WHAT MAKES US EXCEPTIONAL?
Many organisations claim to change lives, but we are proud to be in a position to demonstrate exactly how our groundbreaking research is making a difference across the globe.

Our academics are exploring the structure of the universe, developing life-saving treatments, and creating new medicines that can be personalised to individual patients to improve their effectiveness. We are creating revolutionary materials for industry, producing new foods to tackle obesity, investigating renewable energy sources, and exploring the potential of biological tools that could replace damaged tissue.

Rated in the top 1% of higher education institutions worldwide, we inspire people to learn and achieve. We are committed to ensuring that we offer a truly world-class student experience, investing in state-of-the-art teaching facilities and developing award-winning accommodation. This year we are also opening a campus in London, offering a suite of vocationally focused postgraduate programmes that will enable students to benefit from accreditation by professional bodies as well as strong links with industry.

In an era of unprecedented change in the higher education sector, we continue to attract the brightest and the best. With 36,000 students, including 10,000 online students, we are continually expanding the availability of our academic programmes, and more than half our staff are ranked world leading or internationally excellent.

We believe this is an exceptional place with an exceptional story to tell. And with an international network of partners, our impact is being felt all over the world.

To be part of our next chapter, visit: www.liverpool.ac.uk.

Vice-Chancellor
Professor Sir Howard Newby CBE
Established in 1881, we have a long tradition of pursuing novel interdisciplinary research that has a tangible impact on people, places, policies and the planet. Our research is focusing on some of the biggest issues affecting society, including environmental and cultural change, security and conflict, sustainable energy, materials for the future, personalised health and global healthcare.

WE ARE IN THE TOP 1% OF HIGHER EDUCATION INSTITUTIONS WORLDWIDE
Scientists from our Department of Physics are playing a significant role in the international ALPHA experiment at CERN in Switzerland to measure the effect of gravity on antihydrogen – the antimatter counterpart of hydrogen – marking an important step in understanding how antimatter behaves.

The Nuclear Physics group, who were responsible for building and operating a silicon vertex detector at CERN which enables experiments of this kind to be carried out, trapped and then released antihydrogen atoms in order to measure its freefall gravity.

The experiment, which was built in the Liverpool Semiconductor Detector Centre, enabled the team to demonstrate that hydrogen and antihydrogen shared the same properties and therefore responded to gravity in the same way.

Professor Paul Nolan, who leads the Liverpool team, said: “Although the data does not allow a more accurate limit to be determined yet, future developments will allow researchers to improve these measurements and test more accurately for possible deviations.”

The work at the ALPHA experiment is aimed at accurate measurements of the properties of antimatter which in turn will help us understand why the world around us is made almost entirely of matter rather than antimatter. The improved accuracy of these measurements in the next few years will be an important step towards this understanding.
CREATING PIONEERING NEW MATERIALS FOR INDUSTRY

A revolutionary facility founded by the University in collaboration with Unilever will empower companies and academic teams to design and create new functional materials at the molecular level, paving the way for the development of innovative, high-value products to support key industrial sectors, including energy, healthcare, telecommunications and transport.

The Materials Innovation Factory, which will open in 2016, will provide a unique suite of state-of-the-art equipment and modeling facilities, led by a team of academic and industrial research experts in open-access laboratories. Companies will be able to access world-leading facilities and knowledge in order to discover new, sustainable materials and transformative commercial applications.

At the heart of the Factory will be shared laboratory facilities housing a £10 million suite of measurement and analytic instrumentation, coupled with bespoke synthetic capabilities and a unique high-throughput formulation laboratory. This will accelerate the research process and greatly reduce time to market. The co-location of University and industry researchers will facilitate technology readiness levels (TRL) from 2-7: that is, from molecular discovery through to development, testing, and ultimately the creation of prototypes.

Professor Stephen Holloway, Provost for Innovation, said: “This new type of institute builds on our world-leading expertise in materials science and engineering at Liverpool. Its creation sets a new paradigm for university-industry collaboration in the UK. The Factory will significantly extend the UK research base, promoting economic growth and providing outstanding facilities for the education of graduate students and young researchers.”

Our scientists have shed new light on how diving mammals, such as the sperm whale, have evolved to survive for long periods underwater without breathing.

The team identified high levels of the oxygen-binding protein Myoglobin in elite diving mammals such as whales and seals, as well as semi-aquatic beavers, muskrats and water shrews. They found that the increased electrical charge of Myoglobin in mammals that have high concentrations of the protein causes electro-repulsion, like similar poles of two magnets. This prevents proteins from sticking together, which can impair their function, and allows much higher concentrations of the oxygen-storing Myoglobin in the muscles of these divers.

The research, funded by the Biotechnology and Biological Sciences Research Council (BBSRC), has the potential to help improve understanding of diseases where protein aggregation is a problem – such as Alzheimer’s and diabetes – and could inform the development of artificial blood substitutes.

Increasing Understanding of Disease through Evolution
Our Stephenson Institute for Renewable Energy has been awarded £4 million to address the insufficient lifespan of batteries used to store energy made by renewable industries.

Stable Interfaces for Rechargeable Batteries (SIRBATT), funded by the European Union’s Seventh Framework Programme (FP7), aims to enhance the lifetime of batteries used to store energy generated from renewable industries such as solar and wind power. The project brings together academic and industrial partners from across the EU, and the International Advisory Board includes leading battery research groups from the US and Japan.

