Education that Inspires
Research that Changes the World
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Cover shot: The Virtual Reality Laboratory in SPLINT at the Department of Geography. SPLINT is one of three national centres of excellence for teaching and learning at Leicester.

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‘An institution on the up’

Introduction by Professor Robert Burgess, Vice-Chancellor

It's a great time to work and study at the University at Leicester. A recent article in the *Sunday Times* declared that “Leicester is an institution on the up”. This is a sentiment we share and I hope, as you read this issue of LE1, you too will feel the same about our work.

Others clearly concur with the *Sunday Times* analysis. For the second consecutive year Leicester has been shortlisted for the prize of “Higher Education Institution of the Year” by the *Times Higher Education Supplement*. Praised as a “strong research university with excellent teaching” their decision to select us, in successive years, is a splendid achievement and testament to the exciting and innovative developments happening at Leicester.

A key reason behind Leicester’s success in the Awards has been our impressive showing in the National Student Survey. For two consecutive years the University of Leicester has been ranked joint top amongst mainstream English universities for teaching quality and overall satisfaction. Almost three quarters of our departments featured in their subject top 10s including five subjects where Leicester was ranked top: Geography (physical and human); Mathematics; Management and English. On a two year rolling average across both surveys we also rank top for Electronic Engineering and Media & Communications.

Our research continues to flourish and you can read about some of our work in this magazine. Leicester academics won a number of key grants, securing our position amongst the top 20 universities in terms of research council income. Major awards included £1m from the Natural Environment Research Council to lead an international consortium contributing to the exploration of new sources of oil and £0.75m joint funding from the Particle Physics and Astronomy Research Council, with the European Space Agency, to design and develop life marker chip instrumentation for the Aurora ExoMars space mission.

As you may know, we are part way through the implementation of an ambitious development plan that will see £300m invested in our estate – creating first class facilities for staff and students. Later this academic year we will complete the first phase of our new £27m University Library development, while this October we open a new £24m hall of residence in our Student Village in Oadby.

We have enjoyed great success in media league tables. Leicester has recently been ranked 18th out of 110 universities by the *Times Good University Guide*. Our reputation is also growing internationally. Leicester is one of just 21 UK universities to feature amongst the world’s top 200 universities (joint 16th in the UK and 151st overall) in a detailed study produced by Shanghai Jiao Tong University.

Leicester has also recently joined the 1994 Group; a group of internationally renowned universities engaged in leading-edge research and high quality teaching. The group includes Durham, Warwick and York universities.

I hope that after reading this issue of LE1 you will also agree with the *Sunday Times* that “Leicester is an institution on the up”. If you have any views or comments on our activities I would be delighted to receive them.

Leicester has recently joined the 1994 Group; a grouping of internationally renowned universities engaged in innovative research and high quality teaching.
Rice projects in Southern Borneo have devastated tropical peatland releasing tons of carbon and threatening the environment for wildlife like the orang-utan.

(Photo: Getty Images)
Taking the lead on the environment

The Earth’s climate is changing more rapidly now than at any time since the end of the last ice age, 10,000 years ago. It is possibly the single most important challenge now facing the human race.

Meeting this challenge are three research initiatives based at the University of Leicester, each one leading the way towards understanding and resolving environmental issues that pose a threat to communities around the world.

Observation Earth
Leicester scientists are using space technology to monitor the effects of environmental change.

What price rice?
The Mega Rice project was designed to generate food for southern Borneo. Instead it has devastated its environment, releasing tons of carbon into the atmosphere.

Saving Lake Naivasha
Lake Naivasha is being destroyed by the very people who depend on it economically. A Leicester scientist is leading work to protect the lake whilst safeguarding the economic well-being of those who depend upon it.
It is no mean tribute to the work of the Earth Observation Science Group at the University of Leicester Space Research Centre that it is involved in three of the ten instruments on board the largest earth observation satellite ever built.
Launched in 2002, the European Space Agency’s Envisat (environmental satellite) circles the Earth 14 times a day at a speed of seven kilometres per second. About 250 gigabytes of data products are generated every day, providing information for immediate use and building up an archive for future generations of scientists to use.

With Envisat at its heart a Leicester project has been hailed by the Natural Environment Research Council (NERC) as one of its top ten achievements of the year. Using Envisat’s Scanning Imaging Absorption Spectrometer for Atmospheric Chartography (SCIAMACHY) instrument, Leicester scientists can measure carbon dioxide in the atmosphere as well as other climatically important gases.

By measuring atmospheric trace gases through the observation of reflected and scattered sunlight, it allows scientists for the first time to measure from space the net amount of carbon dioxide that is taken up by plants.

