PROFILE

Enquiring minds, inspiring teaching, groundbreaking research
Contents

RESEARCH
2–3
Academic expertise and creative connections

4–5
Quantum technology: the key to secure communication?
Tackling security risks with new technology

6–7
Recreating the ‘lost’ chapel of Westminster
New light cast on a Mesolithic mystery

8–9
Wings over West Africa
Funding boost in our battle against tropical disease

10–11
The human cost of the migrant crisis

TEACHING AND LEARNING
12–13
Enhancing our teaching environment

STUDENT EXPERIENCE
14–15
Challenging our students

COMMUNITY
16–17
Active partners

£87.4m
£87.4m research funding in 2015/16

RANKED 31ST
Ranked 31st in the world for Arts and Humanities, 77th for Social Sciences and 79th for Life Sciences

800 STUDENTS
We welcome 800 students from international university partners who visit York for exchanges, summer schools and short courses each year

989 RESEARCH PROJECTS
In the academic year 2015/16 we delivered 989 research-related projects with business

Design: Ball Design & Branding
Photos: Evenki shaman (after Witsen 1785, 655), (Stock, John Houlihan, St Stephen’s Chapel Westminster Project/Anthony Masinton, Eleanor Morris, David Rippin, Shutterstock, Mark Woodward
Cover photo: Mark Woodward

HIGHER EDUCATION – BUSINESS AND COMMUNITY INTERACTION SURVEY (HEBCIS) 2015/16
Welcome to the University of York Profile, a publication which provides an introduction to our impact on the national and international stage.

In 2017, we were ranked 28th in the world in a Times Higher Education ranking that recognises the world’s most international universities. We welcome students and staff from across the globe. We also actively pursue relationships with international research teams, in the firm belief that cross-boundary knowledge sharing is the key to tackling some of our most complex global challenges.

Our international outlook is further underlined by more than 116,000 York alumni who are engaged in almost every conceivable profession in more than 100 countries around the world and are a powerful advocate of the transformational value of a York education.

Closer to home, we contribute to the city of York’s economic resilience and success and we are a key driver of national regeneration efforts across the north of England.

We are forging ahead with a multi-million-pound investment programme across our campus, creating teaching and learning spaces fit for world-leading academic endeavour in the 21st century.

But our contribution is more than monetary. A university education is a common good that benefits us all. It breaks down barriers and protects us from extremism, intolerance and prejudice. Our research supports that mission. Climate change, poverty, disease and mass migration are global issues that can only be eased by the collaborative expertise of researchers from world-leading universities such as York.

This Profile publication demonstrates that we remain committed to our role as a leading centre of excellence for teaching, learning and life-changing research. It is published at a time when, more than ever, communities around the world need evidence and expertise, rather than prejudice and populist rhetoric.

Professor Koen Lamberts
Vice-Chancellor

150 COUNTRIES
150 countries are represented in our 16,000-strong student population

RANKED 28TH
York is ranked 28th in a league table of the world’s most international universities
TIMES HIGHER EDUCATION THE WORLD’S MOST INTERNATIONAL UNIVERSITIES 2017

95%
95% of our students enter work or further study within six months of graduating
HESA, DESTINATION OF LEAVERS FROM HIGHER EDUCATION SURVEY 2015

TOP 10
A top ten university for research impact
EXCLUDING INSTITUTIONS WHICH HAVE SUBMITTED FEWER THAN FOUR UNITS OF ASSESSMENT TO THE RESEARCH EXCELLENCE FRAMEWORK 2014
Now is the time for academic experts. In a turbulent world facing major political, environmental and societal upheaval, the case for objective, thoroughly researched academic insight has never been more compelling.

From the depths of our precious marine environments to the skies above the world’s most polluted cities, our researchers are seeking answers to some of the globe’s most pressing questions. We are also tracking major societal shifts and shaping new perspectives on international history and culture. Much of this research is undertaken in partnership with collaborators around the world. Our research is organised into seven themes which demonstrate our academic strengths.
EXPLORE OUR RESEARCH THEMES

Creativity
Our research considers the nature of creativity and the creative process across linguistic, cultural, aesthetic and cognitive dimensions. Working at the convergence of technology, digital games and interactive media, with leading partners in the creative economy, we can deliver new experiences to provoke, inform and entertain for the wider benefit of society.

