



Annual Review 2013

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# BEST UNIVERSITY IN THE UK

GUARDIAN LEAGUE TABLE 2014



the guardian

In June 2013, Surrey achieved eighth place in the *Guardian* university league table top ten. Ten subjects taught at Surrey were also awarded top ten places in the *Guardian*'s subject league tables, with Hospitality and Tourism occupying the number one position for the fifth consecutive year.

## £1.4B ECONOMIC IMPACT

OVER  
2300  
PARTNERS

12TH  
THE TIMES/SUNDAY TIMES  
GOOD UNIVERSITY  
LEAGUE TABLE

MORE THAN  
£40M  
SUPPORT

92%  
STUDENT  
SATISFACTION

### Transforming the economy

An economic impact study of the University conducted in autumn 2013 by BiGGAR Economics found that, in 2012/13, the University of Surrey and the Surrey Research Park generated around £1.4 billion Gross Value Added for the UK economy and directly or indirectly supported around 16,000 jobs.

The study also found that the University generates an estimated £6.45 economic impact for every £1 income earned.

### Committed to collaboration

We are founder members of the University Global Partnership Network, co-operating with major overseas universities in all activities. We work with more than 2,300 partner organisations.

Our researchers think creatively about what they can achieve through interdisciplinary collaboration, and we have attracted over 100 business partners to work with our academics through our Knowledge Transfer Account programme.

### Rising up The Times rankings

In September, Surrey jumped 14 places to twelfth position in the new joint *Times/Sunday Times Good University Guide* league table, the University's highest ever position in *The Times/Sunday Times*. Surrey is now ranked number two in the South East, second only to the University of Oxford. Eleven of the subjects achieved top ten rankings, with Hospitality and Tourism maintaining its number one position in the UK.

### Signed up for 5G

A consortium of key global players have pledged support of £30 million (which includes time, expertise and other contributions) for our forthcoming 5G Innovation Centre, in addition to the £11.6 million awarded by the Higher Education Funding Council of England from the UK Research Partnership Investment Fund. The group consists of some of the world's leading mobile network operators, infrastructure and tools providers, media and communication organisations.

### Best-ever student satisfaction

Our final-year students have proclaimed themselves more satisfied than ever with their higher education experience, according to the influential National Student Survey (NSS) 2013. Surrey moved up to ninth place in the country for student satisfaction, with 92 per cent of students who took the survey expressing satisfaction with the quality of their course. This was the third successive year in which Surrey's student satisfaction levels have increased.

# ► Contents

## ► An overview of 2012/13 from the Vice-Chancellor



I am very proud of what the University has achieved over the last twelve months.

This year has seen a significant shift in the way universities in the UK are financed, the cost of higher education and the quality expected from prospective students. In this critical period, Surrey has been working hard to consolidate our strengths and develop new opportunities with some notable successes.

Electronic Engineering was among twelve university departments to have the prestigious title of Regius Professor bestowed upon it by The Queen to mark the Diamond Jubilee. A Regius Professorship is a rare privilege, and recognises the outstanding quality of teaching and research at an institution.

We have continued to make great strides up the UK league table rankings, especially in the *Guardian* where we reached eighth place in the country. We also achieved our best ever National Student Survey result with a 92 per cent satisfaction rate placing us ninth in the country. The University community works together to provide a stimulating environment, ensuring that the entire student journey from Open Days to graduation is exceptional.

Demand from prospective students for a place at Surrey has continued to grow, with a further 30 per cent increase in undergraduate applications, whilst at the same time our entrance standards continue to rise. This year we confirmed plans to establish a new Veterinary School, one of only eight in the UK, with its first intake in 2014. The new purpose built facilities will allow us to offer innovative degree programmes to train the veterinary leaders of the future and to support state-of-the-art research.

We continue to cement our status as a leading University for research excellence and collaboration with business. Our successful government funding bid to create the world's first research centre dedicated to mobile technology will bring momentum to the region's economic growth. With additional support from a consortium of leading mobile network operators and organisations, the new 5G Innovation Centre will spearhead international research into the next generation of mobile communication technology.

As we continue our work to realise our ambitions as a world-class institution, 2012/13 has been a year rich in achievement and new developments. These are just a few highlights from the last twelve months and I hope you enjoy reading about these and many more in this Annual Review.

**Professor Sir Christopher M. Snowden FRS, FREng**  
President and Vice-Chancellor



UNIVERSITY OF  
SURREY



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## ➤ Fuelled by innovation & a passion for learning

At a time of uncertainty across the higher education sector, how has the University of Surrey continued to forge a path of growth and success?

In June 2013, the University of Surrey entered the *Guardian's* top ten UK university rankings for the first time to reach eighth place, having steadily climbed the league tables over the previous six years. We have also achieved twelfth position in the new combined league table from *The Times* and *The Sunday Times*, which shortlisted Surrey as one of five finalists for its University of the Year.

Recent changes in higher education, such as the rise in tuition fees, have made this a challenging time for many universities. Over five years, applications have increased by 31 per cent, outpacing the national average by a factor of ten and leading to a rise in the calibre of our students. A third of our undergraduate intake population for 2012/13 had grades AAB or above. Increasing demand for places has come from home and overseas; in 2012/13 our student body included 3,206 overseas students (non-EU) from over 129 nations.

This upward trajectory has been fuelled by a combination of improved teaching, learning environments, assessment and feedback and student satisfaction, paralleled by the University's passionate commitment to driving world-leading research.

Founded over 120 years ago and granted university status in 1966, Surrey is at the forefront of vital research, breaking new ground and impacting economies and communities across the globe in fields such as sustainable energy, telecommunications, space, disease control and health, as many of the research stories in this Annual Review will illustrate. We host major national facilities such as the Ion Beam Centre and the Surrey Space Centre – an international centre of excellence in space engineering – and the planned 5G Innovation Centre will spearhead global research in mobile communications. ➤



## ► Fuelled by innovation & a passion for learning (continued)

Surrey has established an international profile in both the media and in academia. Our international academic profile is reflected through our association with the Organisation for the Prohibition of Chemical Weapons (OPCW) with members of the Department of Chemical Engineering supporting the OPCW's Associate Programme educating representatives from over 100 countries in basic chemical engineering, teamwork and leadership skills. Surrey was delighted that the OPCW was awarded the Nobel Peace Prize in 2013. Many of our academics have won prestigious awards - including Professor Adrian Hilton, Director of Surrey's Centre for Vision, Speech and Signal Processing (CVSSP), and Professor Derk-Jan Dijk, Director of the Surrey Sleep Research Centre, who have both won Royal Society Wolfson Research Merit Awards. This award recognises academics of 'outstanding achievement and potential', and was awarded to Professor Hilton for his research into 4D computer vision modelling, and to Professor Dijk for research which revealed that a lack of sleep can affect the activity patterns of more than 700 genes.

We continue to meet the demands of an ever-changing world through evolving the courses we offer too. Our latest new programmes include a degree in Liberal Arts and Sciences. We are also introducing a new degree programme in Sports and Exercise Sciences complemented by the state-of-the-art facilities at Surrey Sports Park (the University's £36m sports centre), whilst 2014 will see the opening of a £40m School of Veterinary Medicine.

Whilst the University is especially renowned for science and engineering, it is also recognised for its strength across a diverse range of other subject areas, including drama and music. Ten of our subjects have achieved UK top ten rankings in the *Guardian's* latest subject league tables, with Hospitality and Tourism occupying the number one position for the fifth consecutive year.

Surrey moved up to ninth place in the country for student satisfaction in the National Student Survey, with the latest figures reporting 92 per cent satisfaction. 76.9 per cent of students gained good degrees (a first class or an upper second class award) in 2012/13, as our students achieve their potential in an innovative and inspirational learning environment. Following a significant investment in our infrastructure and facilities, the new library building and Virtual Learning Environment (VLE) represent the epitome of what students both need and want to successfully support them during their academic journey. »

## ► Fuelled by innovation & a passion for learning (continued)

One of the University's key assets in attracting students is our world-class and highly respected Professional Training placement programme, offering every Surrey undergraduate the opportunity to gain invaluable professional experience as a central part of their degree programme. We believe that this has a strong bearing on students' future employability and underpins Surrey's outstanding graduate employment record over the last five years.

We also have an excellent track record in enterprise. Surrey Satellite Technology (SSTL) is now the world leader in building and operating small satellites, controlling 40 per cent of the global market. Supporting the practical application of science, technology and engineering in the commercial world, the University owns and runs Surrey Research Park – a 70-acre facility hosting 110\* high-tech companies. An economic impact study of the University conducted in autumn 2013 by BiGGAR Economics found that, in 2012/13, the University and the Surrey Research Park generated around £1.4 billion Gross Value Added for the UK economy and directly or indirectly supported around 16,000 jobs. The study also found that the University generates an estimated £6.45 economic impact for every £1 income spent.

In May, the Kent, Surrey and Sussex Academic Health Science Network (AHSN), in which Surrey is a leading partner, received formal designation from NHS England. The AHSN will encourage greater collaboration between academic institutions including the University of Surrey, the NHS and industry to boost research and innovation in healthcare. In October, the University, the Royal Surrey County Hospital and Ashford and St Peter's Hospital launched a new Clinical Academic Collaboration, a formal partnership to foster stronger links in research and teaching within health and medicine across these key Surrey institutions.

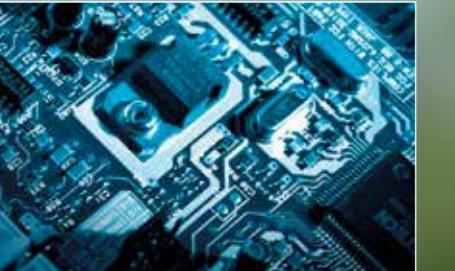
We have maintained our commitment to environmental sustainability too, with the University recently being awarded an EcoCampus Silver certification. We received a First Class Award in the People and Planet Green League 2013 – the UK's only comprehensive and independent green ranking of universities. Following the hard work that went into gaining the Food for Life accreditation on campus, our Sustainability team has also been awarded full marks in the 'Sustainable Food' category.

This Annual Review celebrates the recent successes of the University, our staff and our students, as well as Surrey's wider impact across diverse fields, both nationally and globally. At a challenging time for higher education, the University continues to build on firm foundations, a thirst for innovation and excellence, and a sense of wonder about the world we live in. We look forward to sharing an exciting future which promises to deliver many further achievements. To find out more about the latest news and developments at the University, visit [surrey.ac.uk](http://surrey.ac.uk).

\* Around 140 companies operate from the park because some of the companies on site have a number of registered and active subsidiaries.



# ► Landmarks of 2013



## ► Queen awards Regius professorship to Surrey

The UK government announced that Electronic Engineering is among twelve outstanding university departments to have the prestigious title of Regius professor bestowed upon it by the Queen to mark the Diamond Jubilee.



## ► £40m School of Veterinary Medicine

Plans to create a £40m centre for veterinary education and research at the University were given the green light by local planners at the end of November 2013. The new buildings are scheduled to open in autumn 2015.



## ► Tourism Society Award

Surrey has become the first University to receive the prestigious Tourism Society Award for contribution to the tourism industry. Previous recipients of the Award include Her Majesty the Queen, the London 2012 Olympics bid team and the National Trust.

## ► 8th in the *Guardian*

Surrey hit top ten in the *Guardian*'s new league table when it was ranked in the number eight position. The School of Hospitality and Tourism was given top billing for the fifth time in a row.

**8<sup>th</sup> BEST UNIVERSITY IN THE UK**  
GUARDIAN LEAGUE TABLE 2014



## ► President of Universities UK

The Vice-Chancellor, Professor Sir Christopher Snowden, took up his new role as President of Universities UK, the representative organisation for UK Universities.



## ► BP Centre for Petroleum and Surface Chemistry opens

Enhancing Surrey's reputation as a global scientific hub, August saw the official opening of the University's BP-sponsored Centre for Petroleum and Surface Chemistry (BP-CPSC).

**12<sup>th</sup> THE TIMES/SUNDAY TIMES GOOD UNIVERSITY LEAGUE TABLE**



## ► 12th in *The Times / Sunday Times*

The University achieved twelfth place ranking in the new joint *Times/Sunday Times Good University* league table.

