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NORTHUNBRIA UNIVERSITY NEWS ISSUE 18



FLIPFLOPI SETS SAIL

Boat made entirely of plastic waste raises awareness of plastic pollution in the oceans.

Turn to page 7 for the full story





new £6.8m Architecture studios. Turn to pages 12-13 to read more

urn to pages 12–13 to read more



BREXIT EXPERTS HAVE THEIR SAY

Northumbria academics discuss what a post-Brexit Britain might look like.

Turn to pages 18-19



New dawn for green research

As global demand for electricity is constantly increasing, the world is looking for innovative new ways to power devices and vehicles. More than 40 billion smartphones, tablets, fitness trackers and other portable devices, which need to be recharged frequently, will be in use by 2024. This means there is an urgent push to find smart, green solutions for these devices that will convert energy to power them wherever and whenever they are being used.

Recognising the need to find new, sustainable ways to power these devices, the Engineering and Physical Sciences Research Council has awarded £5.2 million to a Northumbria's reputation for renewable energy research has been confirmed with the announcement that the University will lead training for the UK's next generation of researchers in this field.

consortium led by Northumbria University to open ReNU, a new national Centre for Doctoral Training in renewable energies. This will train the next generation of PhD students looking to develop scientific careers in this area. Over the next five years, more than 60 PhD students will undertake their doctoral training in the centre, working with experts from Northumbria, Newcastle and Durham universities. Their aim is to create new materials that can be mass-produced, making them sustainable and inexpensive to use. Global businesses including Airbus, Siemens and Shell are

keen to be involved as these new technologies could be used in their future products. As such, they have also made investments in ReNU, taking the total value of the project to £11 million.

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"RENU WILL ENABLE DOCTORAL RESEARCHERS TO DEVELOP THE ENTREPRENEURIAL SKILLS REQUIRED TO DRIVE UK PRODUCTIVITY IN THE AREA OF CLEAN GROWTH."

PROFESSOR ANDREW WATHEY CBE



Northumbria University NEWCASTLE

IN THIS EDITION SPRING 2019



Northumbria University NEWCASTLE

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University beats the competition

Northumbria University and Northumbria Police have joined forces in an exciting partnership to help educate the next generation of police officers.

The University will jointly deliver the new Police Constable Degree Apprenticeship (PCDA) – funded through the Apprenticeship Levy – which will give new recruits the theory and practice developments required for modern–day policing. From 2020 the entry routes into policing will change nationally. All successful applicants who don't have a degree level qualification will work towards achieving a degree apprenticeship in policing alongside their training at no cost to themselves. The University's world-class experts in crime, forensics, business and law will work in partnership with Northumbria Police to cover all areas that are critical to effective policing in the 21st century.

Professor Peter Francis, Northumbria University's Deputy Vice–Chancellor and an internationally–noted criminologist, said: "Northumbria University is internationally acclaimed for our provision in criminology, forensics, law and policing, while Northumbria Police is committed to delivering an outstanding service in community policing. Not only will this exciting new initiative transform the lives of students on the new programme, the benefits of it will be felt in communities in the North East and beyond for many years to come." Officers will study at Northumbria University's campuses from March 2019. Turn to page 9 for a full interview with Professor Francis about the PCDA and other degree apprenticeships offered by Northumbria.



northumbria.ac.uk/police



NORTHUMBRIA POLICE CHIEF CONSTABLE WINTON KEENEN AND NORTHUMBRIA UNIVERSITY DEPUTY VICE-CHANCELLOR PROFESSOR PETER FRANCIS.



LEADING THE GREEN REVOLUTION

"IMAGINE A WORLD IN WHICH THERE ARE BILLIONS OF INTERCONNECTED MOBILE DEVICES – AND A WORLD WITH NEW MODES OF TRANSPORTATION, SUCH AS UNMANNED ELECTRIC AEROTAXIS. NOW IMAGINE THE CHALLENGE OF PROVIDING POWER TO THESE DEVICES. IT QUICKLY BECOMES UNMANAGEABLE. WE NEED TO FIND NEW WAYS TO EFFICIENTLY CONVERT AND STORE ENERGY AT THE POINT OF USE."