The Institute, which was created to undertake research into renewable energy sources, is also developing the next generation of renewable chemicals from biomass to use in the manufacture of materials, plastics, solvents and pharmaceuticals. The £1.8 million project will involve developing platform chemicals from the sugars, fats, oils and carbohydrates produced by biomass, including food supply chain wastes and forestry wastes.

Leading the project, Dr. Jose Lopez-Sanchez said: “Using renewables in the production of bioenergy and chemicals is one of the steps required to reduce CO2 emissions and therefore reduces the detrimental impact of human activity on our environment.”

Pursuing groundbreaking research

Professors Andrew Cooper and Mathias Brust from the Department of Chemistry have been awarded coveted £2.1 million European Research Council Advanced grants to pursue groundbreaking, high-risk projects that open new directions in their research fields.

The grants are awarded to scientists who are exceptional leaders in terms of the originality and significance of their research contributions.

Professor Cooper is transforming the area of organic crystal engineering by introducing a new level of ‘designability’ into functional molecular crystals, while Professor Brust has been awarded funding for his project PANDORA (Performance Active Nanoscale Devices Obtained by Rational Assembly), which will make nanomaterials more responsive and more ‘biological’.

Professor Matthew Rosseinsky, also from our Department of Chemistry, has been awarded a Royal Society Research Professorship – one of only three scientists to be honoured in this way. Professor Rosseinsky leads a research group that works to understand the physical and chemical properties of new materials.
UNRAVELLING THE HISTORY OF BRITISH DEPORTEES

Professor Barry Godfrey from the School of Law and Social Justice is leading a £1.7 million international project funded by the Arts and Humanities Research Council to determine the fates of more than 66,000 prisoners from London who were transported to Australia from 1787 up to the 1920s.

The Digital Panopticon project will bring together information from numerous genealogical, biometric and criminal justice databases into one searchable website, enabling historians to chart the fortunes of all prisoners transported to Australia from the point of conviction to their death.

RESEARCHING THE IMPACT OF VOLCANIC ERUPTIONS

University geologists are exploring how currents of hot gas and rock that follow explosive volcanic eruptions can travel so far, causing widespread damage to communities living around the flanks of volcanoes.

Professor Peter Kokelaar, George Herdmann Professor of Geology in Earth, Ocean & Ecological Sciences, is using a combination of theory, laboratory experiments and fieldwork to understand the pyroclastic flows associated with volcanoes that have led to so many deaths in volcanic regions.

In recognition of his work, Professor Kokelaar has been awarded the Murchison Medal from the Geological Society, which is given to scientists who have made a significant contribution to the field through their research.

CREATING A SAFER WORLD

The University’s Institute for Risk and Uncertainty offers cross-disciplinary, cutting-edge expertise to analyse the long-lasting consequences that real world problems and disasters have on society.

The only centre of its kind in the UK, the Institute brings together researchers from across the University’s three academic specialties to work with industry and governmental bodies to quantify, mitigate and manage risk in a variety of fields in order to reduce or prevent their consequences on a global scale.

Current research is exploring issues of risk and resilience associated with building design, climate analysis, reliability engineering, software reliability and materials science.
The University has named its Institute for Public Policy & Practice after Lord Heseltine in honour of his commitment to giving cities greater powers to shape their own futures and for his role in reviving Liverpool. The Heseltine Institute helps to connect research expertise at the University with policymakers, practitioners and the public to produce accessible research on key policy areas. Current research focuses on six themes: Society, Environment, Health and Wellbeing, Governance, Economy, and Technology, exploring issues such as how we can better understand and influence the factors that make some cities succeed, how we can exploit the opportunities of ‘Big Data’ whilst safeguarding the interests of citizens, how we can develop immigration policies that are genuinely ‘fit for purpose’, and why we should be interested in the future of rural communities.

Researchers from our School of Electrical Engineering, Electronics and Computer Science have shown for the first time that WiFi networks can be infected with a virus which can move through densely populated areas as efficiently as the common cold. The team designed and simulated an attack by a virus called Chameleon, and found that not only could it spread quickly, but that it was able to avoid detection and identify the points at which WiFi access is least protected by encryption and passwords. Alan Marshall, Professor of Network Security, said: “It was assumed that it wasn’t possible to develop a virus that could attack WiFi networks, however we demonstrated that it is and also that it can spread quickly. We are now able to use the data generated from this study to develop a new technique to identify when an attack is likely.”
EXPLORING THE HUMAN FOOT

In a study of more than 25,000 human steps made on a pressure-sensitive treadmill, scientists in our Institute of Ageing and Chronic Disease have shown that despite having abandoned life in the trees long ago, human feet have retained a surprising amount of flexibility and have much more in common with the flexible feet of other great apes.

Dr Karl Bates from the Institute said: “Despite becoming nearly exclusively ground-dwelling, we have retained flexibility in the feet to allow us to cope effectively with the differences in hard and soft ground surfaces. The next part of our study will be testing this theory, which could offer a reason why humans can outrun a horse over long distances on irregular terrain.”

DISCOVERING ANCIENT WORLDS

Environmental scientists have used their expertise in geophysical data processing to discover evidence of an ancient micro-continent buried beneath the Indian Ocean which extends more than 1,500 km in length from the Seychelles to the island of Mauritius and contains rocks as old as 2,000 million years, much older than the Indian Ocean which has formed only in the last 165 million years.