Using 20,000 individual measurements a month, researchers are monitoring carbon dioxide drawn down over Siberia, North America and Northern Europe. Dr Paul Monks said: “Usually researchers put up a tower and measure carbon dioxide concentrations in the surrounding kilometres, but we are taking high precision measurements on a continental scale. Analysing a year’s measurements for each continent takes 12 weeks of computer time on 60 processors, and we can actually see streaks of low carbon dioxide where the vegetation is sucking it out of the atmosphere during the growing season.”

The SCIAMACHY work on carbon dioxide at Leicester has been funded by NERC’s Centre for Observation of Air-Sea Interactions and Fluxes (CASIX) and will provide important information for policy makers and scientists alike.

Envisat also monitors global sea surface temperature and rising sea levels, the melting ice sheets of Greenland and Antarctica, air pollution, shifts in the movement of the Earth’s crust, oil slicks and illegal fisheries, all in real time. The availability of real time information in this way means that Envisat is playing a major role in the development of prediction models such as forecasts for sea surface, UV and vegetation stress.

Professor David Llewellyn-Jones, of the University and the Principal Investigator for the UK-produced Advanced Along Track Scanning Radiometer (AATSR) instrument on Envisat, commented: “The global sea temperature has been changing over the years. In fact, it has been changing ever since records began, but a detailed analysis by colleagues at Leicester of our recent data now provides independent quantitative evidence that there is a distinctive upward trend in global sea temperature and we are now tracking this from Envisat.”

As well as the study of global sea and land surface temperatures through the AATSR, Leicester Environmental Observation scientists are using Envisat’s Michelson Interferometer for Passive Atmospheric Sounding (MIPAS), to investigate conditions in the atmosphere that affect ozone, such as polar stratospheric clouds and tropical clouds.

Head of the Earth Observation Science Group, Dr John Remedios, said: “It makes us very proud to see that the UK really can help to produce and exploit space instruments which are the best in the world. The data they deliver represent a very important long-term and consistent monitor of climate change and it is vital that we build and fly space instruments in the future which can continue to observe what is really happening with our climate.”
The problem is immense and the solution long-term, but University of Leicester ecologists are working on a flagship European initiative to save the environment while safeguarding livelihoods in the region.

After decades of logging, compounded by the Indonesian government’s disastrous ‘Mega Rice Project’ of the late 1990s, the peatland swamps of southern Borneo have been left denuded of vegetation, drained and vulnerable to fires, which, in years of drought, regularly cast a pall of smoke over South East Asia and release carbon that has been absorbed by the landscape over 26,000 years.

University of Leicester ecologist Dr Sue Page is working with fellow Leicester geographers Dr Kevin Tansey and Agata Hoscilo, as part of the three year RESTORPEAT initiative. Involving researchers from 14 European and South East Asian partners, its aim is to understand both cause and effect of peatland fires and to begin to restore the forest swamps, promote sustainable land management and improve the livelihoods of the local people.

Tropical peatland is one of the least understood ecosystems of the world, covering 45 million hectares (nearly twice the size of the UK). Not only does it provide natural storage for water and carbon, but it is also home to the beleaguered orang-utan and Storm’s stork.

Sue Page warns: “One of the planet’s most important carbon sinks is poised to become a major source of the gas. Even without burning, the prospects aren’t good. As soon as a swamp is drained, bacteria begin oxidising the dried peat, releasing its stored carbon. Fire hastens a process that is going on anyway. The key to reversing the damage is to raise the water table, restore the vegetation cover and prevent further fires.”

Part of the solution is to begin to dam the 4,600 kilometres of drainage canals – some as wide as 30 metres – dug out for the ‘Mega Rice Project’, an unsuccessful attempt to turn over the area to rice production which resulted in the devastation of half a million hectares of peat swamp without producing any productive rice.

As a result of this drainage, from July to late October the land is prey to fires, some started deliberately for land clearance, others the result of a casually discarded cigarette. In some places the peat is 12 metres deep and can smoulder for days, re-igniting in times of drought. In Central Kalimantan alone there are more than 1 million hectares of deforested and drained peatland that can sustain neither the environment nor the local population.

The drained swamps now contribute to global warming in a significant way. Using satellite data and observations on the ground, researchers have estimated that the devastating 1997 fires alone released as much as 40% CO₂ as an average year’s emissions from burning fossil fuels worldwide.

Dr Page commented: “The peatland restoration process may take up to 20 years before we see any real improvements. But if we do nothing, then the peatland carbon store will be a significant source of greenhouse gases which contribute to global climate change. Through the RESTORPEAT project we hope to improve land management practices and reduce the incidence of uncontrolled fires on the peatlands of Indonesia. This will have positive benefits for local economies and environments, and also at regional and global scales through reductions in air pollution and emissions of greenhouse gases.”