## ► Record attendance at Open Days

In 2013, the University enjoyed record level of attendance across five Open Days totalling 9,226 attendees compared with 6,845 in 2012.

## ► 5G Closer to reality

A consortium of key global players in telecommunications formally joined Surrey to develop the 5G Innovation Centre pledging support worth over £30 million. The world's first research centre dedicated to mobile technology, the 5G Innovation Centre, will focus on the advanced technologies that will underpin the 5G network of the future.



Professor Hardev Pandha,  
Professor of Medical Oncology

# » Breakthrough in the battle with cancer

A simple urine test that could save the lives of thousands of men with prostate cancer could soon be available worldwide, thanks to scientists from the University of Surrey.

“Active monitoring avoids the morbidity and cost of invasive treatment, so is hugely desirable both for the patient and the NHS.”

**Professor Hardev Pandha**  
Professor of  
Medical Oncology

The test offers a major leap forward in the early detection of the disease, which kills around 11,000 men in the UK every year. It involves screening a sample of urine for the protein Engrailed-2 (EN2) which is produced by prostate cancers and shed into urine.

Two years of trials in both Europe and the United States have found the EN2 biomarker test is twice as effective as the 30-year-old PSA blood test currently used to detect prostate cancer.

The University of Surrey has now signed a worldwide non-exclusive agreement with international diagnostic specialist Zeus Scientific to develop and market the test. It is hoped the test – which could be developed into a stick test, like a pregnancy reading – could be in use in GPs surgeries around the world within two years.

Earlier detection of prostate cancer will help save lives and enable doctors to better plan possible treatment. Hardev Pandha, Professor of Medical Oncology at Surrey, said, “Our trials have shown that levels of EN2 accurately reflect the amount of cancer in the patient’s prostate gland. Small prostate cancers do not require treatment and can be safely monitored; larger volume cancers need prompt treatment. The EN2 test allows the urologist to determine which option is best for the patient based on the volume of cancer present. Active monitoring avoids the morbidity and cost of invasive treatment, so is hugely desirable both for the patient and the NHS.”

The research that led to the development of the test was jointly funded by the University and the Surrey-based Prostate Project charity.

EN2 is a cancer-specific protein also made by bladder cancers and shed into urine where it can be detected. The Surrey team has developed a new test for bladder cancer that could reduce the need for invasive treatments such as cystoscopies (where a doctor passes a thin telescope into the bladder via the urethra). This would not only help to improve the quality of life of the 10,000 people diagnosed with the disease annually, but could save the NHS in excess of £100m a year.

In the future, Surrey’s research will focus on exploiting the fact that most common cancers make EN2 and display this protein on their surface. The team has developed prototype immune treatments targeting EN2 on cells. Early results suggest it may be possible to detect cancers making EN2 by using antibodies labelled with fluorescent dyes, utilising conventional imaging techniques. The team’s research has been published in high-profile journals including the *International Journal of Cancer*, *Clinical Cancer Research* and the *European Journal of Cancer*.

# › Smartphone in space

**It's official: your humble smartphone is so powerful it could conceivably control a spacecraft.**

The Google Nexus One has gone where no smartphone has gone before, as part of a mission launched by the University of Surrey Space Centre (SSC) in partnership with Surrey Satellite Technology Limited (SSTL). It follows on from the UK's first nanosatellite mission, SNAP-1 - which was also built by SSC and SSTL, 13 years ago - and is the first 'phonesat' to go into orbit, as well as the first UK CubeSat to be launched.

STRaND-1, a project developed by Surrey space engineers, launched from Sriharikota, India on 25 February 2013. The team plan to test the smartphone's ability to control the satellite's in-orbit operations.

The unique and innovative satellite, STRaND-1 (the Surrey Training, Research and Nanosatellite Demonstrator) is a 30cm CubeSat weighing 3.5kg. It launched into low Earth orbit (LEO) at an altitude of 785km on ISRO's rocket called the Polar Satellite Launch Vehicle (PSLV).

At the heart of STRaND-1 is a Google Nexus One smartphone with a modified Android operating system. Smartphones contain highly advanced and integrated technologies and incorporate several key features that are integral to a satellite, such as cameras, radio links, accelerometers and high performance computer processors – almost everything except the solar panels and propulsion.

The satellite has been operating from the Surrey Space Centre's ground station at the University for over six months, collecting data on the satellite's health (called telemetry). The project is being run by researchers and staff in their own time.

Being the first smartphone satellite in orbit is just one of many 'firsts' that STRaND-1 has achieved. It also flies innovative new technologies such as a 'WARP DRiVE' (Water Alcohol Resistojet Propulsion Deorbit Re-entry Velocity Experiment) and electric Pulsed Plasma Thrusters (PPTs): both 'firsts' to fly on any nanosatellite. It is also flying 3D printed parts – believed to be the first to fly in space. These new technologies will eventually form into future capabilities in UK space missions.

Dr Chris Bridges, Lecturer at SSC and STRaND-1 Lead Engineer on the project, said, "A smartphone on a satellite like this has never been launched before. The training and findings learnt during this mission will provide a wider knowledge about electronics for spacecraft and make this complex area more accessible to everyone."

STRaND-1 will use a number of experimental 'Apps' to collect data whilst a new high-speed Linux-based CubeSat computer developed by SSC takes care of the satellite. The STRaND-1 team plans to switch the satellite's in-orbit operations to the smartphone, testing the capabilities of a number of standard smartphone components for space environment.



Dr Chris Bridges

**"A smartphone on a satellite like this has never been launched before."**

**Dr Chris Bridges**

Lecturer at SSC and STRaND-1 Lead Engineer on the project



## » A step towards more sustainable tourism

European tourist destinations are increasingly recognising the importance of sustainability to their businesses. This awareness, however, hasn't always been matched by their ability to assess sustainability.

In an effort to address this, the European Commission asked the School of Hospitality and Tourism Management at the University of Surrey — in collaboration with Sustainable Travel International and The INTASAVE Partnership — to analyse the feasibility of the European Tourism Indicator System (ETIS), an innovative and easy-to-implement system created to monitor sustainability at tourism destinations.

The ETIS provides destination management organisations and stakeholders across Europe with a tested, approved and easy-to-use toolkit and system of indicators through which they can assess, monitor, manage and enhance their sustainability.

The School of Hospitality and Tourism Management boasts an enviable wealth of teaching and research expertise in sustainable tourism, led by Professor Graham Miller in his role as Head of School.

Professor Miller headed the Surrey team on the ETIS project and has subsequently been appointed as a 'Core Expert' by the European Commission to help guide the ongoing use of the system. As part of the Core Experts panel, which consists of ten sustainable tourism specialists chosen from across Europe on the basis of their professional skills and the added value of their expertise, Professor Miller will advise on the continued development and implementation of the ETIS.

Designed to be used without any specific training, the ETIS is adaptable to the needs of each particular destination. The system aims to improve the information available to tourism stakeholders and to add value to the European tourism experience as a whole.

Launched in Brussels to over 200 delegates (including members of the European Commission and tourism experts), the ETIS is a vital tool for the Commission in its goal to encourage more comprehensive, inclusive and sustainable ways of working.

“Ethiopia has an enormous maternal health problem and 85 per cent of the population live in very remote areas with few resources, so it’s a place with a huge amount of need.”

**Dr Karen Ballard**

Senior Lecturer in Women's Heath

## ► Saving lives in Africa

Many African women had never looked at themselves in a mirror, let alone seen their unborn baby via an ultrasound scan, before Dr Karen Ballard visited their local health centre.



Dr Karen Ballard  
Senior Lecturer  
in Women's Health

Driven by a lifelong ambition to work in a developing country, Dr Ballard, Senior Lecturer in Women's Heath, swapped University teaching for a year-long research project in rural Ethiopia, which has one of the worst maternal mortality rates in the developing world.

Her project investigated whether introducing ultrasound scan clinics into existing antenatal clinics would encourage more women at risk of a complicated delivery to seek appropriate, often life-saving, maternity care.

During her research, Dr Ballard saw first-hand the reality of working in health clinics which don't have running water or enough medication, and where power cuts often mean delivering babies by candle light. Used to these conditions, mothers-to-be were astonished by Dr Ballard's second-hand ultrasound machine, which allowed them to see their unborn babies for the first time.

The introduction of antenatal scanning saw clinic attendance rates rocket (from ten to 60 women per week) and enabled nurses to identify those at high risk of complications. Almost 90 per cent of these women then attended hospital to deliver their babies.

Dr Ballard, who travelled to Ethiopia with UK-based charity Maternity Worldwide, said: “Ethiopia has an enormous maternal health problem and 85 per cent of the population live in very remote areas with few resources, so it's a place with a huge amount of need.

“It was a great experience. A lot of people say to me: ‘Have you changed things?’ The answer is that you can't change big things out there, the systems are the way they are, but what you can do is to change the pathway for individuals you come across, you can change the life of a family, and you hope to inspire the nurses you meet and work with.”

Dr Ballard hopes to create links between Surrey and a university in Ethiopia. She recently returned to Ethiopia to undertake further research, and has been successful in raising funds to build a maternity waiting home near the hospital, so high-risk women can stay close by for two weeks before they deliver their babies.

Dr Ballard's research has been published in the *British Journal of Obstetrics and Gynaecology*, *The British Journal of General Practice* and profiled in *The Telegraph*.



# ► Unravelling 1,000-year-old DNA to unlock the secrets of leprosy

Molecular microbiologists from the Department of Microbial and Cellular Sciences have broken new ground to advance the understanding of one of history's most feared diseases.

Professor Graham Stewart, Dr Tom Mendum, Dr Huihai and Dr Mike Taylor worked in collaboration with a team of archaeologists from the University of Winchester to extract DNA from skeletal samples buried at the medieval St Mary Magdalen Hill leprosy hospital in Winchester.

The ancient DNA was so well-preserved that the team was able to reconstruct the entire genome of the ancient leprosy bacterium, shedding light on the history of the disfiguring disease – once endemic in Europe, but which largely disappeared during the Middle Ages. The team believes the waxy coat surrounding the leprosy bacterium may have protected the DNA from degradation.

Professor Stewart said, "Understanding diseases from the past will help us predict emerging infectious diseases and potentially suggest how we may be better able to control existing diseases. We hope to analyse even older DNA, tracing leprosy and also tuberculosis back to their origins in human history."