They believe this micro-continent, which they have named Mauritia, was split off from Madagascar and India between 61 and 83 million years ago as one single land mass drifted apart to form the continents around the Indian Ocean we know today. Much of it was then smothered by thick lava deposits as a result of volcanic activity and submerged beneath the waves.

The research team used satellite derived data to map crustal thickness under the Indian Ocean. Employing geophysical data processing techniques, they were able to identify large areas where the crust beneath the sea floor was much thicker than normal, suggesting that there are remnants of fragmented continents under the Indian Ocean.

The mapping techniques, which use satellite data developed by Liverpool and industry partners, are applied to deep-water oil and gas exploration in frontier areas and have also been used by governments when settling disputes regarding ownership of territories.
The University’s Virtual Engineering Centre (VEC) has established a partnership with the UK Science and Technology Facilities Council at Daresbury Laboratory to deliver joint solutions to industry challenges supported by access to the country’s largest High Performance Computing resources.

Established in 2010, the VEC is a unique private-public partnership committed to the use of modelling, simulation and 3D immersive visualisation to improve business performance and competitiveness for the advanced engineering sector.

Recent projects include a collaboration with Jaguar Land Rover which combined the expertise of both organisations to develop new scientific workflows connected to High Performance Computing resources, producing groundbreaking Computer Aided Engineering process templates to support future designs.

The VEC is also leading a £9.1 million project to develop relevant software and sensor technologies created by highly innovative SMEs for use in autonomous systems, and was instrumental in the awarding of a £3.3 million Advanced Manufacturing Supply Chain Initiative (AMSCI) project which will create a new ‘digital’ supply chain for the UK automotive sector.
A Centre for Global Eco-Innovation has been launched to join research and development expertise with small and medium-sized enterprises (SMEs). The Centre offers up to 50 graduates the chance to work on intensive three-year projects with North West SMEs, providing an opportunity for those involved to use their project as the basis of a PhD programme. The Centre will also support up to 250 North West companies to develop new products and services through three to six month collaborations with the University.

The Biotechnology and Biological Sciences Research Council (BBSRC) has invested £1.9 million in world-class facilities at the University, enabling us to acquire technology which will consolidate our reputation for world-class research in life sciences. In conjunction with the Technology Directorate, the Institutes of Integrative Biology and Translational Medicine have recently won four of 20 grants awarded nationally in the BBSRC ALE RT 13 funding competition. The initiative is designed to facilitate maximum use of technology through managed open access, collaboration, and resource sharing.

The four grants were awarded to the University to purchase cutting-edge technology in genomics, proteomics, cell imaging and electron microscopy. In each case, the instruments will be run as shared research facilities, providing access to research groups and industry from across the UK.
We support collaboration and joined-up thinking across the spectrum of scientific discovery, clinical research and healthcare provision in pursuit of safe, effective therapies and practice to make life better for patients and professionals worldwide. With 1,300 world-leading researchers, an annual research income of £124 million, and a legacy of nine Nobel Laureates, it is no surprise that we are at the forefront of groundbreaking discoveries.

We are improving patient care and developing new treatments.
The effectiveness of one of the most widely-used anti-coagulant drugs can be improved if genotype testing is carried out before the dose is decided, according to findings from Liverpool researchers.

Professor Munir Pirmohamed, from the University’s Institute of Translational Medicine, tested the effect of the anti-coagulant drug Warfarin when prescribed in a standard dose and when prescribed based on genotype testing of patients.

Professor Pirmohamed, who is Director of the University’s Wolfson Centre for Personalised Medicines and the Liverpool Health Partners’ Clinical Academic Programme Lead for Drugs, said: “We have been able to show that personalising the dose to the patient based on their genes, age and body weight can help set the right dose and reduce both risk and the time it takes for the medicine to become effective.”

The research, which was funded by the European Union’s Seventh Framework Programme (FP7), has been presented at the American Heart Association Scientific Sessions, which is attended by more than 18,000 delegates. It was also published in the New England Journal of Medicine.
TRANSFORMING CANCER DIAGNOSIS

The University has been awarded £3.2 million from the Engineering and Physical Sciences Research Council (EPSRC) to develop new diagnostic tests for cervical, oesophageal and prostate cancer patients.

These cancers are difficult to detect at an early stage as symptoms only become apparent when the tumours become large.

The funding will allow Liverpool researchers to use a unique and extremely intense source of infrared light (the Infrared Free Electron Laser), provided by the Science and Technology Facilities Council’s ALICE accelerator testing facility, to identify changes both within and surrounding cells which indicate a tumour.

This will help to support early diagnosis of cancers and could lead to the development of new instrumentation for cancer diagnosis that will directly benefit patients.

Meanwhile, Professor Chris Probert from the Institute of Translational Medicine has developed a device in collaboration with scientists at the University of the West of England which can read odours in urine to help diagnose patients with early signs of bladder cancer, which is said to be the most expensive cancer to treat.

The ODOREADER® contains a sensor which responds to chemicals in gas emitted from urine. The device analyses this gas and produces a ‘profile’ of the chemicals that can be read by scientists to diagnose the presence of cancer cells in the bladder.

DEVELOPING NEW APPROACHES TO TREAT ALZHEIMER’S

Scientists from the Institute of Integrative Biology are developing a new approach to harness the natural ability of complex sugars to block a protein that causes damage in the brain of Alzheimer’s patients.