Culture and communication
From prehistory to the present, our researchers explore every kind of cultural activity, product and practice, alongside every aspect of communications. They are developing new intellectual tools to make sense of human thought and behaviour, and are advancing and challenging how we understand the world.

Environmental resilience and sustainability
We work on food scarcity, energy security, climate change, pollution and new generation biofuels. Our interdisciplinary research is providing the evidence base for policymakers to address the key global challenges facing ourselves and our planet, and shape a more sustainable future for us all.

Health and wellbeing
Our global reputation in biomedicine, health science, economics and the medical humanities begins with the fundamental understanding of health and disease in the past and the present, and progresses to evidence-based decision-making about future healthcare policies and therapies.

Justice and equality
Fairness, inclusivity, equality and welfare are policy fields where our research sets the political agenda. These areas also define our values and approach to meeting the social challenges of our time at national and international level.

Risk, evidence and decision making
In an increasingly complex world, our research is impacting on how decisions on risk are made and how they are shaped by technological, social and cultural factors. By drawing on our understanding of these factors, we can provide government and industry with better risk models and help influence policy.

Technologies for the future
Our researchers are developing novel technologies, processes and materials with the potential to transform the economic, environmental and social landscape. From precision plasma manufacturing to plants that can devour toxins, fundamental research is being rapidly translated into real-world solutions.
Our researchers are at the cutting-edge of efforts to develop secure, encrypted communications capable of protecting our digital networks from the growing threat of cyberattack. A key focus for researchers at York is the development of Quantum Key Distribution (QKD), a technology which improves digital security by distributing encryption keys to protect communications. QKD is one of the first quantum information technologies with market potential. A UK network to demonstrate applications of QKD technology is currently under development between Bristol, Cambridge and BT’s research base at Adastral Park, near Ipswich. The Quantum Communications Hub project involves collaboration with international partners including Toshiba, the European Telecommunications Standards Institute (ETSI) and Swiss-based quantum specialists ID Quantique (IDQ).

Security of information, in transit, in storage and in the future, is of crucial importance for everyone, from individuals and companies through to institutions and government.”
Professor Tim Spiller, Director of the York Centre for Quantum Technologies

Quantum technology: the key to secure communication?

The York-led £24m Quantum Communications Hub is a partnership of eight universities, plus private and public sector organisations, funded by the UK National Quantum Technologies Programme.

Our researchers are at the cutting-edge of efforts to develop secure, encrypted communications capable of protecting our digital networks from the growing threat of cyberattack. A key focus for researchers at York is the development of Quantum Key Distribution (QKD), a technology which improves digital security by distributing encryption keys to protect communications. QKD is one of the first quantum information technologies with market potential. A UK network to demonstrate applications of QKD technology is currently under development between Bristol, Cambridge and BT’s research base at Adastral Park, near Ipswich. The Quantum Communications Hub project involves collaboration with international partners including Toshiba, the European Telecommunications Standards Institute (ETSI) and Swiss-based quantum specialists ID Quantique (IDQ).
Tackling security risks with new technology

Security decisions are always uncertain. Should this passenger be allowed to board the plane? Is this person an innocent citizen or a terrorist? Will the next violent crime occur here or there?

Technological advances, such as the algorithmic analysis of big data, offer new ways of acting in the face of uncertainty – from visualising risky subjects from their data footprint to predicting crimes. New technology does not completely eradicate uncertainty or remove the need for a responsible decision from a human being. But it does shape the way decisions are taken and it adds to the factors taken into account by security services before they choose to act – or not.

Researchers in our Departments of Politics and Psychology are working with organisations such as security and immigration authorities to understand how the increasing use of technology is influencing their decision-making processes.

“This research explores how new technologies are changing the way our security organisations deal with risk.”

Dr Alexandra Hall, Department of Politics
Recreating the ‘lost’ chapel of Westminster

The once lavish St Stephen’s Chapel – the forerunner to today’s House of Commons debating chamber – was reduced to smoking ruins in a fire which swept through the Palace of Westminster in 1834.

“We want to generate a sense of wonder and amazement about a stunning medieval royal chapel that is now lost, but whose influence certainly lives on.”