DR NEIL BEATTIE

Continued from pg. 1

Dr Neil Beattie, Professor Glen McHale, Dr Guillaume Zoppi and Dr Vincent Barrioz from Northumbria's Department of Mathematics, Physics and Electrical Engineering, were instrumental in putting together the successful bid to run the centre. They are currently working to develop a specialist paint that could be sprayed onto cars or rooftops to generate solar energy at any location. Dr Beattie describes the long-term challenge of powering billions of devices as "unmanageable". He said the continued development of new devices whether they be unmanned electric aerotaxis (flying taxis), or medical technologies that monitor and treat patients at home rather than in hospital, means "it is imperative to find new ways to efficiently convert and store energy at the point of use."

convert and store energy at the point of use." Northumbria, Newcastle and Durham universities already work together as part of the £1.8 million North East Centre for Energy Materials (NECEM) where they are researching and developing new high-performance materials that will improve efficiency in energy generation, storage and transmission. Professor Andrew Wathey, Vice-Chancellor and Chief Executive of Northumbria University said that their breadth of expertise across the energy sector was one of the key strengths of the consortium. "ReNU will enable doctoral researchers to develop the entrepreneurial skills required to drive UK productivity in the area of Clean Growth, one of four grand challenges identified by the Government in its Industrial Strategy." ReNU further cements Northumbria's reputation for research excellence and follows recent announcements of doctoral training partnerships funded by the Natural Environment Research Council, the Economic and Social Research Council and the Arts and Humanities Research Council focusing on global change; social sciences and arts and humanities research.

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DISCOVER MORE



DR NEIL BEATTIE

NEWS

TACKLING TOMORROW'S CHALLENGES

At Northumbria our academics are working together to make a real and tangible impact on the world. Through their ground-breaking research they are, among other things, fighting disease, helping people live longer and healthier lives, and protecting the planet. They ask how we can shape the world we live in by reflecting on the past, understanding the present and planning for the future. Throughout 2019 we will be showcasing examples of this remarkable work through *Northumbria University News* – highlighting research which is literally tackling tomorrow's challenges head on.

In this issue we explore how human digital design could transform the way buildings are constructed in the future, and how technology is used to communicate information during outbreaks of infectious diseases.

SMART SENSORS

Mould, mildew and damp cause misery for thousands of people in homes across the UK, and cost housing associations, landlords and homeowners millions of pounds a year in repairs. But researchers at Northumbria University have come up with a solution which could lead to a change in how homes are designed in the future – making mould a thing of the past.

Over the last year, Northumbria academics, along with partners from the Building Information Modelling (BIM) Academy and the National Energy Foundation, have been working with local housing organisation Your Homes Newcastle on the Smart Connected Buildings project to find out more about how its customers use their homes. With permission from householders, sensors were placed in seven apartments, monitoring factors such as electricity usage, room temperature, humidity, light and movement. The data gathered will shed light on how people really use the buildings they live in, as well as recommending changes which would make people more comfortable in their homes. It could even have an impact on how buildings are designed in future, ensuring they better reflect the needs and day to day living requirements of householders.

The project was coordinated by Dr Kay Rogage, a Research Fellow in Digital Living at Northumbria University and active member of the University's BIM Academy Research Team. As she explains, "One of the benefits of this system is that it can be customised, so for example an alert could be set up to notify an owner or tenant when the humidity in an individual flat or room goes above a certain level. The data would also be displayed on an online dashboard so patterns and potential issues could be identified. For the landlord this would mean being able to spot the conditions which lead to mould and mildew early on, meaning changes can be made to stop the problem developing. This would not only save money but also significantly reduce the number of complaints and provide more comfortable living conditions for tenants."

The project has been funded by Innovate UK, part of the national funding agency UK Research and Innovation. The team involved now hope to source additional funding to develop the prototype into a commercially available software which could be used by housing associations, property owners, developers and others working within the housing and building sector.

Graham Kelly is Director of the BIM Academy, an innovate joint venture between Northumbria and Ryder Architecture, which is helping to bring construction into the digital age and inspire greater collaborations. Speaking about the Smart Connected Buildings project he said: "Building Information Modelling has been successfully used in the design and construction of buildings for some time, but buildings' owners and occupants still don't have any way of measuring how their building is performing once it is complete. Buildings can create huge amounts of data once they are in use and the Smart Connected Buildings project aims to collect this and use it to generate advice on how to optimise the performance of a building once complete and inform future design and construction.'