The team, led by Professor Jerry Turnbull, has used a new chemical method to produce the world’s largest library of sugars called Heparan Sulphates in the lab. These sugars, which are found in nearly every cell of the body, can prevent the formation of small proteins in the brain which disrupt the normal function of cells leading to the progressive memory loss which is characteristic of Alzheimer’s disease.

The sugars are being tested to identify those with the best activity and fewest possible side effects, as these will have potential for development into a drug treatment that targets the underlying cause of the disease.
generates new nerve cells, but diets rich in omega-3s could prevent these negative effects by stimulating the area of the brain that controls feeding, learning and memory. However data from 185 research papers revealed that fish oils do not have a direct impact on this process in these areas of the brain, but are likely to play a significant role in stalling refined sugars and saturated fats’ ability to inhibit the brain’s control on the body’s intake of food.

The research, which was published in the British Journal of Nutrition, concluded that while fish oils do not appear to have a direct impact on weight loss, including more oily fish or fish supplements in our diets could improve peoples’ general health by mimicking the effects of calorie restrictive diets.
ENABLING MEDICAL ADVANCES THROUGH MATHS TECHNIQUES

The Centre for Mathematical Imaging Techniques has been awarded £1.3 million from the Engineering and Physical Sciences Research Council to develop a novel diagnostic tool to be used in various medical applications, from structural health monitoring to predicting tissue quality.

The three-year project brings together leading experts in Materials Science, Computational Mathematics and Biomedical Engineering to develop new mathematical models and algorithms which can be used to understand and interpret medical images and support the management of disease.

NEW HOPE FOR ALKAPTONURIA SUFFERERS

A national centre has been opened in Liverpool offering treatment for sufferers of a rare genetic disease called Alkaptonuria (AKU), which causes debilitating deterioration in patients’ joints.

The Robert Gregory National Alkaptonuria Centre, based at the Royal Liverpool University Hospital, is enabling patients suffering from AKU to benefit from a five-year clinical trial of the drug Nitisinone, which has been shown by a team of scientists at the University's Institute of Ageing and Chronic Disease to prevent the onset of the disease if used at the earliest signs of the condition. If the drug is administered throughout a patient’s lifespan, it has the potential to prevent joint disease altogether.

The team behind this groundbreaking research is one of 13 European organisations to be awarded the 2013 RARE Champions of Hope Collaborations in Science Award in recognition of their contribution to patient advocacy, scientific research and medical care.

REVOLUTIONISING MEDICAL CARE

Projects funded by the Medical Research Council (MRC) are revolutionising medical care across the University.

Scientists at our MRC Centre for Drug Safety Science have been awarded £4.5 million as part of the MRC and British Heart Foundation’s £20 million investment in the development of regenerative medicine therapies.

Regenerative medicine is a relatively new field of science which uses a range of biological tools to repair or replace damaged tissue and has the potential to transform medical care by providing treatments for incurable conditions such as heart disease, Parkinson’s disease, blindness and liver failure.

Our Centre is also leading a €1.2 million Research study called PAMPER which will devise new methods to speed the development of drugs for children that should be faster and safer than currently used approaches.

Meanwhile scientists at our Centre for Integrated research into Musculoskeletal Ageing, which is supported by the MRC and Arthritis Research UK, are exploring the debate about whether age-related decline in bone density – a key feature of osteoporosis – and the degeneration of articular cartilage are due to ageing alone or whether the risk of developing these conditions increases with specific diseases in older people.
The Institute of Infection and Global Health has won two bids worth a combined total of £7.5 million from the National Institute for Health Research (NIHR) to establish Department of Health Protection Research Units (HPRUs) at the University focusing on Emerging Infections, and Zoonosis and Gastrointestinal Infections. HPRUs are partnerships between universities and Public Health England (PHE) which will create national centres of excellence in multi-disciplinary health protection research.

Led by Head of Institute Professor Tom Solomon, the HPRU in Emerging Infections will explore new ways of detecting and characterising pathogens, develop novel surveillance and epidemiological approaches, and improve understanding of disease transmission and the associated effects of climate change.

The second unit, specialising in Zoonosis and Gastrointestinal infections and led by Professor Sarah O’Brien from the Department of Epidemiology and Population Health, will focus on integrating natural science and social science methodologies to work out how best to control diarrhoeal diseases.

Professor Solomon said: “Six of the 13 new HPRUs to be funded by NIHR relate specifically to infection. For Liverpool to host two of these six really cements our position as one of the country’s pre-eminent centres for infection research.”

Dr Rachel Floyd from the Institute of Translational Medicine has been awarded a Fellowship by Kidney Research UK to investigate the E. coli bacteria which cause Urinary Tract Infections (UTIs) move to the kidneys, where they can cause considerable damage.

UTIs currently affect around half of all women in the UK, but E. coli, the bacteria which cause 85% of UTIs, are becoming increasingly resistant to antibiotics that are currently available, meaning they may not clear an infection. If the untreated UTI spreads to the upper urinary tract it can cause kidney damage.

Previous studies have suggested that E.coli can ‘hide’ inside cells lining the bladder, which makes antibiotics ineffective and means the immune system does not respond effectively, so bacteria are not properly cleared from the bladder. This may be why some people get recurrent UTIs.