While the affluent nations of the world are trying to cut down carbon emissions caused by the profligacy of their lifestyle, in South-East Asia the same problem exists at subsistence level, leaving vast areas of wasteland leaking CO₂ into the atmosphere.
Anyone in Europe who has bought Kenyan flowers, Kenyan beans, Kenyan broccoli or just a bag of Kenyan salad has indirectly enjoyed the bounty of Lake Naivasha. The problem is that the water that generated this produce is running out and the economy that is benefiting from the sale of these, and other goods, is destroying the environment that produces them.

One voice that has made itself heard internationally in defence of Lake Naivasha is that of Dr David Harper, a University of Leicester biologist with more than 17 years’ experience leading research to the lake and its environs. Dr Harper recently addressed the Fourth World Water Forum in Mexico City in a session co-ordinated by the UN Environmental Program and UNESCO-International Hydrology Program.

Although Dr Harper’s warning is dire, he considers himself fortunate that since 1987 his University research has consistently been supported by the Earthwatch Institute, the largest environmental charity to support field research that is ‘cutting edge’ in the sense of unravelling environmental problems and solutions, rather than the development of new knowledge or technologies.

It is, he says, almost the only funding agency in the world which does not have a narrow time-scale of vision, and he believes he would not have been able to unravel the complex problems of Lake Naivasha if he had had to rely on more typical, short-term funding.

The introduction of more than a dozen invasive species of animal and plant life, the unsustainable extraction of water for agriculture, drinking water and electricity and the destruction of its surrounding swamp by cattle overgrazing have meant that the lake has lost its natural buffers against the inflow of sediment and nutrients.

Dr Harper has three recommendations to save the lake from ecological disaster. Firstly, to limit water extraction and to share the not-inconsiderable water that is available amongst all users, equitably. Secondly to educate the local populace in ‘wise use’ of water; and thirdly to restore the swamps of the lake, funded by ‘ecosystem trading’, whereby the real cost of all goods and energy sources generated by the lake are met by the end-user.

The 17 years during which Dr Harper has led the Earthwatch Lakes of the Rift Valley research project have helped highlight and drive local and international conservation efforts and have brought to the world’s notice the true scale of ecological cycles in the lake. What use we make of the knowledge, he says, is in the hands of us all.

Saving Lake Naivasha

Anyone in Europe who has bought Kenyan flowers, Kenyan beans, Kenyan broccoli or just a bag of Kenyan salad has indirectly enjoyed the bounty of Lake Naivasha.
The complex interrelationships between environment, management and workforce are reflected in Karen Dale and Gibson Burrell’s research.

Innovative research by Dr Karen Dale and Professor Gibson Burrell, at the University of Leicester Management Centre, explores the ways that the spaces in which we work, rest and play shape our lives.

Karen Dale explains: “There are a number of high profile design companies who go into organisations and help the management to reorganise the workspace to attain more efficient use of space and resources. Ideas such as ‘hot desking’ and home working have been around for a while as ways of cutting down the number of expensive built assets a company needs.”

Beyond this simple economic motivation, there are many interesting and innovative attempts to use organisational space to manipulate people’s behaviour, change attitudes, shape their commitment to the company and nurture creativity and innovation.

A number of high profile organisations have radically restructured their workspaces. These include the UK Treasury building, where over seven miles of internal walls have been removed, massively transforming a traditional structure based around a hierarchy of private offices and ‘corridors of power’. The official government document makes it clear that the physical changes have been made in order to change how the department functions: to remove

< A central atrium acts as a ‘village street’, as in this architect’s drawing of the new University of Leicester library.
historical organisational barriers and hierarchy, instigate greater openness, flexibility, responsiveness, team work and sharing of information”.

The two academics studied the case of a former utility, which, after privatisation, moved out of traditional office space and into an award winning building, designed on three floors round an atrium. Staff anywhere on any of the three floors could survey the entire operation. The new space was designed to create the maximum number of positive interactions between staff, with six sets of centralised facilities specifically intended to form networking spaces, described as ‘village pumps’, with the idea of an informal gathering place where ideas and information would be shared.

As the former utility moved into its new headquarters, many of the ‘old-style’ unionised workforce were offered redundancy and a range of new jobs was created, attracting younger MBA graduates and people seen as having more relevant business skills. Traditional collective bargaining on pay and conditions was jettisoned, and individual contracts brought in. There was a move towards team-working, emphasising that career development required an understanding of the whole organisation, its processes and its business.

The work space and the human resource strategy were redesigned to complement each other. Newcomers may have thought that people who worked there disliked the building because it was so open but the majority of employees liked it. It created a completely new culture and it fitted with their career aspirations and business orientation.