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Multiple Service on How to optimise

To generate Advice On How to optimise

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THE PERFORMANCE OF A BUILDING ONCE COMPLETE AND INFORM FUTURE DESIGN AND CONSTRUCTION."

GRAHAM KELLY

DIGITAL DISEASE PREVENTION

"THIS IS A SERIOUS PROBLEM **ESPECIALLY IN BRAZIL AND INDIA, TWO COUNTRIES** WHICH ARE AT **HIGH RISK OF INFECTIOUS** DISEASE OUTBREAKS, **WHICH ARE ALSO AMONG** WHATSAPP'S BIGGEST MARKETS."

> DR SANTOSH VIJAYKUMAR

The impact of fake news and sharing false information via social media, especially during political elections and major referendums like Brexit, has been well reported in recent years.

However, the effects of sharing misleading information on social platforms during a serious disease outbreak, is less widely known. Northumbria is leading new research into how the public responds to inaccurate information about infectious disease outbreaks received via popular messaging app, WhatsApp.

Social media channels give power to fake news and misinformation spreading quickly through communities and Dr Santosh Vijaykumar from Northumbria's Department of Psychology, recognises the massive threat posed by this, as it affects the ability of public health agencies to manage infectious disease outbreaks effectively.

"My specific interest in WhatsApp really emerges from how consistently it has been used as a catalyst to spread misinformation related to infectious diseases," Dr Vijaykumar explains. "This is a serious problem especially in Brazil and India, two countries which are at high risk of infectious disease outbreaks, which are also among

WhatsApp's biggest markets. "One of the most recent cases was that of the Nipah Virus outbreak in India, where a lot of misinformation spreading via WhatsApp posed enormous challenges to public health officials trying to manage the situation. Messages were circulating among communities suggesting that the outbreak was a corporate conspiracy, and that the flesh of chicken was a fertile host for the virus. These messages meant that people were reluctant to work with public health teams, putting their own health at risk.' More than 1.5 billion people

More than 1.5 billion people in over 180 countries use WhatsApp to stay in touch with their friends and family. The service is free to use and allows people to share messages, photos and videos with chosen individuals or groups. Dr Vijaykumar says:

"WhatsApp is very popular among older adults in India and previous psychology research has found that the misinformation effect is more pronounced in older adults than to those in younger age groups. This means that older adults are especially vulnerable to believing information that they are presented with."

In response to this threat posed by misinformation, WhatsApp - which is owned by Facebook created the WhatsApp Research Awards for Social Science and Misinformation. These awards provide funding for researchers to examine the implications of misinformation spreading on its platform and identify potential solutions to address this problem.

Dr Vijaykumar has been awarded US\$50,000 and is bringing together an international team of researchers from the Universities of Edinburgh and Georgia, the Health Systems Research India Initiative and Srishti School of Art, Design and Technology to work on this project.

Research began in January 2019 and it is expected that preliminary findings will be reported to WhatsApp in May 2019.

Dr Vijaykumar is a member of Northumbria's multidisciplinary team of academics researching digital living. The team includes experts from psychology, computing, architecture, design, business and engineering who are looking at the ways that digital technologies can revolutionise our lives and cities.

DISCOVER MORE

App <u>northumbria.ac.uk/tomorrow</u>

FROM L-R: DR KAY ROGAGE, MARK RILEY (YOUR HOMES NEWCASTLE), AND GRAHAM COULBY (BIM ACADEMY)

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6 NEWS

Tackling global challenges

Left: The Mekong River in Vietnam



"WE ARE LOOKING FORWARD TO GENERATING NEW UNDERSTANDING OF THE WAYS DELTAS ARE CHANGING AND WHAT CAN BE DONE TO PROTECT THEM."

PROFESSOR MATT BAILLIE SMITH

An ambitious five-year project, which aims to tackle some of the world's most complex development challenges, has been announced by national funding body UK Research and Innovation (UKRI). The project involves the creation of 12 Global Research Hubs, led by academics at UK universities, who will work with governments, international agencies, non-governmental organisations and community groups in developing countries. The Hubs will focus on some of the world's greatest challenges, from improving human health to generating sustainable forms of agriculture.

Academics from Northumbria are involved in two of the groups – the Living Deltas Hub and the Urban Disaster Risk Hub – demonstrating the University's growing research strength in both international development and disaster management.