Dr Floyd (pictured right) said: “I’m hoping to be able to identify alternative treatments before all current antibiotics used to treat UTIs become completely ineffective.”
AT THE FOREFRONT OF CLINICAL DEVELOPMENTS

The Clinical Research Unit at the Royal Liverpool University Hospital has become the first NHS facility in England to be granted Medicines and Healthcare products Regulatory Agency (MHRA) standard and supplementary Phase 1 Accreditation. This means the University has the first clinical research unit to meet the high standards required for early clinical trials where drugs can be tested on humans for the first time as part of tightly controlled research projects. MHRA Phase 1 accreditation will help to provide patients with greater access to the very latest drugs and technologies and will bring economic benefits to the city as a centre for global healthcare research.

INNOVATORS IN ORTHOPTICS

Professor Gail Stephenson, Head of the Directorate of Orthoptics and Vision Science and Consultant Vision Scientist at Manchester United FC, has been elected the first British President of the European Association of Orthoptics (OCE). The OCE ensures that Orthoptics has a voice in setting legislation in Brussels in relation to working rights and standards of occupations.

Our Directorate of Orthoptics and Vision Science designs, delivers and supports a wide-ranging education programme, including a BSc (Hons) course, postgraduate training and professional development.

Dr Fiona Rowe, a Senior Lecturer in Orthoptics, has also received a Silver Achievement award for the UK and Ireland Society of Cataract and Refractive Surgeons. Fiona’s research interests include visual impairment following brain injury and stroke and visual field assessment.

Meanwhile, Professor Rachel Williams is one of just 10 scientists in the UK to receive a Recognising Inspirational Scientists and Engineers (RISE) award from the Engineering and Physical Sciences Research Council.

Rachel’s main research interests are in the development of innovative ways to modify materials and their surfaces to treat sight threatening conditions and in 2013 she was awarded a Leverhulme Trust Senior Research Fellowship through the Royal Academy of Engineering.
We offer an intellectual environment where teaching and learning takes place at the cutting edge of disciplines and is driven by research excellence. With 36,000 students, including more than 10,000 online students from more than 160 countries, we are an academically strong university and offer more than 445 university programmes. We work closely with the Liverpool Guild of Students to provide a culture where students feel valued, supported and inspired to achieve, with access to state-of-the-art facilities, award-winning accommodation and comprehensive careers support.
The University was shortlisted in the ‘Most Improved Student Experience’ category at the Times Higher Education Awards, which is voted for by around 20,000 students who are independently surveyed on their opinions about the academic reputation, teaching, social life and facilities of their institutions.

Our £23 million Central Teaching Hub (CTH) was voted ‘Best Facilities’ at the 2013 Guardian University Awards. Described as “truly groundbreaking” by judges, the CTH brings together a variety of different science disciplines under one roof to demonstrate to students the benefits of learning from related subject areas, representing a new innovation in the higher education sector.

In order to provide a world-class student experience, we are investing £32 million in teaching facilities in the Faculty of Humanities and Social Sciences, building a £7.5 million extension to the Management School, and a £13.8 million refurbishment of the Guild of Students, which will open this year which will include an international food court, music venue and student social space.
Crown Place, a £65 million student village in the centre of the University, will open in September 2014. The 1,259 en-suite bedroom development demonstrates our commitment to meeting Government carbon reduction targets with a focus on sustainable and energy efficient design.

Our £45 million eco-friendly student residences, Vine Court, which is also located on the main campus, has achieved ‘Excellent’ status from VisitEngland for 2014, while our Botanical Gardens at Ness won the Sustainable Tourism Award 2013. The complex is at the forefront of sustainable residential development and features 732 en suite rooms and 17 penthouse apartments, a coffee shop, bar, restaurant and library.

The University is also investing in its off-campus accommodation, developing new residences at its Greenbank site to provide a self-contained student village.

The University’s cultural and heritage offering is central to our success – not only to enhance the student and staff experience, but also in terms of contributing to the economic and cultural regeneration of the Liverpool City Region.

The University’s cultural and heritage offering is central to our success – not only to enhance the student and staff experience, but also in terms of contributing to the economic and cultural regeneration of the Liverpool City Region.

Our Victoria Gallery & Museums, which houses the University’s extensive collection of fine arts, furniture, silverware and exhibits accumulated since the foundation of the University in 1881, has achieved ‘Excellent’ status from VisitEngland, the national tourist board for 2014, while our Botanical Gardens at Ness won the Sustainable Tourism Award 2013.

A trio of alumni who have gone on to become Olympic and Paralympic champions have opened the University’s refurbished Sports and Fitness Centre.

Footballer Matthew Dimbylow, taekwondo expert Chika Yagazie Chukwumerij, and rower Alison Mowbray returned to campus for the opening of the £4.5 million refurbishment project which includes enhanced pool and changing facilities, a larger fitness area, and an integrated weight training facility and dance studio.

Our veterinary facilities have been showcased in two series of the Channel 5 programme Animal Clinic.

Animal lover Ben Fogle followed the lives of staff and students at the animal hospital in Leahurst and the busy First Opinion Clinic on campus.

The series follow the vets as they deal with medical emergencies, everyday injuries and mystery ailments, involving everything from domestic pets and farm animals to thoroughbred racehorses.

In 2014 the University and its medical students are taking part in another Channel 5 documentary series focused on people who donate their bodies to science.