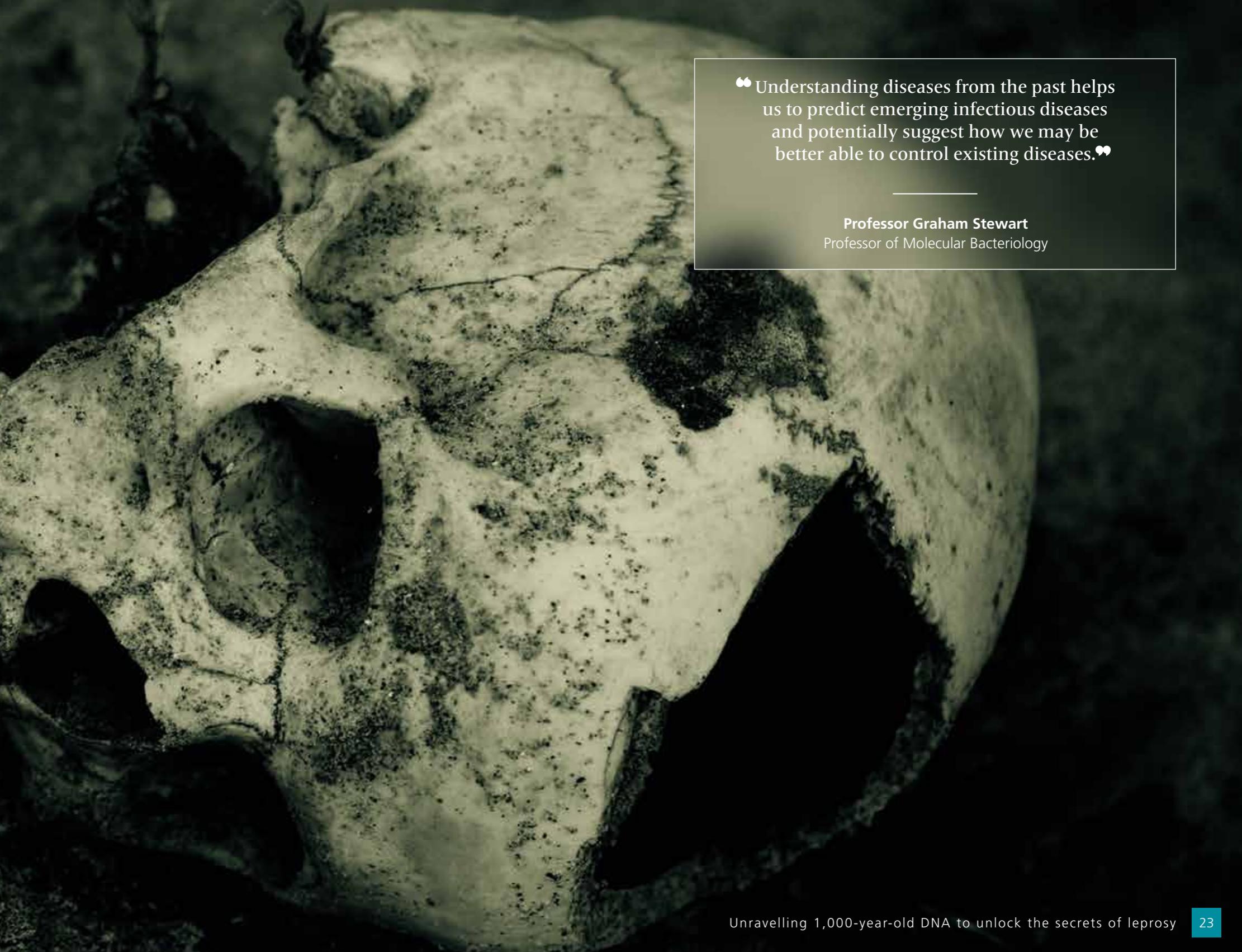
The team's research was published in the journal *Plos One* and in *Science* as part of an international project to reconstruct genome sequences of bacteria from five medieval skeletons excavated in Denmark, Sweden and the United Kingdom. This research involved comparing the ancient genomes with those of eleven modern strains of leprosy from around the world and revealed that leprosy in the Americas has a European origin and that particular leprosy strains now found exclusively in the Middle East were, at one time, also present in Europe.

Bioarchaeologist Dr Taylor added, "The excavations at St. Mary Magdalen, Winchester and other European sites bring us literally face-to-face with the effects the disease had on susceptible people, almost a millennium before the advent of antibiotics."

Future work at Surrey will include combining analysis of the ancient pathogens with the genetics of their human host populations to provide a better understanding of infectious diseases.

“Understanding diseases from the past helps us to predict emerging infectious diseases and potentially suggest how we may be better able to control existing diseases.”

**Professor Graham Stewart**  
Professor of Molecular Bacteriology





Iodine deficiency can have an adverse effect on developing babies' brains

## ► The impact of inadequate iodine



Dr Sarah Bath  
Postdoctoral Research Fellow, Department of Nutritional Sciences

It's a vital nutrient, essential for producing the hormones made by the thyroid gland and the development of babies' brains during early years, yet most people are unaware of the importance of iodine – and the impact deficiency could have on future generations.

Research by Professor Margaret Rayman and Dr Sarah Bath from the Department of Nutritional Sciences, published in *The Lancet*, has revealed that iodine deficiency during pregnancy may have an adverse effect on children's mental development.

The research was conducted in collaboration with Bristol University and the Avon Longitudinal Study of Parents and Children — a long-term study of more than 14,000 mothers and their families which started in the early 90s. This focused on a group of around 1,000 mothers with mild-to-moderate iodine deficiency during pregnancy and the measure of intelligence quotient (IQ) of their children aged eight. It found that children of women with insufficient levels of iodine (an iodine-creatinine ratio of less than 150 µg/g) were more likely to have scores in the lowest quartile for verbal IQ, reading accuracy and reading comprehension than those of mothers with sufficient levels of iodine (ratios of 150 µg/g or more).

The results raise concerns that the iodine status of pregnant women is a public-health issue that needs to be addressed. The research attracted international interest and was covered by the BBC, ITV, *The Independent* and *The Telegraph*.

Dr Bath, who completed her undergraduate degree in Nutrition and Dietetics at the University of Surrey, was recently awarded a three-year MRC Population Health Scientist Fellowship that will allow her to continue to study iodine nutrition in the UK. Her previous work has included the important discovery that the iodine concentration of organic milk – often favoured by pregnant women – is lower than that of conventional milk. Future projects include looking at ways of assessing pregnant women for iodine deficiency and studying the iodine status of school-age children.

Dr Bath said, "I trained as a dietitian, so have an interest in translating the information that we get from research into practical, relevant information that pregnant women and the public can use. At the moment, when you're pregnant you get no guidance on iodine, yet that's the main area of risk and where most problems arise if you're deficient. The hope is that this might change and people might get more information on iodine, as well as the other nutrients needed during pregnancy."

# ► Supportive alumni fund student scholarships

The generosity of the University of Surrey's alumni plays a vital role in keeping our programmes accessible to students from all backgrounds.

A number of scholarships have been generously donated by our alumni who wish to continue their relationship with the University, offering the next generation of students the chance to fulfil their potential and make a real impact in the world. Here are some examples of how students are supported:



## ► The Jim O'Neill Scholarship

Jim O'Neill, former Chairman of Goldman Sachs Asset Management, is funding a scholarship for economics students at the University.

Mr O'Neill, who studied for his PhD at Surrey, has launched the Jim O'Neill Scholarship for students who achieve AAA at A-level and whose family income is £30,000 or below.

Hailed as one of the world's top foreign-exchange economists, Mr O'Neill is also renowned for coining the term 'BRIC' in his seminal 2001 paper, The World Needs Better Economic BRICs, which set out the emergence of Brazil, Russia, India and China as rapidly developing countries that have come to symbolise a shift in global economic power.



## ► The Robert Earl Scholarship Fund

Robert Earl, owner of the Planet Hollywood chain and Earl of Sandwich restaurant franchises, has set up a scholarship fund at the University.

Offered to undergraduates in the School of Hospitality and Tourism Management, the Robert Earl Scholarship Fund will help UK/EU students in the School undertake international exchanges or Professional Training placements in an overseas organisation.

After graduating from Surrey with an honours degree in Hotel and Catering Management, Mr Earl started the first Planet Hollywood restaurant in New York in 1991. Robert's background also includes five years as CEO of Hard Rock Café and a directorship of Pelican Group PLC.



## ► Braithwaite Family Foundation

Through the Braithwaite Family Foundation Chris, Lynette and their two sons have offered three scholarships: a PhD in Civil Engineering and two MScs in Medical Physics.

Chris Braithwaite, a Civil Engineering graduate, said, "We have had a very positive connection with Surrey and have been impressed by the professionalism and friendliness of the staff."

Recipient of the scholarship for the Physics MSc, Nick Henthorn, who completed the course in September 2013, said, "I am very appreciative of the Braithwaites for their generous support through The Braithwaite Family Foundation." Nick is now studying for a PhD with plans to pursue an academic career.

“The scholarship is going to be a big help with my studies, allowing me to buy more resources for my course and enable me to travel abroad. It has opened up more opportunities for me.”

**Rachel Wright**

Scholarship Student, German & Translation

## ► The David Ebsworth Scholarship

David Ebsworth, CEO of Galenica and Vifor Pharma, has provided two scholarships - a £3,000 grant per year for four years. One was awarded in 2013 and the second will start in 2017. David has also funded two further awards - the prize for Best Performance in the Professional Training year, and the David Ebsworth Student Opportunities Fund. The former rewards those students who receive high marks during their placement year; the latter gives students the chance to take a German course in Germany to boost their language skills.

David has also taken on two students for their Professional Training year at his company Vifor Pharma, part of the Galenica Group.

David gained a BSc in Chemistry and German in 1976, followed by a PhD in Comparative Industrial Relations, and wanted to support the teaching of German at the University.

David Ebsworth (centre) met his scholarship student, Rachel Wright, when he visited the University in October.





Dr Gregory Tate, Lecturer in English Literature

## ► Surrey's BBC New Generation Thinker

Arts and science are traditionally regarded as separate lines of intellectual pursuit, with exponents prone to disagreement over which is more important.

“I’m very excited to be given this fantastic opportunity to discuss my research with a national audience.”

**Dr Gregory Tate**  
Lecturer in  
English Literature

In his work, Dr Gregory Tate looks at how literature and literary figures engage with science, especially in the 19th century. This era for English literature was also the time when people began to place reason and emotion at opposite ends of the spectrum in understanding the world and human nature. Scientific advances led many to believe that a perfect society was possible, counterbalanced by the rise of romanticism and its hostility to technology and urbanisation. Some literary figures of the time were enthusiastic defenders of science, while others thought it an inferior form of learning.

In tracing the development of this relationship through the 19th century, Dr Tate is addressing issues that remain relevant today. In recognition of this work, BBC Radio 3 and the Arts and Humanities Research Council (AHRC) named him one of their New Generation Thinkers for 2013.

Dr Tate is working with the BBC to develop programme ideas for Radio 3, as well as appearing

in regular New Generation Thinkers slots on programmes such as Night Waves, the Verb, the Essay and the Sunday Feature.

Dr Tate said of the announcement, “I’m very excited to be given this fantastic opportunity to discuss my research with a national audience. It’s a wonderful chance to share my love of literature, and to let the BBC’s listeners know about my research area: the relationship between literature and science in the 19th century.”

The ten New Generation Thinkers 2013 were selected from 60 candidates after a challenging series of written presentations and all-day workshops, with the final decision made by senior staff from BBC Radio 3, BBC Television Arts and the AHRC. Dr Tate’s fellow New Generation Thinkers – who research a range of topics related to the arts and humanities – hold positions at Oxford, Cambridge, Edinburgh, King’s College London, York, St. Andrew’s, Queen Mary, Liverpool and Birmingham.



“By combining our expertise in sleep and genomics we are starting to make breakthroughs that will have an impact on our understanding and treatment of poor health arising from insufficient sleep.”

**Professor Derk-Jan Dijk**

Director of the Surrey Sleep Research Centre

## ➤ How lack of sleep can harm your health

Researchers from the University of Surrey have found that as little as one week of inadequate sleep is enough to alter the internal workings of the human body.

The team from the Surrey Sleep Research Centre used a variety of tests to monitor 26 people after they had had a week of plenty of sleep (up to ten hours per night), and after a week of fewer than six hours' snoozing.

The results, published in the journal *Proceedings of the National Academy of Sciences (PNAS)*, revealed that a lack of sleep affects the activity of more than 700 genes, including those that govern the immune system, the body's response to stress and our natural body clock.

Sleep deficiency can lead to a host of health conditions including obesity, heart disease and cognitive impairment.

Professor Derk-Jan Dijk, Director of the Sleep Research Centre at the University of Surrey and a Royal Society Wolfson Merit Research Award holder, said, “This research has helped us to understand the effects of insufficient sleep on gene expression. Now that we have identified these effects we can use this information to further investigate the links between gene expression and overall health.”

Colin Smith, Professor of Functional Genomics at the University of Surrey, added, “The current interest in sleep and circadian rhythms as determinants of health and disease is a vital area of research. By combining our expertise in sleep and ‘genomics’ (the study of the full complement of our genes), we are starting to make breakthroughs that will have an impact on our understanding and treatment of poor health arising from insufficient sleep.”

Surrey's sleep research was recently the focus of the first episode of new BBC TV series *Trust Me I'm a Doctor*. Filmed at the Surrey Sleep Research Centre, the programme revealed that when a small group of volunteers reduced their sleep from seven-and-a-half to six-and-a-half hours a night, genes associated with processes like inflammation, immune response and response to stress became more active. The activity of genes associated with heart disease, diabetes and risk of cancer also increased. The reverse happened when the volunteers slept for an extra hour.

# › The direction of thought

Does language influence thought? It's a complex topic, but insight may come by examining answers to an unlikely question: in which direction does time travel?

This abstract question is of great interest in a range of academic fields, because there is no correct answer and your response may depend on which language you speak.

Whichever way English speakers happen to be facing, they tend to represent time as travelling from their left to their right, and to see the future ahead and the past behind. However, research by Dr Sebastian Fedden of the Surrey Morphology Group suggests that the Mianmin people of Papua New Guinea align the flow of time with the course of their local rivers.