The Living Deltas Hub aims to protect the future of communities living along river deltas. Although these areas account for just one percent of the world's landscape, they are home to more than half a billion people. Throughout history, river deltas have provided a safe, secure and fertile environment for generations of communities – from the Mississippi Delta in North America to the Ganges-Brahmaputra Delta in Bengal. But these landscapes, and the people living within them, are threatened by climate change, with estimates that between three and 13 million people could be displaced in Bangladesh alone by the year 2100 if sea levels continue to rise

as predicted.

With an extensive track record of working with river delta communities, experts from Northumbria's Centre for International Development will play a key role in the Living Deltas Hub. The University's Dr Oliver Hensengerth has carried out research into flooding in the Mekong Delta in Vietnam, and Professor Matt Baillie Smith is an expert on volunteering, activism and civil society, as well as Director of Northumbria's Centre for International Development. Professor Baillie Smith explained: "We are looking forward to working with colleagues in the Global South, and communities and organisations living across three deltas in Asia, to generate new understanding of the ways deltas are changing and what can

be done to protect them." Meanwhile, researchers from Northumbria's Disaster and Development Network are involved in the Urban Disaster Risk Hub, where they will be sharing their expertise in disaster reduction, sustainable development and resilience building. This Hub will work with international agencies to ensure disaster risk management is fully considered when planning cities in future, making them better able to withstand natural hazards such as floods, earthquakes or landslides. With cities around the world expanding rapidly, the amount of developed urban space is expected to increase by 60% by the end of the next decade. More than two billion city dwellers in low-to-middle income countries already live in areas threatened

by natural disasters, and this figure is expected to double by 2050 as cities grow and climate change increases the likelihood of extreme weather. The hub will focus on four major cities: Kathmandu, Istanbul, Nairobi and Quito, and will bring together UK and international scientists, civil society groups and a range of UN agencies to reduce disaster risk for some of the poorest citizens in tomorrow's cities.

All 12 Hubs have been funded through UKRI's Global Challenges Research Fund (GCRF), sharing a total investment of £200m between them. Find out more by visiting ukri.org and searching 'Global Research Hubs'.



Sailing the wave of change

In a unique bid to combat ocean pollution and climate change, a design expert from Northumbria University has helped create a boat made entirely from plastic rubbish collected from beaches and towns in Africa.

Simon Scott-Harden, from Northumbria's School of Design, is part of the team behind the Flipflopi, a traditional 'dhow' sailing boat made from plastic waste – including 30,000 flipflops - collected from Kenya's coast. The sailing boat recently successfully completed its twoweek maiden voyage, sailing from Lamu in Kenya to Zanzibar in Tanzania. The 500-kilometre expedition saw the dhow stop at communities along the way, as the crew engaged with local people to raise awareness of the problem of plastic waste.

Simon, a Senior Lecturer in Design for Industry, was invited to take part in the Africa-based Flipflopi project due to his expertise in product and material design, which he used to help bring the nine-metre long sailing boat to life. Working alongside a design engineer, the pair explored the best way of processing and shaping the plastic waste collected to create the vessel. which would traditionally be made from wood. "Every year 12.7 million tonnes of plastic enters our oceans; that's a rubbish truck full every minute," said Simon. "By 2050 there will be more

plastic in the oceans than there are fish (by weight), so it's vital we raise awareness of this issue now and this project is a really unique way to do that."

In addition to Simon's involvement, the Flipflopi project boasts another link with Northumbria, with Flipflopi cofounder Ben Morison, a former student, graduating from the University's BA (Hons) Travel & Tourism (Management) course in 1997. After witnessing the shocking quantities of plastic on Kenya's beaches, an area where Ben spent much of his



childhood, he was inspired to create a visually engaging project which would make people think about plastic differently. "The Flipflopi project has always been about encouraging change in a positive way," says Ben. "It's making people smile first and then sharing the very simple message that single-use plastics really don't make sense. To create the Flipflopi boat we used only resources available locally in Kenya and low-tech solutions, enabling our techniques and ideas to be copied without any barriers. We hope people around the globe are inspired by our beautiful multicoloured boat and find their own ways to repurpose 'alreadyused' plastics."