A trio of alumni who have gone on to become Olympic and Paralympic champions have opened the University’s refurbished Sports and Fitness Centre.
Our Library consistently achieves excellent scores in student satisfaction surveys. In the National Student Survey, the Library has outperformed the sector average for the Russell Group of research-led institutes in every one of the last five years, while in every Times Higher Education survey of student opinion, the Library has gained scores which place it in the top third in the Russell Group.

A series of initiatives have been introduced to further improve Library resources and help students and staff to access more of the resources they need, when they need them.

The ‘Resources for Courses’ initiative is in response to student feedback, and library staff have worked closely with the Liverpool Guild of Students to develop three key tools: A ‘More Books’ campaign, demand driven acquisition, and Reading Lists @ Liverpool.

The ‘More Books’ campaign allows students and staff to tell the Library which books, DVDs, CDs and music scores it needs to buy to help them study. Users can then request additional resources via a suggestion page to supplement the two million books, 500,000 contemporary electronic books and 44,000 electronic journals already held across the two libraries.

The Library is also offering more than 45,000 additional ebooks across all disciplines for students and staff to browse. The demand driven acquisition initiative means that all the ebooks are instantly accessible from the Library catalogue.

Reading Lists @ Liverpool meanwhile provides quick, easy access to the resources being recommended on students’ reading lists. Users can link straight through to the resources they need, and lecturers can recommend different types of material, including websites and videos as well as books.
ENHANCING THE STUDENT EXPERIENCE
To help students get the most from their time at University, we have set up ‘My Liverpool’ – a website dedicated to guiding students through a wide range of extra-curricular learning and life opportunities. The website helps students to learn new skills, explore opportunities for voluntary work and placement opportunities, and to actively engage with the student community.

OFFERING A NEW WAY TO STUDY
The Faculty of Humanities and Social Sciences has launched an innovative approach to flexible study, enabling students to choose between a Single Honours degree, a Joint (50:50) degree, or to study two subjects on a 75:25 basis, focusing 75% on one major subject and 25% on a minor subject.

The emphasis of Honours Select is on providing students with more flexibility and a greater range of multi-disciplinary skills, giving them a competitive advantage over their peers when entering the job market.

ENHANCING THE STUDENT EXPERIENCE
Engineering students taking part in the annual Formula Student competition – where teams compete to design and build a single-seater racing car – achieved 25th place out of 84 international universities in the 2013 competition.

INSPIRING THE ENGINEERS OF THE FUTURE
Run by the Institution of Mechanical Engineers, Formula Student is Europe’s most established educational motorsport competition and is designed to develop and inspire the next generation of enterprising young engineers.

INCREASING STUDENT SATISFACTION
Student satisfaction rates have risen to 98% in the annual National Student Survey. The result means Liverpool is now 3% higher than the sector average, jumping from 17th to joint 12th position in the Russell Group alongside Birmingham, Nottingham and the London School of Economics, and ahead of Leeds, Bristol, Warwick and Manchester.
TRANSFORMING THE CURRICULUM

Physical Geographers at Liverpool have revolutionised their undergraduate curriculum to make full use of the new facilities offered at our groundbreaking £23 million Central Teaching Hub. The team, led by Dr John Boyle and Dr Richard Chiverrell, have transformed their approach, offering students a more comprehensive and hands-on learning experience.

Every semester of the laboratory-based programme includes ten whole day exercises that all run concurrently, where students form research teams to compete in a weekly challenge which includes various practical exercises. Each exercise encourages teamwork as the groups develop their research strategy assisted by module leaders, present their findings, and discuss the outcomes. The programme is designed to develop students’ ability to work as a team as well as their research and strategy skills.

REWARDING EXCELLENT TEACHING

The University of Liverpool Teaching Recognition and Accreditation (ULTRA) Framework has been developed to ensure that all those who teach at the University have the opportunity to engage in effective Continuing Professional Development and gain recognition for high-quality teaching.

ULTRA is a staff-centred system that supports individuals to gain internal and external accreditation in learning and teaching and we are currently seeking approval of the scheme from the Higher Education Academy. Once achieved, this will ensure that any member of staff who is recognised through the ULTRA Framework will be entitled to gain a nationally recognised Fellowship.

Our Annual Learning and Teaching Awards also provide an opportunity for the University community to celebrate and share best practice of those staff who have made an outstanding contribution to pedagogy and the enhancement of the student experience.

Performance is assessed against a number of key priorities associated with learning and teaching at the University, including offering a student-centred approach, demonstrating excellence in teaching and research-led teaching, introducing initiatives which promote internationalisation, engaging external stakeholders in supporting employability, developing curricula, and offering opportunities for students to provide feedback on their teaching performance.
The University has been ranked in the top 150 universities in the world by the Academic Ranking of World Universities (ARWU), which is widely recognised as the precursor of global university rankings.

The University is ranked in the 101 to 150 group overall, and in the 10 to 14 group in the UK.

The annual publication, which is published by Shanghai Jiaotong University, ranks universities by six indicators, including alumni and staff winning Nobel Prizes and Fields Medals, highly-cited researchers, articles published in *Nature* and *Science*, articles indexed in major citation indices, and the per capita academic performance of an institution.

**WIDENING ACCESS**

A recognised UK leader in widening participation, we offer people of all ages and backgrounds the belief, financial means and routes they need to pursue degrees and research.