However, a few years later the business was taken over by a major European company and the atmosphere began to change. Whereas previously people had made positive use of the open plan environment, with crowding and uncertainties about job security, they began to claw back their own space, constructing semi-private areas with filing cabinets and office furniture. The ‘village pumps’ began to be seen as time-wasting and the original concept of creative interaction began to be lost. Over one weekend the voltage to the coffee machines was doubled so that the whole process could be sped up to prevent people waiting around talking!

The research shows that whilst this particular workplace changed under pressure, ‘village pumps’ are being used in large numbers of companies who are restructuring their physical spaces. Terms are drawn from comfortable concepts such as villages and towns, so that positive community relationships get foregrounded and negative workplace connotations are backgrounded. Other designs, such as the well known British Airways building, incorporate the idea of the shopping mall. It seems that this is an attempt by organisations to tap into the more positive images people have of themselves as consumers. Being a consumer implies choice, variety and autonomy, whereas being an employee smacks of control and authority. Many companies also look to ideas of ‘creative play’, or as John Holm of design consultants DEGW puts it, ‘holidaying at work’. So although organisations want their employees to identify with the company and its goals, they seem to be drawing on more positive aspects of peoples’ sense of themselves, rather than traditional images of work, and this is being particularly worked out through spatial redesign.

Ironically, the embodiment of organisational aims and identity is partly necessary because people are less likely to work solely in one place. Rather, there are multiple places of work, including planes, trains, cafés and airports. Employees are less controlled by direct observation of their work and management structuring of their time and activities. Therefore, this control has to be more internalised as part of their sense of self, as a deeper motivation than work simply as something one does, in a particular place, between the hours of 9 and 5 and then leaves behind.

These complex interrelationships between environment, management and workforce are reflected in the research Karen Dale and Gibson Burrell are currently carrying out at the University of Leicester. Its aims are to give people an understanding of the importance of organisations and the impact they have on identity. People are not, they point out, just abstract agents. Our social world is built through interactions between things and people and, as such, space is a neglected but highly significant part of this world.
Look up on a clear night. You’re seeing the splendour of the cosmos. It’s serene, beautiful and has fascinated and inspired people for millennia. Planets can be seen with the naked eye. There are more stars than could ever be counted in a human lifetime.

Some of the starlight was generated before humans evolved, before there was even an Earth. Unimaginable things are happening out there, and we’re still finding names for those we’ve seen. The distances, timescales and energies involved are inconceivable in all but the most abstract way.

This is the universe. It’s where we live, yet we know precious little about it.

Article: Tim Macedo-Hatch
**In a moment Gamma-Ray Bursts can emit more energy than our Sun would do in 880 billion years.**

When we look at the universe, we are limited by our eyes. The light we see is only a small part of the electromagnetic spectrum. This tells us a lot, but still only a fraction of what’s happening. Many objects in space emit X-rays and by studying these we can better understand what the objects are made of, and ultimately, their origins.

The University of Leicester has been at the forefront of space science research for over 40 years. Scientists in the Department of Physics and Astronomy continue to design, build and operate some of the most advanced instrumentation ever launched. Equipment constructed here in Leicester has operated in space each year since 1967.

In November 2004 NASA launched Swift, a $250m space observatory. Swift is designed to study the most violent and unpredictable explosions in the universe – Gamma-Ray Bursts (GRBs). Invisible to the naked eye, these are fleeting events, lasting from anywhere between a fraction of a second to a couple of minutes. In this brief time span they emit more energy than our Sun would do in 880 billion years. When a GRB detonates in a distant galaxy, it illuminates the whole cosmos.

An afterglow of X-rays – which can be studied to help us understand what GRBs are, and why they occur – follows the initial explosion. The University of Leicester designed and built the X-ray camera used by Swift to study afterglows.

Swift’s X-ray camera was also used to support NASA’s ‘Deep Impact’ mission, in which a probe was deliberately crashed into the comet Tempel-1 in July 2005. Debris from the impact interacted with the solar wind to create X-rays. The intensity of the X-ray emission was proportional to how much debris was produced.

Dr Paul O’Brien of the University of Leicester Swift team explained that: “Prior to its rendezvous with the Deep Impact probe, the comet Tempel-1 was a rather dim X-ray source, but things change when you ram a comet with a copper probe travelling at over 20,000 miles per hour.” He estimates that the impact produced tens of thousands of tons of debris, enough to cover a football pitch with ten metres of comet dust. Studying the Swift X-ray data will help us to understand what comets are made of and give us a clearer picture of how the solar system formed.