Set up in 2016, the Flipflopi project team has pioneered new techniques to craft the various components of the boat. The plastic waste was melted, shaped and carved by the team of traditional dhow boat builders, exactly as they would do with wood. Every single element of the boat has been constructed by hand and the whole boat has been clad in colourful sheets

of recycled flipflops which are the most prolific items collected from Lamu's beaches during clean-ups. The project has attracted worldwide attention and has partnered with the UN Environment's Clean Seas campaign, with the colourful boat forming a centre exhibit at the UN Environment Assembly in Nairobi.

The research and design for the project was carried out in Northumbria's labs and workshops. "From a design point of view this has been a really interesting challenge," said Simon. "I always try to impress on my students the importance of innovation in design and the need to not only have the understanding and practical skills

of industrial design, but also an understanding of how design fits into the different societies that we live and interact with." Northumbria's

design programmes are delivered internationally, with partnerships

including the Bina Nusantara University (BINUS) Northumbria School of Design in Indonesia and the Academy of Design in Sri Lanka. Partners include household names such as Abercrombie & Fitch, Microsoft, Mars, Dunhill,

names such as Abercrombie & Fitch, Microsoft, Mars, Dunhill, Mulberry, Samsung, Unilever, Phillips, Nike and Intel – to name a few.

DISCOVER MORE

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"WE HOPE PEOPLE AROUND THE GLOBE ARE INSPIRED BY OUR BEAUTIFUL MULTICOLOURED BOAT AND FIND THEIR OWN WAYS TO REPURPOSE 'ALREADY-USED' PLASTICS."

BEN MORISON

KEY FACTS



Only 9% of the 9 billion tonnes of plastic the world has ever produced has been recycled.



More than 12 million people living across Africa are engaged in fisheries and their livelihood is directly affected by marine pollution.



According to a recent UN review, 127 out of 192 countries have adopted some form of legislation to regulate plastic bags.

NEWS

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South Korean partnership celebrates latest milestone

They may be situated more than 5,000 miles apart, but a partnership forged between two universities has been bringing together students and academics from the UK and South Korea for the last 20 years.

In 1999 Northumbria University joined forces with Seoul National University of Science and Technology (SeoulTech) to launch a unique joint undergraduate degree. The Mechanical Systems and Design Engineering programme covers design, electronics, materials science, manufacturing engineering, robotics, and computer science. Over the last two decades, hundreds of South Korean students have travelled from Seoul to Newcastle each year to learn from Northumbria's academics, enjoy the university's state-of-the-art facilities and soak up the region's culture.

The programme is validated by Northumbria, meaning students graduate with a degree from a UK university which is recognised and respected all over the world. The entire course is also taught in English. This, combined with the annual visits to the UK, means students often go on to secure jobs in the UK and the US upon graduation, as well as with some of South Korea's most successful multinationals, in the fields of electronics, telecommunications, automotives and aerospace. The graduate employment rate is something course leaders are most proud of: consistently standing at around 95%. Many graduates go on to work for world leading engineering and technology firms such as Samsung, Hyundai and LG.



"WE'RE PLANNING TO INTRODUCE JOINT RESEARCH PROJECTS WHICH WILL ALLOW STUDENTS TO WORK MORE CLOSELY TOGETHER AND LEARN FROM EACH OTHER – A GREAT EXAMPLE OF TRUE INTERNATIONALISATION."

DR PHIL HACKNEY

It was the joint vision of leading South Korean academic and engineer Professor Dong-Young Jang and former Northumbria academic Dr Steve Bell which led to the creation of the joint degree. Having recognised the changing demands of industry, and determined to ensure his graduates had the skills required when entering the world of work, Professor Jang secured funding to set up an interdisciplinary graduate programme. In 1999, the first cohort of students began the course.

As Professor Jang explains: "At the time this was a very unique concept, and the first time this type of programme had been validated by a UK university. The success of our graduates over the last 20 years is testament to the innovative nature of the course and the strength of the partnership between Northumbria and SeoulTech, first established between myself and Steve all those years ago."

Speaking during the most recent trip to Northumbria in January this year, Professor Jang highlighted the strong bond the South Korean students develop with the University and the UK as a result of their visit. "We see a real sense of pride develop in the students as a result of their time at Northumbria. They feel they are part of the University and become part of a wider international network of fellow students."

The degree has always been something of a trailblazer believed to be the first joint programme established between a South Korean and a UK university. And there are more 'firsts' to come. This year the course will become a dual award programme, meaning students not only receive a degree from Northumbria University but also from SeoulTech. This opens up opportunities to work abroad and gives graduates an edge over their contemporaries. The degree is also expected to be accredited by the Institution of Mechanical Engineers in the near future, making it the first South Korean engineering course to be recognised in this way.