As the Mian language also physically locates objects by indicating whether they are upriver or downriver of the speaker (rather than in terms of left and right or by compass points), Dr Fedden's work (which was carried out in collaboration with Professor Lera Boroditsky of Stanford University) suggests that this linguistic quirk may have been adopted into the way its speakers think about time, or even have helped to shape it.

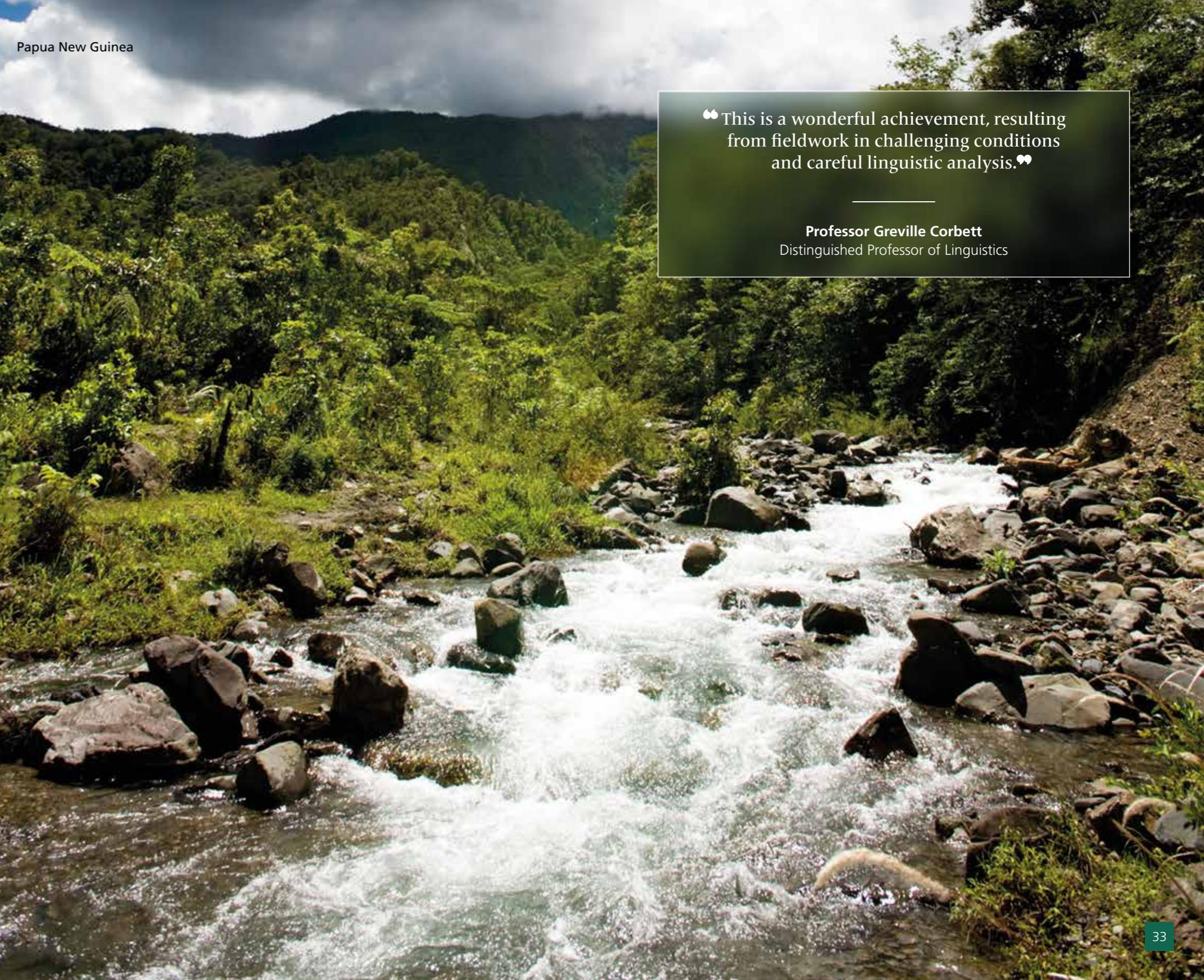
Is this an unusual case of people's thought being shaped by their environment? Not according to Dr Fedden and Professor Boroditsky. They contend that the use of left to right terms by English speakers is just as influential on thought processes, and possibly more bizarre than Mian's upriver-downriver scheme.

In 2013 Dr Fedden's research on the Mian language was recognised by the Association for Linguistic Typology with the presentation of their Georg von der Gabelentz Award for his reference work *A Grammar of Mian*.

"This is a wonderful achievement, resulting from fieldwork in challenging conditions and careful linguistic analysis," said Greville Corbett, Distinguished Professor of Linguistics at the University of Surrey. "The Gabelentz Award is the most significant honour in the field of linguistic typology for the author of a published grammar."

The award committee was impressed with not only the excellence of the descriptive grammar and its typological sophistication, but also with the way it engages with areal and historical issues, and with the rich text and vocabulary sections and substantial index. Dr Fedden is now engaged on a new Surrey Morphology Group project (funded by the Arts and Humanities Research Council) involving multiple systems of categorisation, in which Mian will have central place.

Papua New Guinea



“This is a wonderful achievement, resulting from fieldwork in challenging conditions and careful linguistic analysis.”

**Professor Greville Corbett**

Distinguished Professor of Linguistics

# » Surrey research fuels launch of cancer detection aid

Lives could be saved with technology developed at Surrey to detect cancers and other health conditions.

“Oral cancer is the sixth most common cancer in the world for which there is no cheap early stage diagnostic approach. It is the most common cancer in India. With the 3DEP, we are now making real progress.”

## Professor Michael Hughes

Professor of Biomedical Engineering

A novel instrument has been launched commercially, designed to aid the early detection of cancers, develop new drugs and therapies. Over the last eleven years, a team of researchers at the Centre for Biomedical Engineering at Surrey have been working on developing a product to measure the electrophysiological properties of cells.

The researchers use a technique known as dielectrophoresis (DEP) which analyses the electrical properties of cells. The transition of a cell from a healthy to a diseased state is associated with a change in its electrical properties. The 3DEP system consists of a benchtop instrument and an inexpensive, disposable chip that together analyse cells to determine their electrical properties. Cells are placed in the 3DEP chip scanned to differentiate between normal and cancerous ones.

Patents were applied for in 2003 and 2005 (one now granted) and a company (DEPtech) was set up in 2007 to commercialise them. In November 2013, the device was formally launched at the AES Electrophoresis Society in San Francisco and is now available at [www.deptech.com](http://www.deptech.com) and through the distributor, Labtech [www.labtech.co.uk](http://www.labtech.co.uk). The project has so far generated over £1 million in research income and the University has a royalty agreement which has resulted in some revenue.

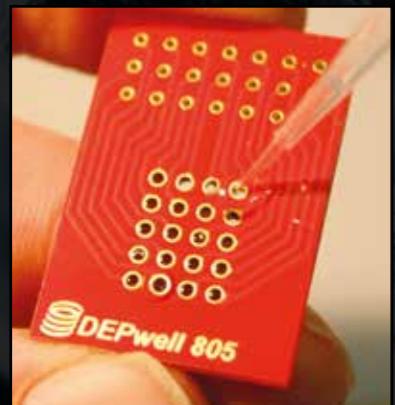
The core development team comprises Professor of Biomedical Engineering, Michael Hughes, with

Dr Kai Hoettges, developing the technology and senior lecturer, Dr Fatima Labeed, leading applications development.

Professor Hughes explains his motivation behind developing the 3DEP invention. He said, “Ten years ago, I decided I wanted to get this invention to the market. Platform technology is an overused phrase, but this device can enable a wide range of important research.”

Professor Hughes pointed out that the applications of the 3DEP device are diverse - ranging from oral cancer to stem cell research and drug screening. He said, “We are currently involved in clinical trials to use the device to detect oral cancer in conjunction with the Eastman Dental Institute, the Royal Marsden and Bradford Royal Infirmary. Oral cancer is the sixth most common cancer in the world for which there is no cheap early stage diagnostic approach. It is the most common cancer in India. With the 3DEP, we are now making real progress.”

Professor Hughes added, “We are also working with colleagues at the University of California to identify stem cells that can be used to repair damage in the brain, which could potentially offer solutions to chronic neurological conditions such as Alzheimer’s, Parkinson’s disease and spinal cord injury. We are working with collaborators in FHMS to study muscle and nerve electrophysiology and red blood cell chronobiology.”



3DEP Chip



L to R: Professor Michael Hughes,  
Dr Fatima Labeed and  
Dr Kai Hoettges



## » Art in the palm of your hand

A new mobile app, designed by academics at the University of Surrey, will radically change the way visitors interact with museums and gallery spaces.

The app, which enhances the visitor experience through additional 'augmented reality' content, delivers a mixture of audio and visual material to tablets and smartphones. Visitors will be able to receive additional information on identified paintings or social history objects in order to gain an insight into the archive behind them – including oral histories, film, photographs and maps.

The technology also recognises where visitors are as they move around an exhibition space, offering an innovative way for curators and owners of smaller galleries and exhibitions to track how visitors are interacting with the space.

Through research funding from the Engineering and Physical Sciences Research Council (EPSRC), the technology has been developed by Dr Helen Treharne, Dr Chris Culnane and Dr Matthew Casey from the Department of Computing, in conjunction with Dr Caroline Scarles from the School of Hospitality and Tourism Management at the University of Surrey.

"The app brings together two increasingly important technologies: augmented reality and indoor localisation," explained Dr Casey. "The innovation is how these two aspects are combined to provide relevant content to visitors while also helping galleries understand how their exhibits are viewed. The technology is also cost-effective, since it relies upon the visitors' own mobile device with localisation achieved using existing or low-cost Wi-Fi routers within the gallery."

Successful trials of the technology have been undertaken at two prestigious galleries in the Surrey area – The Lightbox in Woking and Watts Gallery in Compton, where the official launch of the project 'Beyond the Visual: Augmented Reality in Spaces of Exhibition' took place in September 2013.

Following the success of the technology trials, the project team has been awarded funding to commercialise the app. The University – in partnership with Pervasive Intelligence Ltd – will launch visit-ar.org in June 2014, with support from Watts Gallery, The Lightbox and Visit Surrey.



Professor Spencer Taylor, Director of the Centre for Petroleum and Surface Chemistry

## ► BP centre leads research into heavy oil recovery

The BP-sponsored Centre for Petroleum and Surface Chemistry was officially opened at the University of Surrey in August 2013.

“The Centre is a research facility that has been generously sponsored by BP America which has agreed to provide funding for an initial five-year research programme to study viscous crude oils.”

**Professor Spencer Taylor**  
Director of the  
Centre for Petroleum  
and Surface Chemistry

The event included naming the Centre's laboratory after Dr Albert Ernest (A.E.) Dunstan, a notable British petroleum chemist who founded the Research Station at Sunbury-on-Thames in 1917 for the Anglo-Persian Oil Company, the forerunner of BP. He went on to become the Chief Chemist of Anglo-Persian (later Anglo-Iranian), and also President of the Institute of Petroleum.

Chris West, Vice President of the Heavy Oil Flagship in BP, performed the ribbon cutting ceremony in the presence of Professor Sir Christopher Snowden, President and Vice-Chancellor of the University of Surrey and other guests, including David Dunstan, A. E.'s grandson, who is a Physics professor at Queen Mary College, London.

Professor Jonathan Seville, Dean of the Faculty of Engineering and Physical Sciences, welcomed guests to the University, the Faculty and the Department of Chemistry, where the Centre resides. Professor Spencer Taylor, Director of the BP-CPSC, then gave a brief account of how the Centre came into being, and his Chemistry background including his time as a student at Surrey (BSc and PhD), prior to researching crude oil, colloid and surface chemistry in BP, the latter combined with a visiting lectureship at Surrey.

During his speech, Professor Taylor described the research being undertaken by the Centre, which focuses on heavy oil recovery, before the guests were shown around the facilities by the Centre's staff and students where more details of the research and BP context were presented.

Professor Taylor told the audience, “The Centre is a research facility that has been generously sponsored by BP America which has agreed to provide funding for an initial five-year research programme to study viscous crude oils – especially, improved ways to recover them – for example, from the vast oil sand resources located in Canada, as well as elsewhere in the world. We are mindful of the need to minimise the cost to the environment, and this is our main research motivation.”