Dr John Cooper, Department of History
Now the chapel has been brought back to life in colourful 3D images created in a pioneering collaborative project which combines insights from archives with the latest digital technology. The project was discussed at conferences around the world, featured in a BBC documentary, and was the subject of an exhibition in the Houses of Parliament. Co-investigator Professor Tim Ayers, Department of History of Art, said: “This project has been a wonderful opportunity to be able to research this richly documented palace chapel, at the very heart of royal government.”

With the help of funding from the Arts and Humanities Research Council, researchers from our Departments of History and Electronics are now working with the Houses of Parliament to recreate the sounds of heated political debate in the Chamber in the late 18th century. The acoustic models will form part of a further public exhibition in Westminster Hall in summer 2018.

New light cast on a Mesolithic mystery

Our researchers deployed cutting-edge technologies and forensic approaches to understand how our hunter-gatherer ancestors used flint tools to create headdresses from red deer skulls.

The headdresses have stirred the public imagination since they were first discovered in the 1950s at Star Carr in North Yorkshire, the most important Mesolithic archaeological site in Europe. Further deer ‘frontlets’ were found in 2015. The artefacts were fashioned from the upper part of a male red deer skull with the antlers attached. Using 3D laser scanning techniques, the research team analysed marks left on the skull, revealing new complexities about their design and the processes used to create them 11,000 years ago. It is thought the headdresses could have been used as part of shamanic rituals, or as a hunting disguise.

Our researchers deployed cutting-edge technologies and forensic approaches to understand how our hunter-gatherer ancestors used flint tools to create headdresses from red deer skulls.

The headdresses have stirred the public imagination since they were first discovered in the 1950s at Star Carr in North Yorkshire, the most important Mesolithic archaeological site in Europe. Further deer ‘frontlets’ were found in 2015. The artefacts were fashioned from the upper part of a male red deer skull with the antlers attached. Using 3D laser scanning techniques, the research team analysed marks left on the skull, revealing new complexities about their design and the processes used to create them 11,000 years ago. It is thought the headdresses could have been used as part of shamanic rituals, or as a hunting disguise.

These headdresses are incredibly rare. Star Carr is the only site in Britain where they have been found.”

Professor Nicky Milner, Department of Archaeology

These headdresses are incredibly rare. Star Carr is the only site in Britain where they have been found.”

Professor Nicky Milner, Department of Archaeology

The Star Carr headdresses featured in a set of eight stamps issued by Royal Mail depicting sites and artefacts from UK prehistory

Depiction of an Evenki shaman wearing an antler headdress
Traffic fumes, industrial emissions and smoke from roadside rubbish fires and indoor cooking stoves are fuelling a growing air pollution problem over West Africa’s fast-developing coastal cities.

Our atmospheric chemists are part of an international team of scientists studying the extent of the problem in a major €10m EU-funded project. As part of the work, the York team took to the skies over the capital cities of Ghana, Ivory Coast, Togo and Benin in specially adapted monitoring aircraft. Data gathered from the flights will provide accurate air quality baseline figures which will include projections for five, ten and fifty years into the future. The data will also take into account how trends such as population growth could affect air quality. It will inform future decisions taken by governments and development agencies about ways to tackle the crisis. The research is part of the Dynamics-Aerosol-Chemistry-Cloud Interactions in West Africa (DACCIWA) project. Led by the Karlsruhe Institute of Technology in Germany, the team includes scientists from France, Germany, Switzerland, Ghana, Nigeria, Benin and Ivory Coast.

“Cities all over the world have serious air pollution problems. Our research will underpin efforts to tackle this issue, especially as countries continue to develop and populations grow.”

Professor Mat Evans, Department of Chemistry
York’s work at the forefront of a worldwide drive against leishmaniasis, one of the world’s most lethal tropical diseases, has reached an important milestone following major funding announcements.

Already supported by Wellcome and the Medical Research Council, our studies into leishmaniasis will also now benefit from grants from the UK government’s new Global Challenges Research Fund. Leishmaniasis affects the lives of hundreds of thousands in some of the poorest areas of the developing world. The new funding will support research to examine why some strains of the parasite found in Brazil are resistant to the only available oral drug used to treat the condition.

A second project will explore why people respond differently to treatment across different countries. It will also introduce internet-based ‘digital pathology’ to share clinical data between countries.