Dr Phil Hackney now runs the joint degree programme at Northumbria and believes the best is yet to come with the development of an Integrated Masters programme. "The programme has already been very beneficial for students from both countries, and we're now planning to introduce joint research projects which will allow students to work more closely together and learn from each other – a great example of true internationalisation."





In 2017 the Apprenticeship Levy was introduced, requiring large employers to pay a percentage of their wage bill to the government, with the funds invested back into the business through apprenticeship training. Northumbria University News speaks to Professor Peter Francis, Deputy Vice-Chancellor, to find out how Northumbria has been working closely with businesses, both regionally and nationally, to transform the way they deliver learning and development opportunities for their employees in the wake of the Levy, and about our new partnership with Northumbria Police.

What are the benefits of Degree **Apprenticeships**?

In many ways Degree Apprenticeships are like any other undergraduate or postgraduate programme delivered at Northumbria. They address the current skills requirements of employers and are informed by researchactive staff, many of whom have experience of working with businesses and within industry. That said, there are also some differences between Degree Apprenticeships and traditional degrees. For a start, degree apprentices are employees and their fees are paid from the employer's Apprenticeship Levy. Furthermore, their learning takes place alongside work and so the student experience differs as the apprentice balances work and study. Degree Apprenticeships offer benefits for both learners and employers. Learners can study whilst in employment, with their learning paid for by their employer. They can also apply

what they are learning to current situations in their workplace. Degree Apprenticeships differ substantially from previous work-related learning programmes, with learners receiving feedback and support from both their employer and the University. Employers meanwhile can become involved in co-creating the learning opportunities their employees are involved in. The whole learning process is a real partnership between the student, the employer and the University, and provides an ideal

opportunity for all three to get the very best out of the experience and the opportunities that Degree Apprenticeships provide.

How are Degree Apprenticeships at Northumbria designed?

Our programmes are designed in consultation with employers, in line with approved national standards including those of professional bodies, and within the Programme Framework for Northumbria Awards. This means

The Big Interview: Degree Apprenticeships

that all programmes are researchinformed, employabilityfocussed, technologically enabled and deliver assessment for learning. Some are open courses, designed for a particular sector or industry, and include students from a variety of different organisations within that sector. Other programmes are developed for a specific employer to educate their employees, in which case we work closely with that organisation to co-create the programme content. The success of our Degree Apprenticeships is down to the collective work of colleagues across the University. Our academic staff develop and deliver the content and engage with employers; our support teams manage the relationship between employers, students and the University; and our business team go out and engage with employers about their needs and opportunities. Northumbria has brought together a rich, dynamic and focussed group of people who are transforming how we deliver Degree Apprenticeships, benefitting employers and their employees.

How has Northumbria's degree apprenticeship offer grown? Our strategy has always been to focus on providing Degree Apprenticeships that align with our areas of research strength, providing the greatest benefit to employers and their employees, and creating truly transformatory partnerships. From the start, our offer has included programmes in Digital (Computing), Business and Surveying, and over the last two years we have to include Solicitor, Nursing and Architecture Degree Apprenticeships, as well

as as well as expanding on our range of Business programmes. Most recently, we entered into an exciting partnership with Northumbria Police to provide Police Constable Degree Apprenticeships. As Levy payers ourselves we also have a useful insight into the challenges and opportunities faced by employers, with a number of our own academic and professional services staff studying Degree Apprenticeship programmes in Business and Education.

What role has Northumbria's business links played in our degree apprenticeship success? Northumbria is a University that businesses want to engage with. We help businesses consider what learning outcomes are most important for their organisation. Through our Degree Apprenticeships businesses recognise that Northumbria's portfolio can be delivered in a variety of ways, tailored to the requirements of different learners and employers. It's a constantly evolving process and the conversations we are having with businesses are becoming more nuanced the more we learn. When the Apprenticeship Levy was introduced, we knew businesses were not necessarily fully aware of the opportunities available to them, so we took a strategic partnership approach, based on bringing together our strengths with those of our partner organisations.

Tell us about Northumbria University's new partnership with Northumbria Police.