The X-ray universe is a tumultuous place. An object may quickly change its appearance or become active without warning. One drawback of observing with most X-ray telescopes is that they have narrow fields of view, making it impractical to monitor large areas of sky. A wealth of knowledge has passed us by because our telescopes weren’t pointing in the right direction at the right time.

In preparation at the University of Leicester is ‘Lobster’, a revolutionary instrument that will address precisely this need when it’s launched in 2011. Instead of lenses, it contains devices called microchannel plates that focus X-rays.
onto a set of detectors. The design of these plates was inspired by the unusual eyes of the crustacean after which the instrument was named.

Professor George Fraser is Director of the Space Research Centre at the University. As principal investigator of the Lobster project, he leads an international team of scientists. He said: “With a field of view of 180 x 30º, Lobster will map the complete sky every 90 minutes, and is expected to be ten times more sensitive than [any] other all-sky monitor”. When something unusual is detected by Lobster, more powerful instruments could be aimed at it, and we need never miss a significant event again.

The University of Leicester has also been actively involved in many planetary missions, including the extremely successful Cassini-Huygens mission to Saturn and its moon Titan. Professor Stan Cowley, Head of Solar Terrestrial Physics, is one of five scientists analysing the data from Cassini’s MAG instrument - this accurately measures the magnetic fields around Saturn enabling us to understand how Titan affects the Saturn’s magnetosphere.

Leicester is also playing a lead role in the European Space Agency’s programme of missions to Mars called Aurora: – the first mission is ExoMars. ExoMars will have a stationary platform that lands on the surface and a rover that can explore it. NASA currently has two rovers on the surface of Mars, but compared to them, the ExoMars rover should have a much greater capability to travel distances and to make its own decisions about science targets.

Funded by the Particle Physics and Astronomy Research Council, the instruments that ExoMars will carry are advanced and one of the aims is to carry out an experiment – the Life Market Chip – to search for traces of past or present life on Mars. This is being led by Dr Marks Sims of the University of Leicester with a consortium of other universities and companies involved.

The Life Marker Chip could be seen as an advanced ‘pregnancy test’ which will be able to look for different molecules (particularly proteins) on Mars that could have organic origins. If all goes to plan, Leicester scientists could be the first people to find life on Mars...if it exists.

Leicester also has involvement with another possible instrument, the XRD spectrometer, that will analyse martian rocks to see what minerals are present.

It was due to the University’s eminence in space science that Leicester is home to the National Space Centre, the UK’s only visitor attraction dedicated to space. Over 200,000 people annually visit its exhibitions, planetarium and Challenger Learning Centre.

We live in a turbulent and evolving universe, the mysteries of which we still barely understand. The creativity and dedication of University of Leicester scientists have proved invaluable to increasing the sum of human understanding, and justify the University’s stellar international reputation in Space Science.
Leicester’s excellent credentials in teaching and student support are reflected by the national standing it gained from the inaugural National Student Survey.
In 2006 the University of Leicester was invited to join the 1994 Group – a coalition of internationally recognised research intensive universities. Each of the universities in the Group is engaged in leading-edge research and high-quality teaching and is committed to meeting the diverse needs of students, staff and policy makers.

Leicester’s excellent credentials in teaching and student support are also reflected by the national standing it gained from the inaugural National Student Survey. Leicester was ranked joint first among universities teaching full-time students and this helped the University break into the top 20 of the Times Good University Guide.

The University has achieved the distinction of gaining a rating equivalent to ‘Excellent’ (a score of 22 or above out of 24) in every assessment carried out since 1988 by the Government’s Quality Assurance Agency.

It has been further recognised by awards of National Teaching Fellowships, from the Higher Education Funding Council, recognising outstanding innovations in teaching. In three consecutive years, lecturers at the University of Leicester have won Fellowships in recognition of their exemplary work in their disciplines, providing a model for the sector as a whole.

A further endorsement of Leicester’s reputation as a University excelling in teaching has come from the announcement of a multi-million pound award for three Centres of Excellence for Teaching and Learning (CETLS).

The national CETL initiative aims to reward excellent teaching practice in higher education institutions and to further invest in that practice to deliver substantial benefits to students, teachers and institutions. Funded by the Higher Education Funding Council for England it represents the largest ever single investment initiative in teaching and learning in higher education.

There are nine Centres of Excellence of Teaching and Learning in the East Midlands region based at the Universities of Leicester, Loughborough, Nottingham and Nottingham Trent. These CETLs have joined together in a proactive and productive network. They have a common goal of enhancing the student experience, and primary aims are to promote sharing of best practice, innovation, reward and recognition of practitioners in teaching and learning and pedagogic research.

