widespread importation of tortoises in particular.

Eat Your Greens

Eating more green leafy vegetables can significantly reduce the risk of developing type 2 diabetes, finds research published on bmj.com.

The authors, led by Patrice Carter at the University of Leicester, say there is a need for further investigation into the potential benefits of green leafy vegetables.

In the last two decades there has been a dramatic increase in the number of individuals developing type 2 diabetes worldwide.

Patrice Carter, of the Department of Cardiovascular Sciences, is part of the Diabetes Research Group led by

Professors Melanie Davies and Kamlesh Khunti. Patrice Carter and colleagues reviewed six studies involving over 220,000 participants that focused on the links between fruit and vegetable consumption and type 2 diabetes.

The results reveal that eating one and a half extra servings of green leafy vegetables a day reduces the risk of type 2 diabetes by 14%. However, eating more fruit and vegetables combined does not significantly affect this risk.

The authors believe that fruit and vegetables can prevent chronic diseases because of their antioxidant content. Green leafy vegetables such as spinach may also act to reduce type 2 diabetes risk due to their high magnesium content.

Research and Enterprise, will work with academic and professional staff to enhance Leicester's research income as well as further strengthen the University's enterprise and business engagement.

Professor Schürer joins the University in October from the University of Essex where he was Professor of History and Director of the UK Data Archive.

The authors argue that "our results support the evidence that 'foods' rather than isolated components such as antioxidants are beneficial for health ... results from several supplement trials have produced disappointing results for prevention of disease."

In conclusion, they believe that offering tailored advice to encourage individuals to eat more green leafy vegetables should be investigated further.

MARS MISSION

University of Leicester scientists announced the start of work, in collaboration with industry, on advanced instruments for ExoMars – a new mission to Mars in 2018.

An engineering model of the Mars Rover, called Bridget, developed by Astrium in the UK, was on display at the University, providing invited schoolchildren as well as staff and students with an exciting glimpse into the shape of things to come.

The event coincided with celebrations marking the 50th anniversary of space research at the University of Leicester.

Scientists from the University of Leicester are involved in five instruments on board the ExoMars mission, including building the hardware for three of the instruments on board the craft. The ExoMars mission is one of the key missions under the remit of the newly formed UK Space Agency.

ExoMars (Exobiology on Mars) is a

European-led robotic mission to Mars, developed by the European Space Agency (ESA) and NASA. It is part of ESA's Aurora programme for robotic exploration of the Solar System and its aim is to further characterise the chemical, geological and possible biological environment on Mars in preparation for robotic missions and then human exploration. Data from the mission will also provide invaluable input for broader studies of exobiology – the search for life on other planets.

The mission to Mars also has enormous Earth-bound applications with spin-offs in collaboration with industry bringing environmental benefits as well as technologies that can be applied in the fields of health and crime detection.

Professor Mark Sims said: "ExoMars is a key mission in exploration of the planet Mars. It will attempt to gather samples from a depth 1-2m below the surface where they are protected from radiation and oxidants thought to exist on the surface – both of which would destroy/heavily degrade complex organic compounds.



Professor Mark Sims with the engineering model of the Mars Rover, called Bridget

"The mission gives the University, and the Space Research Centre (SRC) team in particular, the opportunity to explore the chemistry and mineralogy of Mars as well as look at the possibility of life on Mars in the distant past, or even today, and at the same time create world-class science. Because of its innovative work in space instrumentation, which builds upon the SRC expertise in imaging detectors and its interdisciplinary work on sensor systems, the University is providing several instruments. This is a truly exciting opportunity to explore Mars and look for extra-terrestrial life."

Leicester Clinical Trials Unit achieves national recognition

The recently established Leicester Clinical Trials Unit (CTU) has been awarded Provisional Registration by the United Kingdom Clinical Research Collaboration (UKCRC). The CTU was established in July 2009 to provide support for the design and management of clinical trials and other well-designed clinical studies. The initial focus will be on academically led non-commercial studies but the CTU will also support commercial studies.

The establishment of the CTU is a University initiative, with core funding from the University through its College of Medicine, Biological Sciences and Psychology, but it will function as a partnership between the University and the University Hospitals of Leicester NHS Trust. The Trust has been a strong supporter of the initiative. The CTU will

build on the strong track record of both institutions in the delivery of clinical trials and provide an infrastructure to bring together the expertise of many academic clinicians and other health service researchers based in Leicester.

The Director of the CTU is Dr William D. Toff who is also Senior Lecturer in the Department of Cardiovascular Sciences. UKCRC Registration is a mark of recognition that a CTU can provide the full spectrum of expertise required to deliver high quality clinical research and that it has the capability to centrally coordinate multi-centre clinical trials to the highest standards. Registration follows a rigorous assessment process by an international committee of experts and is ratified by the UKCRC Research Funders Liaison Group on behalf of the UKCRC Board.

Exhibits from the ninth annual Sculpture in the Garden exhibition at the University Botanic Garden





LE1

ST University ranked top in the region and 15th in the UK out of 114 universities by the Times Good University Guide 2010.

LE1

ST Highly educated people make wrong assumptions about their political leanings – they are more likely to think they are left wing when they are more likely to be relatively conservative Leicester research shows.

LE1

ST Leicester academics secure record levels of research grants to support vital research – £56.1m up 17% on 2008-9.

LE1

ST World's first ever analysis of data at Leicester from a full scale clinical trial in adults shows that training Health Visitors to assess and psychologically support mothers after childbirth can prevent the development of depression over the following year.

LE1

ST Leicester's School of Museum Studies wins award for Outstanding Departmental Administration team at the 2010 Times Higher leadership awards.

LE1

ST A new international study has discovered that the average stock market returns in predominantly Muslim countries were historically almost nine times higher during Ramadan compared to other months of the lunar calendar.

LE1

ST Leicester rises three places to 12th position in the Guardian University Guide – its highest ever position.

LE1

ST A University of Leicester archaeologist has discovered a bone belonging to a late 19th-century tortoise from Stafford Castle, Staffordshire – the earliest archaeological evidence of a tortoise kept as a family pet.

LE1

ST World first remote heart operation using robotic arm carried out in Leicester thanks to University expertise.