Chris West, Vice President of the Heavy Oil Flagship in BP, added, “We need the expertise of the staff at the Centre to help us develop ways to make heavy oil recovery more efficient. More efficient recovery means less energy cost for every barrel of oil produced and fewer greenhouse gas emissions, all of which is good business for BP.”

# ► Power behind brands

New research suggests that the marketing power of branded cigarette boxes is a good advertisement for compulsory plain packaging.

In November 2013, the government announced an independent review of cigarette box packaging in England, amid calls to discourage young people from smoking.

Professor Jane Ogden in the School of Psychology welcomed news of the review in light of findings from her research into cigarette box branding. The review, led by paediatrician, Sir Cyril Chantler, will consider evidence, including Professor Ogden's study, and report back to government in March.

Professor Ogden said, "At last, the government has decided to conduct a review into plain packaging for cigarette boxes. The tobacco industry will not like it if plain packaging is introduced, but it is yet another step towards reducing smoking related morbidity. Plain packaging might help current smokers stop, but more likely it will reduce the number of young people starting which is great news for our future generations."

The research (published in the *Journal of Health Psychology* by Michaela Dewe, Professor Ogden and Dr Adrian Coyle) explored changes in UK cigarette advertising since 1950 and the strategies used by tobacco companies to promote their products, with a focus on the use of the box and the meanings associated with smoking. From an archive of 1,500 tobacco advertisements, the study randomly selected 40 UK print advertisements for each decade from the 1950s to the 2000s. The selected advertisements were then analysed for different aspects and trends in content and meaning.

The study suggests that tobacco companies gradually built an emphasis on branded packaging (instead of cigarettes themselves) to signify quality, and that this 'transfer of meaning' was complete before advertising was banned in 2003. Results also showed that the cigarette box has become iconic to each manufacturer and remains a vehicle for advertising and an object through which smokers express their identity; without realising it, smokers have become walking adverts for the brand they smoke.

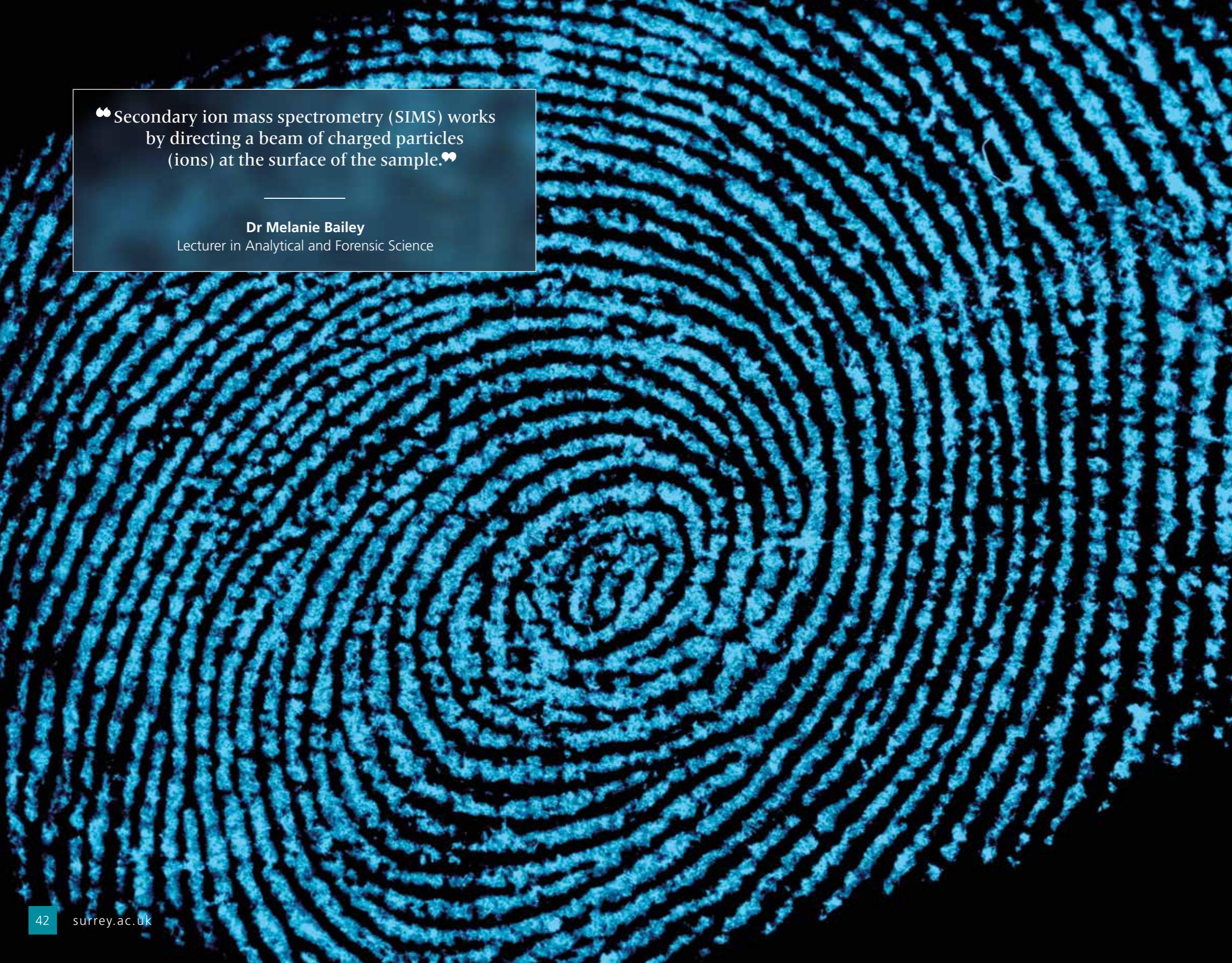
Professor Ogden added, "The results indicate that tobacco companies shifted their emphasis onto the box just prior to the ban on advertising. The box therefore absorbed all the meanings of their brand making it a mobile and ongoing source of marketing once all the outlets had been removed. Plain packaging would enable this last form of advertising to be removed and could help to add to the gradual reduction in smoking initiation and maintenance."

Approximately 100,000 people die of a smoking-related illness every year in the UK. Australia became the first country to ban all branding on cigarette packets in 2012. Health campaigners are urging the government to introduce plain packaging as soon as possible. The tobacco companies claim that branded packaging does not promote smoking.



“Plain packaging might help current smokers stop, but more likely it will reduce the number of young people starting which is great news for our future generations.”

**Professor Jane Ogden**  
Professor in Health Psychology



“Secondary ion mass spectrometry (SIMS) works by directing a beam of charged particles (ions) at the surface of the sample.”

**Dr Melanie Bailey**

Lecturer in Analytical and Forensic Science

## ► Fingerprint techniques create global interest

Research by Dr Melanie Bailey from the Department of Chemistry has provided a new method for revealing fingerprints that cannot be developed by conventional means, in collaboration with the Home Office, the Israeli Police and the Netherlands Forensic Institute.

Dr Bailey's work, published in the journal *Analyst*, was funded by the EPSRC Pathways to Impact project. A latent fingerprint is invisible to the naked eye and requires some chemical development so that the ridge detail can be used to identify a suspect. In certain cases, the recovery rate of fingerprints is low due to either the type of surface the fingerprint is deposited on, the age of the fingerprint or if the fingerprint has been exposed to certain environmental conditions.

Having obtained her PhD in Electrical Engineering from the University of Surrey Ion Beam Centre, Dr Bailey has shown that a technique called secondary ion mass spectrometry (SIMS) can reveal ridge detail in fingerprints that cannot be developed using conventional developers.

Dr Bailey said, “Secondary ion mass spectrometry works by directing a beam of charged particles (ions) at the surface of the sample. This causes molecules to leave the surface, which are detected in a mass spectrometer. Because the ion beam can be focused to a small spot size (less than the thickness of a human hair) it can be scanned across a sample to generate a molecular image of that sample.”

The study, led by Dr Bailey, focused on three examples: in the first case, fingerprints were deposited on aluminium foil by the Netherlands Forensic Institute until the fingerprint became faint. The fingerprint was developed using superglue (cyanoacrylate) but the fingerprint ridges were interrupted by undeveloped areas, making identification of this fingerprint difficult. The fingerprint was scanned using SIMS, which revealed the ridge detail in the gaps, where the cyanoacrylate had failed.

In the second example, the Israeli police deposited fingerprints on the handle of a hand grenade. It was possible to develop fingerprints up to 24 hours after deposition, but after this, development of a fingerprint proved impossible. Fingerprints on a hand grenade handle supplied by the Israeli Police were scanned using SIMS, and the fingerprint ridge detail was still visible 48 hours.

In the third example, fingerprints were buried in soil. The Home Office tried its conventional techniques but failed to produce any ridge detail of the fingerprint. However, SIMS was able to reveal the ridge detail.

# ► Flying high in Hospitality & Tourism

The School of Hospitality and Tourism Management, ranked number one in the UK by the *Guardian University Guide* and *The Times/The Sunday Times Good University Guide*, continues to enjoy huge success.

“This has been a fantastic year of achievement for the school across teaching, research and impact on the world.”

**Professor Graham Miller**  
Head of the School of Hospitality and Tourism Management

In 2013, the School was awarded top ranking for student satisfaction in the National Student Survey (NSS) after being ranked number one for Hospitality and Tourism by the *Guardian University Guide* for the fifth year in a row.

A highlight of the year was being awarded the Tourism Society Award for contribution to the tourism industry, presented at the House of Commons. For the first time ever, recruitment of undergraduate first year students exceeded 200, with the highest ever level of entry tariff.

Head of the School of Hospitality and Tourism Management, Professor Graham Miller, said, “Tourism is central to many of the challenges facing society; sustainability, economic prosperity, migration and fairness. Surrey is central to global tourism. As such, we are playing an important role in addressing the challenges of both the industry and society more broadly.”

According to Professor Miller, 2012/13 was the most successful year for research grants in the School’s 40-year history. A €200k European Commission grant was awarded to develop the European Tourism Indicator System. A €250k European Commission grant was awarded to study demand patterns for accessible tourism across Europe, with research undertaken by Professor Miller, Dr Gang Li,

Dr Victoria Eichhorn and Dr Jason Chen. A £250k grant from the Economic and Social Research Council (ESRC) was awarded to study labour productivity at UK hotel chains, with research being conducted by Professor Allan Williams, Professor Andrew Lockwood and Dr Sangwon Park.

Dr Caroline Scarles’s work on augmented reality for visitor attractions, in collaboration with the Department of Computing, funded by the Engineering and Physical Sciences Research Council, (EPSRC) has proven successful with immediate industry relevance.

The MSc in Sustainable Tourism, run in association with Explore Worldwide and delivered with the Centre for Environmental Studies, contributed to the department being shortlisted for the 2013 Green Gown awards. Explore Worldwide won the Association of Independent Tour Operators (AITO) award for the year’s most innovative development in tourism through this programme.

In September 2013, the School opened the Lakeside Coffee Shop on campus, staffed by International Hospitality Management students.

Professor Miller added, “This has been a fantastic year of achievement for the school across teaching, research and impact on the world.”

Treasury in Petra, Jordan





Dr Alison Cottell,  
tutor in microbiology, with students

“We will continue to do all we can to ensure the experience of being a student at Surrey remains excellent.”

**Professor Gill Nicholls**

Vice-President and Deputy Vice-Chancellor Academic Affairs

## ► Teaching & learning success

Surrey offers a unique opportunity to study and collaborate with inspiring academics on a campus offering excellent facilities.

In 2012/13, our students enjoyed a high level of academic success – 2,915 students achieved an undergraduate qualification while 2,458 students received a postgraduate qualification. Our graduates and postgraduates can be found making a real difference across the world.

The University fosters an atmosphere where originality is recognised and encouraged. Studying at Surrey involves more than interrogating knowledge; it's about developing the tools to engage with concepts, questions and their evaluation.

The academic community at Surrey is aware that to be successful in a complex global environment, students need to understand knowledge from different viewpoints. The learning environment encourages students to look beyond their own subject area and develop skills that are crucial, whether they remain in academia, take up a research role or work within a business.