The investment into the region through the funding of these CETLs, in the order of £32 million, provides a unique opportunity for collaboration in order to maximise the impact of the work of the CETLs not only within the participating Universities, but also regionally and nationally.

Leicester has been rated ‘excellent’ in every teaching assessment since 1988.
The Centres come from a variety of disciplines, exemplifying Leicester’s teaching strengths across a spectrum of its activities. The three CETLs associated with Leicester are:

- **GENIE**, (Genetics Education Networking for Innovation and Excellence), part of the Department of Genetics.
- **πCETL**: A consortium of Leicester’s Department of Physics and Astronomy, the Open University and University of Reading.
- **SPLINT** (Spatial Literacy in Teaching), led by the University of Leicester’s Department of Geography.

The Centres, worth over a total of £12m shared between the institutions involved, are not simply an endorsement of Leicester’s ability to provide a good all-round education for its students, but signifies how Leicester is a role model with respect to the delivery of higher education.

Vice-Chancellor Professor Robert Burgess believes the University’s academic reputation is founded on its delivery of higher education. He said: “Leicester has a terrific record for teaching and learning success and the award of these Centres bring investment and new jobs to the University. Teaching is as important as research at Leicester and it is very interesting to see the innovations in the curriculum, and in teaching, that these awards recognise.

“The University of Leicester is a leading international research and teaching University. Our reputation for teaching excellence stems from the quality of our academic staff and the support systems that are in place for our students. Our staff are engaged in education that inspires new generations of learners who enter the workplace with the skills employers value.”

**GENIE**

GENIE, (Genetics Education Networking for Innovation and Excellence) is part of the Department of Genetics. The Department, considered an area of excellence for both teaching and research, and a recipient of the Queen’s Anniversary Prize for Higher and Further Education, is the only 5* rated Genetics Department in the UK (the latest government Research Assessment Exercise).

The Department takes a national lead in developing innovative approaches for genetics education, through a network of institutions sharing information and resources and experience. An internationally accessible database of these resources will also be assembled.

Already committed to promoting an awareness of science outside the world of academia, the Leicester Genetics Department can widen its outreach through GENIE, with novel approaches to develop generic skills and widen participation in scientific education.

**How the GENIE CETL will improve the student experience**

How will a student know that the GENIE is out of the bottle? The most immediate changes that students will see are from the CETL money that is being spent on capital improvements. In particular half a million pounds has been spent to renovate the teaching laboratories in the Maurice Shock building and nearly three quarters of a million pounds on a new computing lab. These provide excellent, state-of-the-art facilities and improve the learning experience in practical classes.

The bulk of the CETL money, however, is going to design innovative teaching methods and resources, both by employing staff dedicated to this work and funding academics to carry out one-off projects. One project already being worked on is to develop a set of real-life genetics problems that students will work on in groups, with an extensive set of researched options for different approaches at each stage in an experimental design. Right and wrong decisions will be taken, with more than one solution to the problem. This kind of exercise is enjoyed by students and facilitates learning, but requires substantial time to prepare, which the CETL will now allow. Students from a broad range of subjects will find their learning enhanced, reflecting the broad impact of genetics on science and society as a whole.

**πCETL**

The Department of Physics and Astronomy is part of a consortium, which also includes the Open University and the University of Reading working together to extend their established reputations as innovators in problem-based learning, skills-based lab teaching and multimedia teaching. By harnessing the power of new technology, and sharing science teaching resources, the πCETL Centre, based at Leicester will offer students new learning experiences that will make clear the power and fascination of cutting edge physics and astronomy.

The Physics and Astronomy Department at Leicester houses the world renowned Space Research Centre and has been involved in space exploration since the 1960s. It won the Queen’s Anniversary Prize for Higher and Further Education.

From top to bottom: GENIE Laboratory, πCETL, SPLINT’s Virtual Reality Laboratory
SPLINT

SPLINT (Spatial Literacy in Teaching): This Centre is led by the University of Leicester’s Department of Geography, working in collaboration with other University of Leicester colleagues and departments, the University of Nottingham and University College, London. The Department is home to the University’s Geographical Information Systems experts at the University of Leicester. The Department is renowned for its postgraduate teaching and prestigious Masters programmes.

The SPLINT CETL is a national resource, with two main goals: to enhance approaches to the learning and teaching of spatial literacy, developing innovative curricula drawing on new technologies such as virtual reality, and to extend these techniques to other disciplines, so that spatial literacy and geospatial technologies such as Geographical Information Systems become familiar across the entire UK Higher Education sector.
W G Hoskins, founder of the
Department of English Local History

The Making of ENGLAND

Half a century ago, a publication changed people’s views about landscape and history.