We are committing £9.8 million – 27.3% of our additional income – to support students from poorer backgrounds to apply to the University. This includes £2 million on fee waivers, £6.3 million on bursaries and scholarships, £1.25 million on outreach and £125,000 on student support.

The University exceeds its benchmarks for recruitment of students from Low Participation neighbourhoods and State Schools and Colleges and we have achieved the Buttle UK Quality Mark at ‘exemplary level’ in recognition of our commitment to young people in care.

In the last year alone we have provided a wide range of aspiration-raising activities to more than 8,000 young people, including welcoming 100 people on to our Scholars programme – for students from traditionally underrepresented backgrounds – and 57 people on our Go Higher programme, which is designed to support entry to the University for applicants who do not have formal qualifications.

We have also employed 40 apprentices across the University and have reached out to more than 25,000 primary school children through our Professor Fluffy programme, which is designed to raise awareness of further and higher education.
Our unique partnership with Xi’an Jiaotong University—a top 10 university in China—has been voted ‘Most Influential Sino-foreign Higher Education Institution in China’.

Based in the World Heritage city of Suzhou, near Shanghai, the University’s joint venture, Xi’an Jiaotong-Liverpool University (XJTLU) has grown student numbers to 8,000 since it opened in 2006 and has recently celebrated the launch of its new business school.

The International Business School Suzhou (IBSS) is the first business school in China to have a Thomson Reuters Financial Lab on site, offering students practice in dealing in equities, bonds and other financial products while providing a significant tool for research and analytics.

The launch of IBSS coincides with £28.6 million of investment to construct two new buildings for IBSS on the University’s south campus.

The University’s BEng Architecture programme is destined to be the first degree in China to gain approval from the Royal Institute of British Architects (RIBA) as an internationally recognised degree.

The course, which is taught at the University’s partner institution, Xi’an Jiaotong Liverpool University (XJTLU), has been awarded ‘candidate course for recognition’ status, which indicates that the programme is considered to have the potential to meet RIBA criteria.

The University has also partnered with the Singapore Institute of Technology and Singapore’s Home Affairs Ministry to offer the country’s first undergraduate degree in Criminology. The three-year programme includes modules in criminology theory and sociological research methods, and more specialist topics such as the policing system, youth crime and victimisation.

The partnership capitalises on the University’s long history of providing education in this area; our Department of Sociology, Social Policy and Criminology has been one of the leading centres in its field for more than 100 years and is committed to using social science as an evidence-based discipline to inspire social reform.
**CULTIVATING OUR RESEARCH LINKS WITH INDIA**

10 fellowships have been awarded to researchers from India to enhance links between the University and world-renowned Indian institutions.

The Fellowship programme offers opportunities for outstanding early to mid-career researchers to strengthen their experience of research and teaching in an international environment.

Building on existing collaborations with institutions in Bangalore, Hyderabad, Kolkata and New Delhi, the University is looking to explore new partnerships by inviting the next generation of researchers to help create the foundation for a growing Liverpool-India Research Network.

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**SUPPORTING INTERNATIONAL STUDENTS**

The Hong Kong-based Tung Foundation has launched a ‘Tung Liverpool Scholarship’ for Hong Kong and Chinese students studying at the University.

Founded by the late CY Tung - father of Liverpool graduates, CH Tung and CC Tung - the Foundation supports social, cultural and educational causes.

The scholarship will provide an enhanced award to undergraduate or masters students studying on non-clinical taught programmes at Liverpool who have already been successful in their application to the Hong Kong Graduate Association Scholarship. It will also offer PhD candidates the opportunity to undertake research at the University.

The Tung Foundation will designate part of its donation towards a three-year matched-funding programme for donors in Hong Kong to encourage and maximise gifts to the University.
Our University is launching a new campus in London in September 2014. Based in the heart of the City on Finsbury Square, the campus will increase the number of students able to study for a research-led Russell Group degree in London and will enable us to bring the characteristic spirit of individuality, ingenuity and enterprise from our home city to the capital – for a uniquely Liverpool experience in London.

Close to the financial heart of London, the campus will offer postgraduate degrees in Architecture, Accountancy, Law, Psychology and Public Health, benefiting from accreditation with key professional bodies in the City.

We will be offering graduates, professionals and employers the opportunity to enhance their capabilities in one of the world’s most dynamic and inspiring cities and expect to have registered 1,000 students within five years.

This new venture in London reinforces our position as a truly global university, with our Chinese partner institution, Xi’an Jiaotong-Liverpool University (XJTLU) near Shanghai, and an increasing number of international students being welcomed to our UK campuses each year.
We are one of the top 20 universities in the UK targeted by leading graduate employers and we are also one of the top 10 employers of Liverpool graduates in the region. Our programmes challenge students to equip them for their career with an emphasis on problem-based learning, placement opportunities, comprehensive academic and personal support, and an active extra-curricular programme.