Global complexity challenges our students so within the student's learning and teaching environment every opportunity is provided to explore issues in collaboration with a diverse, international academic community - sharing ideas and learning from each other. »



## ► Students give Surrey a big yes in the NSS

In 2013, Surrey moved up to ninth place in the country for student satisfaction, with 92 per cent of students who took the survey expressing satisfaction with the quality of their course. This was the third successive year in which Surrey's student satisfaction levels have increased. The survey response rate also rose to 79.9 per cent: students welcomed the opportunity to tell the world how much they value their academic and social experience at Surrey.

The University improved on its previous year's performance in all seven categories evaluated by the survey: Teaching, Academic Support, Assessment and Feedback, Organisation & Management, Learning Resources, Personal Development and Overall Satisfaction.

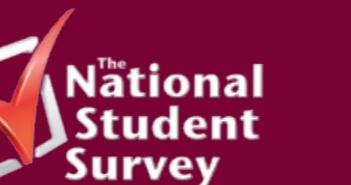
In terms of subjects, Politics received a near perfect 99 per cent satisfaction score for its teaching whilst Mathematics proved the best-performing subject with 97 per cent overall satisfaction. Those studying Accounting, Tourism and Biosciences returned an impressive 96 per cent satisfaction rate.

Satisfaction with the work of the University of Surrey Students' Union (USSU) has also increased, and now stands at 80 per cent.

Professor Gill Nicholls, Vice-President and Deputy Vice-Chancellor Academic Affairs, said, "It's a wonderful achievement for the University. We will continue to do all we can to make the experience of being a student at Surrey excellent."

"This assessment by our students shows the high quality of the learning environment we provide, but we are determined to improve still further to ensure every student gets the most out of their University education and can look back with pride and an appreciation of the academic excellence they have come to expect and deserve."

Surrey has risen up the league tables in 2013. In June, Surrey achieved eighth place in the *Guardian* university league table. Ten of the subjects taught in the faculties achieved UK top ten rankings in the *Guardian's* subject league tables. Surrey was ranked eleventh, up eight places, in *The Times Higher Education Table of Tables*. In September, Surrey rose fourteen places to twelfth position in the new joint *Times/Sunday Times Good University Guide* league table. *The Complete University Guide* ranked Surrey 13th.



## ► Student experience

Surrey students achieve their potential in an innovative and inspirational learning environment. In 2012/13, 76.9 per cent of students achieved good degrees (a first class or an upper second class award).

We have a wide mix of UK and international students and we are increasingly aware of the global environment in which we live, study and work. In 2012/13 students came from 129 countries (excluding the UK, but including EU countries).

Surrey's unique Professional Training placement programme offers students exciting opportunities in the world of work by taking a placement with one of our 2,300 employer partners. This programme allows students to develop skills, confidence and expertise that, in addition to academic experience, provide that vital edge in their future careers.

**“The thriving culture of student life at Surrey will contribute immeasurably to [student] development, growth and happiness. For me, coming to Surrey was definitely the best decision of my life, and I can't recommend it highly enough.”**

**David Halls**  
President of the Students' Union, (2012/13)



## ► Outstanding facilities

Our Library and Learning Centre has provided Surrey with a centre for study befitting a leading University.

The University investment in the Library and Learning Centre over the past five years, including the new extension, is £15.75m.

For students, the refurbished Library and Learning Centre increases access to computer equipment on campus by a third and offers a bright, spacious and calm area in which to focus on studies. There are also retail and social areas over four floors where students can relax.

The library provides the environment Surrey students need to engage with their chosen subject. We have an academic librarian for each subject area who introduces students to the library and provides expert advice on the information resources available.

The Student Personal Learning and Study Hub (SPLASH) is a student-centred area designed to enhance study. Via appointments, drop-ins and workshops, Student Learning Advisors help students with academic and personal development and with improving their writing techniques, presenting, revision, time management and other academic skills.

Surrey's Top Achievers Recognised and Supported (STARS) is a programme for students aiming for a first class degree to realise their full potential by providing tailored support to help them in their academic and professional development.

# Transforming students into professionals

The University's Professional Training placement programme went from strength to strength in 2013. More than 1,000 work and study placements were undertaken in the UK and abroad.

In addition, 1,031 students are undertaking placements in Health and Social Care degree programmes. The number of placements across all faculties is being maintained despite a double-dip recession.

Professor Neil Ward, Chairman of the Professional Training and Careers Committee, put this success down to several unique features of Surrey's placement programme. He said, "One of the fundamental reasons for the rise in placements is that the Professional Training programme is integrated within our degrees, it is not a bolt on."

Another reason for the continuing success is the wide variety of established placement partners in the UK and farther afield. The University has established strong connections with more than 2,300 placement partners involved in providing opportunities over the last five years.

"We have a huge amount of established networks which we build on all of the time. Our global partnerships are strong and bear much fruit," said Professor Ward.

In total, 170 Surrey students are spending part of their placement year abroad, with an increasing number taking part in the Erasmus scheme (114 students compared to 93 in 2012/13 in 18 different countries). Placements range from volunteering in Madagascar to a research project at CERN

in Switzerland, Airbus in Toulouse and the Hilton Hotel chain in Spain. Fifty six students are working or studying outside of the EU in 16 different countries as part of their Professional Training placement, with both research placements and study placements being undertaken at our University Global Partnership Network (UGPN) partner in North Carolina.

A new initiative for 2013 was the formal introduction of an academic programme (Level P) comprising of three modules helping prepare students for the work place.

The Professional Training team work in collaboration with colleagues in other departments, such as the Careers Service and the International Relations Office, to prepare students for their placements and ensure they receive the best learning opportunities.

Most students are paid while on placements and they are visited three times a year by an academic member of their department. Professor Ward said: "It's about training young people to have excellent professional and personal skills ready for the world of work."

Each year awards are presented to students and companies including a Professional Training Student of the Year award, whilst returning students are encouraged to share their experiences through presentations and posters.



Professor Neil Ward,  
Chairman of the Professional  
Training and Careers Committee  
with Faye Paterson, law student.

“I don't think I would have managed to secure the training contract without my placement.”

Faye Paterson  
Law LLB

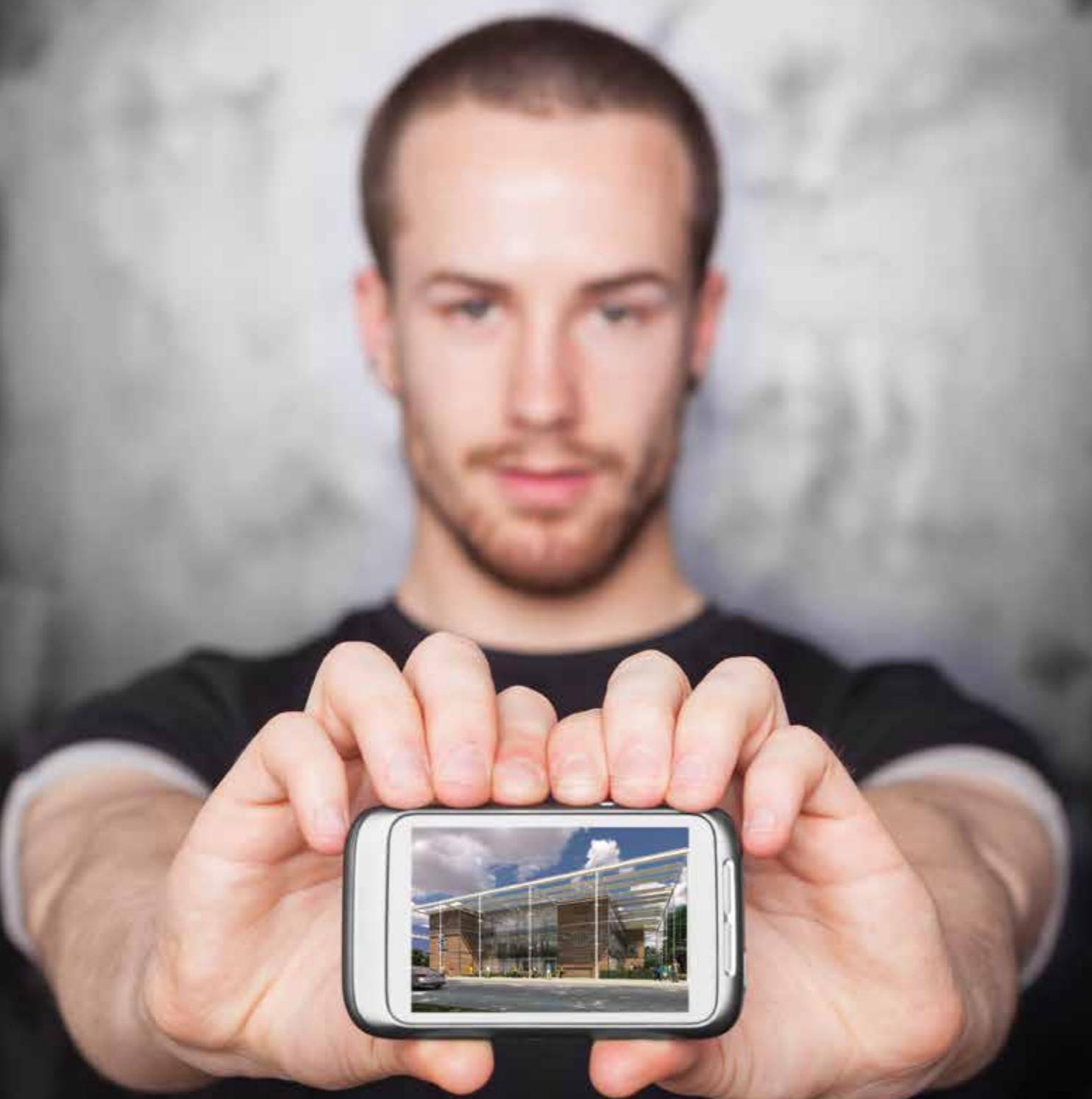
► Faye Paterson took a placement at London law firm Slater & Gordon and has been offered a training contract with them when she completes her law degree.

After studying tort law, Faye, 21, discovered a particular interest in Clinical Negligence and specialised in this area during her placement.

Said Faye, "I was treated as a valued member of the team and undertook a variety of legal and administrative tasks. During my final two months, I did purely legal work normally expected of a trainee solicitor such as taking witness statements and attending conferences."

Faye benefited from three visits by her academic tutor and she was thrilled to be offered a paid company training contract with Slater & Gordon which commences in 2015.

"I don't think I would have managed to secure the training contract without my placement. I gained invaluable experience and developed a variety of skills in a legal environment which has not only made me more confident but also more employable."



## » Surrey means business

In the global race to recover from the recession, the power of enterprise and the important role of small businesses have been widely acknowledged as the driving forces to build a stronger UK economy.

Since our beginnings at Battersea in 1891, Surrey's vision to understand the world through its research has nurtured strong partnerships with industry and commerce. These partnerships have allowed us to translate the results of our research into benefits for the individual, local communities, businesses and societies through a range of knowledge transfer and enterprise activities.

Through our wholly owned Research Park, Surrey supports many start-up ventures, small and medium-sized enterprises (SMEs).

**Global Leadership in 5th Generation**  
A consortium of key global players has pledged support worth over £30 million with the University to develop the 5G Innovation Centre, the first research centre dedicated to mobile technology. This support (which includes time, expertise and other

contributions) is in addition to the £11.6 million awarded by the Higher Education Funding Council of England (HEFCE) under the UK Research Partnership Investment Fund (UKRPIF). The group consists of some of the world's leading mobile network operators, infrastructure and tools providers, media and communications organisations, as well as the UK's communications regulator, Ofcom. It includes Aeroflex, AIRCOM International, BBC, BT, EE, Fujitsu Laboratories of Europe, Huawei, Rohde & Schwarz, Samsung, Telefonica and Vodafone.

Professor Rahim Tafazolli, Head of Surrey's Centre for Communication Systems Research (CCSR), said, "We are delighted that the formal agreements are now in place and plans are underway to start turning the vision for a 5G Innovation Centre into a reality." ▶

## ► Surrey means business (continued)

“Surrey Satellite Technology is one of the UK's single most successful university spin-outs [...] Roughly 40 per cent of the world's small satellites come from Guildford.”