From 2020 the entry routes into policing will change nationally and all new officers will require a specific degree level qualification. The main route is through the Police Constable Degree Apprenticeship (PCDA), which is paid for through the Apprenticeship Levy. Providing these Degree Apprenticeships seemed a natural fit for Northumbria University - we already have world leading research strengths in policing, law and forensic science, and have successfully delivered education and CPD provision to other criminal justice organisations in recent years, most notably the National Probation Service. We have a strong connection with criminal justice organisations in the North East and for nearly twenty years have been at the forefront of engaging with criminal justice partners to inform theory and practice developments. We are proud to have been selected to deliver the PCDAs for all Northumbria Police's new recruits and are only the second University in the UK to launch the PCDA qualification. Over the last six months we have been working with Northumbria Police to develop a programme which aligns to both organisations' core values, as well as national police learning standards. There are real

similarities and areas of strength between us. We are committed to making the North East a safe and welcoming place, diverse and inclusive; we value the importance of learning; and we share the view that evidence-based, researchinformed learning can offer life changing opportunities for all.

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What does the future hold in terms of Degree Apprenticeships? As more organisations become aware of the importance of Degree Apprenticeships, I expect to see our current offer expand, with new corporate programmes and more developed specifically for individual employers. Degree Apprenticeships will never take away from the rich and vibrant offer provided through our wider portfolio, but I do see them becoming an important element of Northumbria's offer, alongside our campus-based undergraduate and postgraduate programmes, our distance learning provision, our transnational education, and our accredited courses, continued professional development and knowledge exchange.

How has Northumbria adapted the way it works in relation to **Degree Apprenticeships?**

Degree Apprenticeships have encouraged Northumbria to think about how we do things as an organisation, and how we can do things differently in the future. For example, we have set up a new Educational Partnerships Team, and through our Business and Enterprise team we now engage more closely with businesses, including creative and cultural organisations, charities and SMEs. We are now working collaboratively across the University, applying an industry focus to the development of Degree Apprenticeships, as well as our wider portfolio. The real lesson for us is the need to be agile, flexible and respond to the needs of employers, while maintaining the quality at our core. This will enable us to really add value to the experience of learners and employers and mean we will continue to excel as leaders in this area of provision.



northumbria.ac.uk/police

WATCH THIS SPACE

From introducing new legal frameworks and improving the spinal health of astronauts to predicting space weather - researchers from Northumbria are filling the voids created by a new era of space odysseys.

SHAPING THE UK'S SPACE AMBITIONS AND LAWS

The future of UK space exploration holds unimaginable potential and commercial opportunity - and Northumbria Law School is set to play a guiding role.

Professor of Space Law at Northumbria, Chris Newman, is part of a consortium led by Northumberland-based space traffic management and surveillance consultancy Northern Space and Security Ltd (NORSS), which has won a bid with The UK Space Agency to advise on opportunities for orbital space development. The consortium will look at trends likely to emerge over the next 10–20 years in this emerging sector, including advances in technology, commercial opportunities and legal considerations. Advice and recommendations from the consortium will then help The UK Space Agency develop policy and strategy.

NEWS

develop policy and strategy. As one of the UK and Europe's leading experts on space law and policy, Professor Newman believes there are vast commercial opportunities in the space exploration sector, but as a result, clear legal frameworks must be in place. As he explained: "The UK Space Agency is effectively scanning the horizon for future opportunities in areas such as space exploration, hardware specifications, satellite configurations and insurance cover. Our aim within the consortium is to provide insight that will help the Government create policies and strategies to support the UK space sector as it grows, and to set legal regulations underpinned by academic rigour and research. Northumbria's involvement is an opportunity to showcase our expertise in space law and will be a valuable learning experience for some of our law students who will be involved in the research." Professor Newman is also delighted to be collaborating with NORSS and its inspirational founder and former RAF officer Ralph Dinsley. "NORSS is a clear example of how the North East can take a lead in this sector, and of the value of businesses and universities working together," added <u>Professor Newman</u>.

Space law research at Northumbria is also opening new learning and career opportunities for students, with the introduction of a new teaching module on outer space law. The new lectures are being offered to third year Northumbria Law School students and will cover areas such as space exploration, mining opportunities in space, and regulatory frameworks surrounding outer space law in the UK and abroad. Professor Newman says the work he and the consortium are undertaking for the UK Space Agency will provide research opportunities for PhD students, and will inform undergraduate teaching on the new courses.