Paul Kaye, Professor of Immunology at Hull York Medical School, said: “By understanding why some patients respond to treatment and others do not, we can make better use of the drugs we have available and reduce the costs and suffering associated with treatment failures.”

The research projects involve collaborations with international partners including the Federal University of Piauí and the University of São Paulo in Brazil; the University of Sri Jayewardenepura in Sri Lanka, and the Institute of Post Graduate Medical Education and Research (IPGMER) in India.

“350 million people are at risk of contracting leishmaniasis, a disease that kills over 20 thousand people every year and leaves many hundreds of thousands with stigmatising scars. It has severe costs in both health and economic terms.”

Professor Jeremy Mottram, Department of Biology

Spread by sand flies, leishmaniasis affects the health of people in over 98 countries
The human cost of the migrant crisis

Working on the Greek island of Lesbos and in Sicily, Italy, our researchers highlighted the limited efforts by authorities to identify the men, women and children who drowned while trying to cross the Mediterranean.

As a result, many families are left in limbo, never knowing the fate of their loved ones. The team drew up policy recommendations to help states and regional bodies develop a more systematic approach to identification.

Another research team is giving voice – through personal testimonies, forensic analysis and film – to people fleeing their homelands. This project has a particular focus on the plight of migrant and refugee children. Drawing on their research, our experts contributed to a major UNICEF campaign urging world leaders to put the rights and safety of refugee and migrant children at the heart of policy agendas. Dr Simon Parker, Director of York’s School of Social and Political Sciences, said: “Our research confirms that by denying children safe and legal routes to escape conflict zones, European states are contributing to the loss of more lives at sea and trapping children in unsafe and harmful environments.”
Discarded life jackets on a Greek beach: over 5,000 people died crossing the Mediterranean in 2016. Our research highlighted missed opportunities to collect photographs or clothing which could identify the people who lost their lives.

Behind the visible catastrophe of shipwrecks and deaths in the Mediterranean is an invisible catastrophe in which bodies are found and not enough is done to identify them.”

Dr Simon Robins, Centre for Applied Human Rights
WE ARE IN THE
TOP 3
RUSSELL GROUP
UNIVERSITIES
FOR TEACHING AND
ACADEMIC SUPPORT
2016 NATIONAL STUDENT SURVEY

Enhancing our
teaching environment

Fitted with the latest digital technology, the Spring Lane Building is an impressive addition to our teaching and learning facilities.

Greg’s Place, a new landscaped, lakeside area created with support from former University Chancellor Greg Dyke.
The academic experts behind York’s world-changing research are also the designers and providers of our teaching programmes.

We have refreshed our entire curriculum. Every programme has a concise set of ambitious outcomes and a carefully planned ‘learning ladder’ of study. This leads students to the most challenging and exciting parts of the subject, while developing skills and competencies that will help them stand out from the crowd in the graduate job market.

**Bricks and mortar**

We have invested millions in construction and refurbishment to ensure that our teaching and learning spaces are comfortable, engaging and equipped with state-of-the-art technology.

**Preparing our students for the future**

York students get a head start in the jobs market through a distinctive development programme which runs alongside their academic studies. Created in partnership with top graduate employers, York Futures encourages students to identify and develop their strengths and interests.

---

**RECENT DEVELOPMENTS ON CAMPUS**

**Biology Building**

The £16m Biology Building adds three new floors of teaching and laboratory spaces.

**Spring Lane Building**

The £13.8m Spring Lane teaching and learning building features a 350-seat auditorium and 26 seminar rooms.

**Environment Building**

The £12.5m Environment Building houses laboratories, plus teaching and learning space. It also features a living wall, a solar panel system and an outdoor eco garden.

**Piazza Building**

Work has started on the Piazza Building, home to a 350-seat auditorium and a lakeside restaurant.

**Greg’s Place**

Greg’s Place is a vibrant new community hub at the heart of Campus West for art exhibitions, student performances and pop-up events.

---

The Environment Building, one of the most distinctive additions to our Campus West site
Challenging our students

Great minds thrive at York. We challenge our students to think independently and make the most of our amazing range of global study opportunities, work experience, clubs, societies and outstanding sports facilities.