W G Hoskins’ book, *The Making of the English Landscape*, had a dramatic effect, not just on historians but on the general public, who realised they could find clues to history in what lay around them in gardens, fields, along roads and in cities. It was the first time anyone had thought of landscape as a historical record.

The 50th anniversary of the publication was recently celebrated at the University of Leicester’s Centre for English Local History. The event, sponsored by English Heritage, celebrated the discipline of landscape history which Hoskins inspired, and looked at some of the themes from his book – rural settlements, towns and buildings, and added some new ones such as perceptions, ritual and spiritual dimensions and scientific analysis of the environment.

To claim that Hoskins inspired people was no exaggeration. *The Making of the English Landscape* covered the whole of England from prehistory to the 20th century, and spawned radio talks and two television series, *One Man’s England*. In a recent feature in BBC History Professor Christopher Dyer, Head of English Local History at Leicester, illustrated how innovative

Hoskins’ book, and the Leicester Centre that he created, remain the home of English local history.
Hoskins’ ideas were and how they encouraged people to see their world in a different way.

That Leicester should commemorate Hoskins’ anniversary was no accident. Originally an economist, in 1948 Hoskins founded the Centre of English Local History at the University, where he was working at the time. Although he was a Devon man by birth and retained an interest in his home county, he has also become strongly associated with Leicestershire and Wigston Magna, where he lived.

The departmental seeds he sowed in 1948 have taken root and the University’s Centre for English Local History is now renowned throughout the country for its landscape history. “What is so distinctive is that we place people on the map,” Professor Dyer said. “It is social history leading to landscape history.

“We recognise that different landscapes have different social complexities. For instance, Nonconformists were more prevalent in woodland areas than in champion (open field) landscapes, because woodland societies were less settled and so the people who lived there were more independent.

“Woodlands are also where you get fuel and coal for industry, bark for tanning and so on. They are where you find farmers who keep cattle and who have spare time for other activities. So places like Birmingham, Manchester and the Black Country not only had the right sort of materials but also the right sort of people to develop their industries. Industry is rare in champion areas, one exception, interestingly, being Leicestershire which saw the development of framework knitting.”

What has now become known as the ‘Leicester School of Local History’ identified and peopled the different types of landscapes. Among the major contributions Leicester has made is a study of village origins, notably through the Whittlewood project, funded by the Arts and Humanities Research Council.

If Hoskins was inspirational and one of the great characters of his age, he has not always been proved right, nor was he always easy to work with. While some of the premises in *The Making of the English Landscape* are merely controversial – for instance his description of the 20th century as ‘an age of barbaric vandalism’ – his views on landscape pre-500AD are now known to be incorrect. Hoskins saw the development of today’s landscape as the result of Anglo Saxon invasions, dismissing prehistory and the Romans as having contributed virtually nothing at all.

“We now know that this was wrong,” Professor Dyer said. “The legacy from prehistory and Roman times is very important. Contrary to Hoskins’ opinion, archaeological finds have proved that areas like East Leicester – far from being heavily wooded, as he believed – were densely settled right from Roman times. There was a lot of cultivated land which never dropped out of cultivation.”

Even at the time of the compilation of the 11th century *Domesday Book*, the amount of woodland in the country was quite small. There were then, as today, Professor Dyer says, “very few parts of England where you could get lost in the woods.”

*The Making of the English Landscape* was written at Oxford, where Hoskins worked between two periods of employment at Leicester. Even so, it has a Leicester connection. Frederick Attenborough, the Principal of what was then the University College, Leicester, was a keen photographer and in his spare time took many photographs of the local landscape which Hoskins used in his book. Many of them are now housed in the Library store.

It was Frederick Attenborough who encouraged Hoskins to set up the ‘Department’ of English Local History in 1948. Hoskins was only at the head of his new department for a few years, but he has been followed by an illustrious line of academics, including HPR Finberg, AM Everitt, Joan Thirsk, Charles Phythian-Adams and currently Christopher Dyer.

The study of English Local History is the study of ordinary people in their local landscape: our history is there for everyone to see. When we look at the ‘typically English’ farmland of small hedged fields, we are looking at the results of the Enclosure Acts passed between 1760 and 1830. When we see a bend in the road we may be looking at all that is left of a ridge and furrow farming system, originally ploughed in the 9th century and worked into late medieval times.

Looking to the future of English Local History at Leicester, Professor Dyer believes that the highly acclaimed Leicester School of Landscape must remain embedded at its core. He also argues that the Centre’s approach should be multi-period if it is to continue integrating landscape into historical interpretation. “It is a characteristic of landscape history that you can’t study it in small periods,” he said. “Hoskins thought you could start in 500AD. Now we know you have to start with 5000BC.”
The University of Leicester emerged triumphant for the second year running in the 2006 National Student Survey, results of which were announced in August.