**Rt Hon David Willetts MP**  
Minister of State for Universities and Science

### Innovation Gateway

In May 2013, it was announced that the University had been given a share of a £50 million grant, to develop mobile communications and technology. Minister of State for Universities and Science, the Rt Hon David Willetts MP, announced the funding as part of a range of grants across academic institutions, designed to encourage regional enterprise and burgeoning growth sectors in the economy.

Surrey's Innovation Gateway will connect the UK's leading centres in broadband mobile communications with the aim of developing the next generation of research and business leaders needed by this expanding sector. Surrey Business School will deliver a programme based on the principles of 'Agile Innovation' designed to provide students with the necessary skills to increase the speed of innovation and accelerate technology exploitation for partner companies. This goal will be achieved by establishing research and innovation programmes involving shared staff between our industry partners which will focus on market R&D priorities and the rapid transfer of IP and know-how into commercial applications and products. An early priority will be on Big Data from mobile data traffic and data captured by the Internet of Things, from a range of applications such as smart energy and metering e-health. This will impact on the local and regional economy by providing a global centre of excellence and drawing in SMEs and larger enterprises.

### Fostering Innovation and Growth for Space: Surrey Space Centre, SSTL and Astrium

The unique partnership between the Surrey Space Centre (SSC) of the University, Astrium and Surrey Satellite Technology (SSTL) has resulted in new research products with commercial opportunities. SSTL is a University spin-out company. The Minister of State for Universities and Science, the Rt Hon David Willetts MP, said, “Surrey Satellite Technology is one of the UK's single most successful university spin-outs [...] Roughly 40 per cent of the world's small satellites come from Guildford.”

SSC is the largest research group of its kind in the UK. The joint SSC and Astrium CubeSAIL solar sail/deorbiter nanosatellite mission, the first of its kind, is now in a mature stage and in preparation for launch by the end of 2014. Recent innovations in the area of electric propulsion from SSC have led to the successful testing of a new family of 'thrusters', the Quad Confinement Thruster (QCT). The QCT is unique as it runs at very low voltage (100V) and has a built in thrust vector capability. The 200W version of the QCT is now jointly being developed with SSTL, Astrium with funding from the Technology Strategy Board (TSB) for a minisatellite mission to be launched in 2015.

In a European context, the Surrey Space Centre has been awarded the largest Space R&D project in Europe, the RemoveDEBRIS active debris removal space mission. In this unique project SSTL is providing the small satellite platform and involves Astrium UK, Astrium France and Astrium Germany which will be providing a space net and harpoon to capture uncooperative targets (cubesats) simulating space debris in space. SSC is coordinating the €12 million project and is contributing the end of life drag-sail, an electric 'thruster' and the cubesat/debris targets. RemoveDEBRIS will be the first international demonstration ever to capture and remove space debris targets to be launched in 2016. »



Professor Vaios Lappas  
with the Gossamer Deorbiter

## ► Surrey means business (continued)

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### Surrey Incubation and Surrey 100 Business Angel Club

Surrey runs one of the country's most successful business incubators based on its Research Park adjacent to its Guildford campus.

Since the Surrey 100 Club was founded in 2007 it has helped businesses within the region and from the Surrey Incubation programme leverage over £20 million of funding. This equates to approximately £3 million per year. However, the majority of the investment has been raised over the past four years, demonstrating the increased confidence in the Club.

With our membership of the SETsquared Partnership, a collaboration with four other leading UK Universities (Bath, Bristol, Exeter and Southampton) we were ranked in an independent report this year amongst the top four business incubators in the world and the best in Europe. This exemplifies Surrey's determination not only to be a centre for first class teaching and research but also to ensure that we are fully engaged with a vibrant and growing base of companies around the University that can support the work of staff and students.

In September 2013, Michael Queen, the former CEO of 3i, one of the world's leading investment companies, took up the role of President of the University's Business Angel Club as part of the University's wider vision to tap into global opportunities for UK research and technology.

### Surrey Business School

Surrey Business School has been conducting research with a focus on the relevant applications that will help industry to retain its competitive edge by exploring the factors that make small businesses successful.

Kingston Smith LLP, a top-20 chartered accountancy firm, last year commissioned Surrey Business School to conduct a research study that aimed to identify the triggers that produce innovation and business success amongst these more prosperous SMEs. The resulting report was so acclaimed that Surrey Business School held a free event where the researchers discussed the project with alumni, staff, students and the public. Professor Mark Saunders and Professor David Gray provided insights into the factors that combine to make businesses succeed in the medium to long term where so many fail. Professor Alan Brown, Associate Dean for Entrepreneurship and Innovation, shared a new approach to making SME business plans more attractive to investors.

Following this event, the same team of academics were re-commissioned by Kingston Smith to conduct further research into the accessibility of finance to SMEs and the steps smaller businesses can take to improve their chances of securing funds.

Professor Saunders said, "We are excited to be working closely with both SMEs and senior decision-makers at several of the country's top banks and gaining their unique insights into this key issue."

Opposite: The Rik Medlik Building,  
home to the Surrey Business School.



“ We are excited to be working closely with both SMEs and senior decision-makers at several of the country's top banks. ”

**Professor Mark Saunders**  
Professor in Business Research Methods

# ► New to Surrey

The University of Surrey continues to attract leading academics from around the world – high achieving individuals acknowledged as experts in their fields. Here is just a small selection of the talented newcomers who have recognised that Surrey is the place to pursue an enriching academic career that will make an impact on the wider world and help to transform the lives of students.



## ► PROFESSOR GAIL ANDERSON *Head of Veterinary Education*

Professor Gail Anderson has held senior clinical and leadership roles in universities and private practice in both Canada and Australia, and served as inaugural Dean for the new School of Animal and Veterinary Sciences at the University of Adelaide. She joins the University of Surrey from Ross University School of Veterinary Medicine in St Kitts, West Indies, where she was Senior Associate Dean for Veterinary Education and Department Head for Professional Skills, Ethics and Welfare.

Professor Anderson said, "Surrey's excellent reputation for both research quality and student satisfaction, along with the opportunity to make a significant difference in the kind of veterinary professional that we will graduate, proved a winning combination. I played a role in the establishment of the new School in Adelaide and thoroughly enjoyed contributing to creating a different type of veterinary graduate. It was a most rewarding experience there, and we have the team to do something excellent here too."

"I'm passionate about veterinary education and helping our students to further their potential. My goal is to ensure that our graduating veterinarians are fully aware of the enormous range of possible career choices that the profession has to offer, and of their roles as animal welfare advocates and educators in the public sphere."



## ► PROFESSOR GRAHAM COOKSON *Professor of Economic and Public Policy*

Prior to joining Surrey, Professor Cookson spent seven years in the Department of Management at King's College London.

He read Philosophy, Politics and Economics at Somerville College, Oxford and has an MSc and PhD in Econometrics from Imperial College London, and a Pg CAP from King's College London. An applied econometrician by training, Professor Cookson's interests lie primarily in the economic analysis of public services and public policy, especially within health care.

Professor Cookson is a Fellow of the Royal Statistical Society where he is a Committee Member of the Official Statistics Section, and a member of the Royal Economic Society. He is an Expert Panel Member at the Ministry of Justice.

In 2013 he was awarded a £1 million Leverhulme Trust Research Leadership Award to study the measurement and determinants of productivity and performance of public sector organisations. Of particular interest is the role of the workforce and its relationship with efficiency and effectiveness.

Professor Cookson said, "Surrey felt like a place that would do its best to help me succeed. The opportunity to work with world leading experts in health care management, and to access data and resources previously unavailable, was also very attractive."



## ► PROFESSOR MARK GIELES *Professor of Astrophysics and University Research Fellow (URF) of the Royal Society*

Professor Mark Gieles received his PhD degree at Utrecht University in the Netherlands in 2006 under the supervision of Henny Lamers and Simon Portegies Zwart.

He then moved to the European Southern Observatory (ESO) in Chile as a research fellow and support astronomer on the Very Large Telescope (VLT) at Cerro Paranal in the Atacama desert. As part of this fellowship, he spent three months as a visiting scientist at the School of Mathematics of the University of Edinburgh to work with Douglas Heggie.

In 2009 Professor Gieles obtained a University Research Fellowship (URF) of the Royal Society which he took up at the Institute of Astronomy of the University of Cambridge. In January 2013 he started as the first Chair in Astrophysics in the Department of Physics of the University of Surrey. He became the first member of the new astrophysics research group specialising in observational and computational astrophysics with an emphasis on stellar dynamics and Milky Way formation and evolution. Professor Gieles said, "It is an incredible opportunity and a very exciting challenge to build an astrophysics group at the University of Surrey."



## ► PROFESSOR TOM ORMEROD

**Associate Dean Research**  
**Faculty of Arts and Human Sciences**

Professor Tom Ormerod (BSc (Hons) Leeds, PhD Sunderland, C.Psychol, F.BPs) is a cognitive psychologist with research interests in human thinking and expertise. After a postdoctoral position at Warwick, he was a lecturer in Ergonomics at Loughborough before moving to Lancaster in 1994, where he held a personal chair in Cognitive Psychology. He has been principal investigator on over £3m of RCUK and UK/US Government-funded projects, exploring thinking in a wide range of expertise domains that include creative design, educational task development, human-computer interaction and criminal investigation.

His recent applied research focuses on developing effective methods for evaluating human behaviour during security screening processes. He has a long-standing interest in creativity, and has developed a computational model of insight problem-solving.

He has published over 100 refereed articles and three books, and has served on a number of UK Government advisory committees. He was elected a Fellow of the British Psychological Society in 2013.

He said, "I chose to come to Surrey, partly to capitalise upon the University's reputation for delivering theoretically-grounded and empirically-based research directly to users and policy-makers in industry and government, but also because I just really liked the people and the feel of the place. I'm currently working on a computational model of creative thinking and exploring its application to investigative decision-making in the criminal justice system."



## ► PROFESSOR CHRIS PROUDMAN

**Head of the School of Veterinary Medicine**

Professor Chris Proudman has more than 20 years' experience as an equine clinician, clinical teacher and researcher. He joined the University of Surrey from the University of Liverpool where he developed external partnerships and held a variety of managerial and leadership roles in the School of Veterinary Science. Professor Proudman graduated in 1988 from the University of Cambridge and later studied for a PhD at Liverpool that explored the association between tapeworms and intestinal disease in horses.

Professor Proudman's current research is informed by his clinical experience in equine gastroenterology, and he has recently undertaken research on behalf of the Horseracing Betting Levy Board, veterinary charitable trusts and the Egyptian Government.

Professor Proudman said, "I was delighted to be offered the opportunity to join the new School of Veterinary Medicine at the University of Surrey. The Faculty of Health and Medical Science's focus on 'One Health, One Medicine' offers fantastic opportunities for cross-disciplinary research and teaching that prepares veterinary graduates to meet the needs of a changing world."

He added, "This appointment is a really exciting opportunity for me to use my clinical and veterinary research experience to help develop a new and innovative School of Veterinary Medicine."



## ► PROFESSOR JUSTIN READ

**Professor of Astrophysics**

Professor Justin Read obtained his PhD in theoretical astrophysics from Cambridge University in 2003. After a two-year postdoctoral research position, also in Cambridge, he moved to the University of Zürich to join the computational science group. In 2009, he joined the University of Leicester as a lecturer in theoretical astrophysics, and in October 2010 he was awarded an SNF assistant professorship at the ETH Zürich. In April 2013, he took up a full Chair at the University of Surrey. He has authored or co-authored more than 40 publications. In 2013, he was awarded the MERAC Prize by the European Astronomical Society for his high impact research in computational astrophysics and cosmology.

He said, "The opening of a brand new astrophysics programme at the University of Surrey seemed like too good an opportunity to miss. I was really excited about the prospect of building something from scratch. Together with Professor Mark Gieles, we have aimed to bring together the best aspects of the different universities that we have both worked at all over the world. We're both very much into new technology as an enabler. It has been really refreshing to be able to freely use file sharing tools, wiki sites and shared calendars to simplify the running of the group."



## ► ANNUAL VICE-CHANCELLOR'S AWARD WINNERS

**The first in the new series of Vice-Chancellor's Awards have been presented to individuals who have contributed to the University's achievements.**

Professor Sir Christopher Snowden, President and Vice-Chancellor, said, "Each year, the University goes from strength to strength. The many areas and activities in which the University has excelled are the direct result of the efforts and commitment of all its staff, students and alumni. These awards provide a fitting opportunity to celebrate those who have made an exceptional contribution to the successes of the University."