Exploring new horizons
Students on our flagship International Study Centre programme headed to universities in South Africa and the USA. Hosted by the University of Cape Town, George Washington University in Washington DC and Mount Holyoke in Massachusetts, the study centres combined excursions with seminars and workshops exploring entrepreneurship, cultural and political issues. Further study centres are planned for Russia, China and the USA.

Northern fashion on the catwalk
American Vogue editor Anna Wintour featured in a student fashion show which raised over £30,000 for charities supporting refugees. The Northern Youth fashion show also included a talk by Guardian editor Katharine Viner. The event, organised by campus publication Hard magazine, showcased the collections of young designers from all over the country.

2,600 students worked over 57,000 hours on volunteering projects in 2016.
In the news
As home to some of the UK’s most vibrant student media, York offers great opportunities for fledgling journalists to get involved in a range of print, TV and radio outlets. Students who worked at Nouse, one of our award-winning student newspapers, have gone on to work at The Times, The Guardian and The Independent.

At the heart of the debate
We are also home to York Union, a student-run society which runs lively panel debates and talks on issues ranging from Brexit to press regulation. Past speakers include Jon Snow, Shami Chakrabarti, Alastair Campbell and Sir Robert Winston.

STUDENTS LAUNCH NEW PROJECTS WITH YUSTART

Student films, concerts and sports events are just some of the projects backed by YuStart, the University crowdfunding website dedicated to supporting student projects. With student initiative and help from the YuStart site, our student rowers added a new boat to their fleet and our Theatre, Film and Television students developed new film projects, including a sci-fi thriller and a documentary about the life and death of pets. Student astronomers created a scale model of the solar system, with model planets and information boards on a celestial walking trail across campus.
Events to educate, entertain and inspire

Our flagship Festival of Ideas continues to grow in popularity. The 2016 event attracted nearly 19,000 people to 188 events including talks, performances, screenings and workshops on subjects ranging from Bach to Brexit. The event involves 70 city and national partners. We also:

- hosted 180 open lectures on subjects as diverse as the Battle of Waterloo and Wittgenstein
- explained some of our most challenging and thought-provoking research in 15-minute illustrated talks at the popular annual YorkTalks event
- worked with the York Museums Trust to take research to York city centre at Yornight, a free evening of fascinating talks and hands-on activities attracting 6,000 people.

Students offer a helping hand

Established over 22 years ago, the York Students in Schools volunteering project continues to grow, with a 27 per cent increase in student involvement in the last three years. The award-winning scheme provides a valuable helping hand in the city’s classrooms, while giving students an insight into teaching as a career.

As a leading academic and research institution, we’re keen to share our expertise and knowledge for the benefit of people living beyond the boundaries of our campus.
Experts in the city
A collaborative research project with City of York Council is gathering environmental data to improve our understanding of the links between the environment and health. Academics from across the University are also working with North Yorkshire Police on a research project which aims to improve training and interagency working in relation to policing and mental health issues.

A good place to do business
We were one of the first universities to locate businesses alongside academic centres of expertise on campus. York Science Park is now home to more than 100 organisations ranging from start-ups to global enterprises, mainly in the creative, digital media, IT and bioscience sectors.

A lifetime of learning
The University’s Centre for Lifelong Learning offers a wide range of short courses including psychology and creative writing. We have also launched a programme of free Massive Open Online Courses (MOOCs) in topics ranging from chemistry to crime and punishment.

Boosting biorenewables
Our academics are at the centre of efforts to establish Yorkshire and the Humber as a thriving centre of bio-based innovation. BioVale is an initiative to build the Yorkshire and Humber region’s capability and reputation as an innovation cluster for the bioeconomy. The Biorenewables Development Centre (BDC) offers expertise and support to help companies explore or scale up bio-based processes and products, notably running a funded programme for regional businesses.

SEEING STARS
Our Astrocampus observatory brings the Universe closer to home for thousands of Yorkshire schoolchildren and local residents. Kitted out with state-of-the-art telescopes, the Campus West observatory is regularly open to the public and community groups for stargazing events. The team also runs astronomy outreach events, including a mobile planetarium, which is taken to schools and community groups.

Double Olympic gold medallist Dame Kelly Holmes officially opened our new £2m athletics track. Built in partnership with City of York Council, it features an eight-lane running track, pavilion and covered seating for 500 spectators.