We help to create the leaders of the future.
OUR STUDENTS
GRADUATE TO GREAT THINGS

We have a global alumni network of more than 180,000 and many of our graduates have gone on to occupy senior positions in business and public life both within the UK and internationally. Our successful graduates include (l-r); Dame Stella Rimington, former Director General of the UK’s National Security Service, MI5; Sir Maurice Flanagan KBE, Executive Vice-Chairman of Emirates Airline and Group; Dr Lawrence McGinty, ITN Science and Medical Editor; Sir Robin Saxby, Chairman Emeritus of ARM Holdings; Professor Averil Mansfield CBE, Chair of the British Medical Association Board of Science; Dr Sanjay Jha, Chief Executive Officer of GlobalFoundries and former Chairman and Chief Executive Officer of Motorola Mobility; Philip Clarke, Chief Executive Officer of Tesco; Dr Lewis Booth CBE, Former Executive Vice-President and Chief Financial Officer of Ford Motor Company; Keith Williams, Chief Executive of British Airways; and Carol Ann Duffy CBE, Poet Laureate.
Our Graduate to Merseyside service has placed 429 graduates in paid internships in the local area since its inception in June 2010. Offsetting the costs of employing a graduate for the placements is a high-quality graduate recruitment and placement service for businesses of all sizes across Merseyside and the wider region.

Internships vary in length, but many develop into permanent positions. The service benefits organisations by helping to increase their competitiveness and productivity and also provides an important boost for the local economy. The University’s placement team works with local organisations to run ‘insight’ days that enable current students to gain exposure of a particular company or industry during the course of their studies. The team also organises opportunities to undertake international placements, giving students a chance to gain valuable work experience while also introducing them to new cultures.

Our Careers & Employability Service has been ranked second for student usage in the annual UK Graduate Careers Survey with The Times. The survey, which involved face-to-face interviews with more than 17,000 final-year students from 30 of the UK’s leading universities, revealed that 70% of our students use this service, placing us second in the country. Dr Paul Redmond, Director of Employability and Educational Opportunities, said: “The team builds close links with top graduate recruiters, and rankings like this clearly demonstrate the importance of the service to our students.” 86% of our graduates are currently in employment or further study, with 76% of those in work employed in graduate-level jobs.

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To prepare students for the job market, we have introduced a programme of ‘Graduate Boot Camps’. Aimed at new leavers, the boot camps provide opportunities for networking with employers while developing a range of high-demand employability skills.

We have invested £2 million in a unique internship programme to give students access to local, regional and national employers, while work placements with Fortune 500 companies at Suzhou Industrial Park in China are also available to our students, with pastoral support provided by our partner institution, Xi’an Jiaotong-Liverpool University.

The University’s online alumni-student mentoring scheme, which pairs current students with alumni to support their personal and professional development, is now benefitting more than 100 students.

The programme, which is coordinated jointly by our Philanthropy and Alumni Relations team and our Careers & Employability Service matches students with an alumni mentor for one academic year.

The relationship gives students an insight into the changing employment market, helps to enhance their employability skills, and enables the mentor to provide information to their student about the particular field that interests them.

University of Liverpool Management School MBA graduate Rahul Pushp has won £20,000 in the Santander Universities Entrepreneurship Award. His winning business plan was to provide electricity to developing countries by harnessing solar renewable energy.

A group of Liverpool students have also been awarded scholarships from Santander to study outside of Europe during their degree programme. The Santander Universities Global Division works with universities in 16 countries to enable scholarship recipients to complete part of their degree in North America, South America, Australia or Asia. The aim is to foster internationalisation and to promote the transfer of knowledge between institutions, as well as to give a financial boost to entrepreneurs and researchers.
FOSTERING A CULTURE OF RESEARCH EXCELLENCE

The University is ranked second in the sector and the Russell Group for projected postgraduate research rates, according to a report from the Higher Education Funding Council for England (HEFCE). Projections show that 86.3% of Liverpool Home/EU students who started their research degree in 2010/11 are expected to qualify within seven years, compared with a sector average of just 72.9%.

INVESTING IN LIVERPOOL SCIENTISTS

The University will support the next generation of environmental scientists as a major partner in a Government award to fund more than 1,000 PhD students across the country. Liverpool is participating in two of the 15 Doctoral Training Partnerships awarded nationwide by the Natural Environmental Research Council (NERC), the Government agency for funding and managing research, training and knowledge exchange in the environmental sciences. The scheme will see up to 26 PhD students join the University each year for the next five years.

Meanwhile, the Engineering and Physical Sciences Research Council has given more than £1.5 million in funding to the University to support postgraduate training through Doctoral Training Grants, reflecting the University’s strong reputation in nurturing research excellence. The investment underlines the UK’s commitment to quality postgraduate research and training and will help to drive growth and secure the country’s future as a leading science and engineering nation with a wealth of skilled people who are able to tackle global challenges.
"I’m sure you’ve heard lots about Liverpool, but like everything you have to see it to believe it. Recently voted on Trip Advisor as the best nightlife in the UK and in the top 10 world cities 2014 according to Rough Guide, the 70,000 students in Liverpool are the heart of the city."
Sam Butler, Guild President

"The city is very vibrant. It is multicultural and there are loads of places to visit so you’ll never get bored."
Koushan Kourantoo, Student Ambassador for Iran

"The University was my second home. The experience - right from the first interview in India until my last day - was simply fantastic."
Sanket Khanolkar, (MBA Entrepreneurship 2008) - Alumnus Ambassador for Mumbai

"Even though I studied online from home, I really feel part of this University. Coming here to graduate was such a reward. It’s like coming home."
Frederik Duchi, (MSc Software Engineering 2013)

"We are at the heart of one of the UK’s most dynamic and creative cities."

Image: Cityscape of Liverpool with the iconic liver buildings in the background.