**The VC's Award for Teaching Excellence:** Dr Maxine David (pictured above), lecturer in Politics. Her research has focused on the foreign policies of Russia, the UK and the European Union.

**The VC's Award for Research:** Paul Sauseng, Professor in Cognitive Psychology, whose research interests lie in the psychophysiology of human short-term memory and visual attention.

**The VC's Award for Postgraduate Research:** Dr Milan Milosevic, Research Fellow, whose research interests encompass integrated optics, quantum optics and nanophotonics.

**The VC's Award for Enterprise:** Mr Andy Sullivan and Miss Samantha Lloyd.

**The VC's Alumni Award:** Mr Michael Shepherd, General Manager of London Hilton.



David Sharkey  
Chief Financial Officer

## ► Further progress towards strategic goals

The University achieved a surplus of £3.2m in 2012/13, said Chief Financial Officer, David Sharkey.

• We are also confident that the investment in increased academic capacity will further strengthen our 2014 Research Excellence Framework (REF) submission. •

**David Sharkey**  
Chief Financial Officer

He explained, "Although lower than the previous year's result, this was in line with the plan."

"In furthering its longer term ambitions, the University has, in recent years, taken the strategic decision to raise the quality of its student intake and to strengthen its academic workforce. Although these investment decisions have reduced short term surpluses, they have put the University in a stronger position to achieve longer term growth."

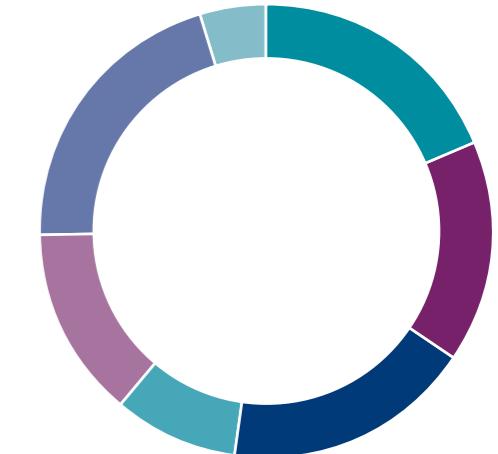
He continued, "We are already seeing the benefits of this strategy reflected in sustained improvements in both the National Student Survey and in our league table position. This, in turn, is leading to a marked increase in the quality and number of applications onto our undergraduate courses. We are also confident that the investment in increased academic capacity will further strengthen our 2014 Research Excellence Framework (REF) submission."

Mr Sharkey said, "Over recent years, the University has developed a more sustained approach to value for money. It continues, where possible, to reduce its support costs to enable continued investment in frontline academic activity and the student experience."

He added, "Changes to the undergraduate funding regime and cuts in government capital funding, together with uncertainties regarding government immigration policies, continue to present challenges. However, the strategic decisions we have taken to invest in quality, combined with strong financial management, mean that the University has the financial strength to support it in achieving its strategic vision of becoming a leading national and international university by 2017."

### ► 2012/13 CONSOLIDATED INCOME SHOWING PERCENTAGE CHANGE FROM 2011/12

Funding council grants	£40.2m	(-13%)
UK/EU UG/PG tuition fees	£33.7m	(+17%)
Non-EU tuition fees	£37.9m	(+10%)
NHS/Other tuition fees	£19.1m	(-3%)
Research income	£28.8m	(+5%)
Other income	£43.7m	(-1%)
Research Park/investments	£10.3m	(-3%)
<b>Total income</b>	<b>£213.7m</b>	



### ► 2012/13 CONSOLIDATED EXPENDITURE AND OTHER ITEMS SHOWING PERCENTAGE CHANGE FROM 2011/12

Staff costs	£116.3m	(+5%)
Other operating expenditure	£72.5m	(+2%)
Depreciation and interest	£23.2m	(+3%)
<b>Total expenditure</b>	<b>£212.0m</b>	
Other items *	(£1.5m)	
<b>Total expenditure and other items</b>	<b>£210.5m</b>	

\* Other items comprise taxation, transfer from endowments and exceptional items.

### ► MOVEMENT IN CONSOLIDATED NET ASSETS 2012/13

Consolidated net assets at 31 July 2012	£188.8m
Surplus for the year	£3.2m
Actuarial gains on pension schemes	£6.1m
Investment property revaluation	£2.0m
Other movements	(£1.9m)
<b>Consolidated net assets at 31 July 2013</b>	<b>£198.2m</b>



## ► FINANCIAL REVIEW

The summarised financial statements comprise the consolidated results of the University (including its Foundation Fund) and its subsidiary companies, notably Surrey Sports Park Limited.

### INCOME AND EXPENDITURE

#### Consolidated results

The University achieved a consolidated surplus for 2012/13 of £3.2m. Although lower than the previous year's figure of £6.8m, this was in line with the plan.

Consolidated income rose by £2.4m to £213.7m (2011/12: £211.3m).

#### Core University activities

The University's core activities include Surrey Sports Park Limited. They exclude the Surrey Research Park.

Having achieved in 2010/11 (one year ahead of the plan) its stated aim to break even on core activities, the University set itself the target of achieving an annual consolidated net surplus of at least 5% by 2016/17. However, for strategic reasons, it planned for a deficit in 2012/13 on its core activities. This planned deficit reflected the following major strategic decisions:

- » to focus on raising the quality of the undergraduate intake (knowing that this would have a short term impact on student numbers); and
- » to invest in further academic posts to improve student to staff ratios and to build capacity ahead of the REF.

Total income from core activities grew by a relatively modest £2.6m (1.3%) to £204.2m. Funding Council Grants fell by £6.0m (13.0%) as funding shifted from the state to the student under the new undergraduate funding regime. Tuition fee and educational grant income rose by a total of £7.8m (9.4%) to £90.7m, with income from non-EU students rising £3.4m (9.9%) to £37.9m. Research income grew by £1.3m (4.6%) to £28.8m.

Expenditure on core activities rose by £7.1m (3.5%) to £207.7m. Staff costs (excluding restructuring costs) rose by £6.7m (6.2%) to £115.8m, reflecting the investment in academic staff.

#### Foundation Fund

The Surrey Research Park, which is the Foundation Fund's main asset, maintained good occupancy levels and a strong income stream, despite the continuing weak economy. Income for the year totalled £9.5m. The surplus before interest rose from £6.4m in 2011/12 to £6.9m in 2012/13. After allowing for a change in the

basis for allocation of interest costs between the Foundation Fund and the University's core activities, the 2012/13 net surplus was £5.2m (2011/12: £5.6m).

#### BALANCE SHEET

Consolidated net assets rose in 2012/13 by £9.4m (4.9%) to £198.2m, helped by positive movements in both pension fund and Research Park valuations.

Pension fund actuarial gains of £6.1m reflected the strong performance of stock markets in 2012/13. The overall reduction in the balance sheet pension liability was £5.5m.

The value of completed investment properties on the Research Park rose by £2.8m to £79.2m. This reflected an upwards revaluation adjustment of £2.0m and capital additions of £0.8m.

Despite the proactive approach taken by the Research Park management team to maintain occupancy levels, the Park's value remains more than £20m below its 2007 peak of £101m.

#### CASHFLOW

Available cash, defined as cash plus short term investments, fell in the year by £22.2m to £43.1m. This reduction was broadly in line with the plan. Offset against the available cash balance were borrowings of £150.0m, giving net debt at 31 July 2013 of £106.9m (31 July 2012: £91.2m).

#### CAPITAL INVESTMENT

Additions to tangible fixed assets in the year totalled £24.2m (2011/12: £17.4m).

2012/13 saw further investment in student accommodation, with the construction of a 212 unit residences block on the Manor Park campus. This brought to 1,750 the number of units that have been built on the Manor Park campus since development began in 2005.

#### SUMMARY

Over the last twelve months, the University has made the necessary investment towards its longer term strategic goals whilst, at the same time, ensuring that it has achieved its short term financial targets.

## ► SUMMARY CONSOLIDATED INCOME AND EXPENDITURE ACCOUNT

for the year ended 31 July 2013

	2012/13 (£m)	2011/12 (£m)
Total income	213.7	211.3
Total expenditure	(212.0)	(204.7)
<b>Surplus before taxation</b>	<b>1.7</b>	<b>6.6</b>
Taxation and transfers from endowments	0.2	0.2
Exceptional item - surplus on disposal of building	1.3	-
<b>Retained surplus for the year</b>	<b>3.2</b>	<b>6.8</b>

## ► SUMMARY CONSOLIDATED BALANCE SHEET

as at 31 July 2013

	2013 (£m)	2012 (£m)
Fixed assets	330.0	318.7
Endowment asset investments	44.2	42.2
Current assets	63.0	85.3
Creditors: amount falling due within one year	(66.8)	(73.5)
<b>Total assets less current liabilities</b>	<b>370.4</b>	<b>372.7</b>
Creditors: amount falling due after more than one year	(143.4)	(149.4)
Provisions for liabilities and charges	(1.4)	(1.6)
Pension liability	(27.4)	(32.9)
<b>Total net assets</b>	<b>198.2</b>	<b>188.8</b>
Deferred capital grants	54.4	56.6
Endowments	44.2	42.2
Reserves	99.6	90.0
<b>Total funds</b>	<b>198.2</b>	<b>188.8</b>

## ► INDEPENDENT AUDITOR'S STATEMENT TO THE UNIVERSITY OF SURREY ('THE UNIVERSITY')

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We have examined the summarised financial statements of the University of Surrey for the year ended 31 July 2013 which comprise the summary consolidated income and expenditure account and the summary consolidated balance sheet, which are set out on page 63 of the University's Annual Review ('Annual Review'). The summarised financial statements have been prepared by the University Council for the purpose of inclusion in the Annual Review, as explained in the note.

This statement is made, in accordance with our engagement letter dated 21 November 2011, solely to the University, in order to meet the requirements of paragraph 36 of the Statement of Recommended Practice: Accounting for Further and Higher Education (2007). Our work has been undertaken so that we might state to the University those matters we have agreed to state to it in such a statement and for no other purpose. To the fullest extent permitted by law, we do not accept or assume responsibility to anyone other than the University for our work, for this statement, or for the opinions we have formed.

**Respective responsibilities of the University Council and auditor**  
The Council has accepted responsibility for the preparation of the summarised financial statements in accordance with paragraphs 29 to 35 of the Statement of Recommended Practice: Accounting for Further and Higher Education (2007). Our responsibility is to report to the University our opinion on the consistency of the summarised financial statements on page 63 within the Annual Review with the full financial statements.

**Note**  
The summarised financial statements for the year ended 31 July 2013, which comprise the summary consolidated income and expenditure account and the summary consolidated balance sheet, have been prepared by the Council of the University of Surrey for the purpose of inclusion in this Annual Review. The summarised financial statements are an extract of the full financial statements on which the auditor issued an unqualified opinion.

The full financial statements were approved by the University Council on 21 November 2013.

The full audited financial statements and independent external auditor's report can be obtained from the Chief Financial Officer, University of Surrey, Guildford, Surrey, GU2 7XH.

Professor Sir Christopher M. Snowden FRS FREng FIET FIEEE FCGI  
President and Vice-Chancellor

We also read the other information contained within the Annual Review and consider the implications for our report if we become aware of any apparent misstatements or material inconsistencies with the summarised financial statements.

### Basis of opinion

We conducted our work having regard to Bulletin 1999/6 'The auditor's statement on the summary financial statement' issued by the Auditing Practices Board. Our separate report on the University's full financial statements for the year ended 31 July 2013 describes the basis of our statutory audit opinion on those financial statements.

### Opinion

In our opinion, the summarised financial statements set out on page 63 are consistent with the full financial statements for the year ended 31 July 2013.

Chris Wilson

For and on behalf of KPMG LLP, Statutory Auditor  
Chartered Accountants  
1 Forest Gate, Brighton Road  
Crawley  
RH11 9PT

27 November 2013

### Disclaimer

Every effort has been made to ensure the accuracy of the information contained in this publication at the time of going to press (December 2013). The University reserves the right, however, to introduce changes to the information given.

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Jim Glover  
Chair of Council

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