The University was again ranked joint top among mainstream English universities and many subject areas were identified as leaders in the UK for student satisfaction and teaching quality.

Using the full data from both surveys the University is ranked joint first in the UK for student satisfaction in Mathematics (out of 50 universities) and English (out of 93 universities) as well as Media and Communication (out of 40 universities), Physical Geography (out of 54 universities) and Electrical Engineering (out of 44 universities).

In total, 14 subject areas out of 19 submitted were ranked in the top 10 in the country for student satisfaction.

**Top for teaching**

**European accolade for Leicester Law Programme**

A distance learning programme run by the University of Leicester Department of Law has been designated a Jean Monnet Module of Excellence by the European Union, and will receive European funding of £15,000 over three years.

From 2006 a module of the University’s European Union Law Distance Learning LLM Programme will be co-financed through the European Commission Jean Monnet Action Programme.

**Institution of the Year**

The University of Leicester achieved the distinction of being shortlisted as Institution of the Year for the second year in a row by the *Times Higher Education* Supplement.

Leicester was one of only four shortlisted in the inaugural competition – and has made the final shortlist again in 2006.

The THES stated: “Some categories were so closely fought that the judges would gladly have made four awards. A case in point was the Higher Education Institution of the Year, the award that will inevitably attract most attention. Leicester’s all round progress represented a serious challenge.”

Professor Ken Pounds has been shortlisted for the Lifetime Achievement Award by the 2006 THES Awards. Professor Pounds was appointed Professor of Space Physics at Leicester in 1973. His work in Physics earned him the Fellowship of the Royal Society in 1981 and a CBE in 1984.

The results will be announced in November.
New building – new thinking

Leicester is in the midst of a £300 million Development Plan – one of the most ambitious programmes of any University in the UK.

It is development that has at its very core a determination to create at Leicester the best research and teaching infrastructure, providing facilities for staff, students and visitors in keeping with the University’s elite ranking.

The aim is to create a campus fit for purpose – providing room for new inspiration, innovation and ideas.

Four years on from the announcement of the Plan, progress has taken place on an unprecedented scale with over £130m being spent or committed to projects.

The centrepiece of the development plan – the creation of a new Library – has also moved forward with construction commencing in May 2005 for a £27m facility, twice the size of the existing Library. It is due to be completed in 2007.

The vision is to create an iconic building for Leicester that will physically underpin its commitment to provide the best opportunities for learning for its growing body of students.

Leicester has also invested £23m in order to redevelop and refurbish part of its residential estate in Oadby, Leicester.

The aim is to provide first-class residential facilities for students, conference delegates and visitors. Leicester’s residences – many of them historic Edwardian houses – are regarded among the best accommodation for students in the country and the new investment will further enhance the University’s and city’s reputation.

Image: New Hall, opens to its first residents this autumn.

Leicester takes lead on national medical skills training

A new approach to training and assessing clinical staff – using actors as patients and relatives – is being pioneered by the University of Leicester and University Hospitals of Leicester NHS Trust (UHL) as part of the development of a skills passport that will be recognised throughout the NHS.

Secretary of State for Health and local MP Patricia Hewitt agreed to be one of the first actors to help put fifth year University of Leicester medical students through their paces.

The Leicester Clinical Assessment Tool (LCAT) aims to remove the need for the wide variety of skills checklists devised over the years by different trusts across the UK.

LCAT informs the theoretical and practical curriculum for the training programme and is used in all educational and regulatory assessment of skills.
Leicester ranked first for two consecutive years for student satisfaction and teaching quality by the National Student Survey amongst mainstream English universities.

A University of Leicester psychologist has created a global projection of subjective well-being: the first ever ‘world map of happiness’.

Five Leicester departments are ranked top in their subject by the National Student Survey. Over two-thirds of Leicester departments feature in their subject top 10s.

The University’s IMPALA project is spearheading innovative research on how student learning can be enhanced by downloading audio onto personal MP3 players – known as podcasting.

The University bursts into the *Times Good University Guide* top 20 in 18th position (out of 110 universities), its highest ever ranking.

Leicester academics conduct the world’s first ever use of 3-D ultrasound scan to assess placental function and blood flow. This pioneering work assesses how fetal growth influences the development of illnesses in adult life.

Leading-edge research from the Department of Cardiovascular Science shows no evidence between long haul flights and deep vein thrombosis (DVT).

The University is shortlisted for a second successive year for the award of Higher Education Institution of the Year by the *Times Higher Education Supplement*.

Leicester joins the 1994 Group of internationally renowned universities engaged in leading-edge research and high quality teaching.