The UK Space Agency is responsible for all strategic decisions on the UK civil space programme, and provides a clear, single voice for UK space ambitions. Already employing around 42,000 people, the UK space sector is growing rapidly and playing a major role in the global shift towards the commercialisation of space activities, known as "new space".

4

DISCOVER MORE

northumbria.ac.uk/law

"OUR AIM WITHIN THE CONSORTIUM IS TO PROVIDE INSIGHT THAT WILL HELP THE GOVERNMENT CREATE POLICIES AND STRATEGIES TO SUPPORT THE UK SPACE SECTOR AS IT GROWS."

PROFESSOR CHRIS NEWMAN

A STELLAR DISCOVERY

New research carried out by Northumbria's Solar Physics group has revealed that the Sun's magnetic waves behave differently than previously thought.

Magnetic waves found in the outermost layer of the Sun's atmosphere, known as its corona, play a crucial role in transporting energy around the Sun and the solar system. They accelerate solar winds that travel through space at a million miles per hour and cause phenomena such as aurora, which we recognise on Earth as the Northern Lights.

After examining data gathered over a 10-year period, the Northumbria research team discovered that magnetic waves react to sound waves escaping from inside the Sun. These sound waves left a distinctive marker on the magnetic waves. Until now, it was believed that the magnetic waves only reacted at the surface of the Sun, which is the biggest star in our solar system. Therefore, Northumbria's discovery that these waves behave differently to how scientists have previously believed could have a huge impact on our understanding of solar physics and how the Sun and other stars behave. As such, their findings have been reported by the prominent scientific journal, Nature Astronomy, as they could have significant implications for current scientific ideas about how magnetic energy is transferred throughout space, which could lead to hotter and faster solar winds.

Dr Richard Morton, the lead author of the report, said: "The discovery of such a distinctive marker is very exciting. This could lead to a new way to examine and classify the behaviour of all stars under this unique signature."

THE SKY'S NOT THE LIMIT

Having completed his sports studies degree at Northumbria University 27 years ago, Professor Simon Evetts has used his qualification to explore new scientific frontiers far away from any football pitch or athletics track.

"Before I became a student, all I wanted was the chance to study astronaut health," says Simon. "But those courses weren't available to me at the time. Northumbria's sport studies degree came highly recommended, and with the University's strengths in health and life sciences, I knew it would provide me with the perfect foundation in which to pursue further research and a career in space-life sciences." Simon worked on his first space-medicine research project after completing his PhD at King's College London and established himself as a freelance researcher and lecturer in space-life sciences. However, it was during a Virgin Galactic conference on the commercialisation of space flight that Simon began to make a name for himself. Reflecting on a survey commissioned by the

Reflecting on a survey commissioned by the Virgin Group to look at the demographic profile of the people they were expecting to be Galactic's first spaceflight customers, Simon questioned whether these people would be fit or healthy enough to go into space. He goes on to explain "the survey showed customers would typically be wealthy businessmen, in their mid–50s, successful enough to afford a flight, and of average health." However, Simon goes on to explain that the average health of a 55-year-old business man is actually rather poor, so made this known to the Virgin Galactic conference. "There are clear health-related issues that need to be examined before we can begin safe commercial spaceflight," says Simon. "These passengers are not 'superhuman' like astronauts who are selected and primed to go into space."

and primed to go into space." Simon worked for Wyle Laboratories, NASA's primary space exploration services provider, before going to work at the European Astronaut Centre (EAC), in Germany, where he led the Medical Projects and Technology Unit between 2006 and 2014. His responsibilities spanned medical projects, astronaut fitness and the support of in-mission astronaut health, including working closely with British astronaut Tim Peake. He then returned to the UK three years ago to help establish a new extreme environments research and training company called Blue Abyss.

Throughout his career, Simon's research interests have remained centred around human health in space and post-space mission rehabilitation. This is a particularly important field of research as the commercial space industry prepares for lift-off. "If we're going to fly people who are not trained astronauts into space and we're not on top of their various health conditions

WHAT IS BLUE ABYSS?

Northumbria has signed a memorandum of understanding with the team behind Blue Abyss - the world's first commercial space and deep-sea research and training centre in Liverpool. The £135m centre will house the world's deepest pool, at 50m, as well as an astronaut training centre that can simulate a reduced gravity environment. It will also provide hypobaric and hyperbaric chambers – that simulate the effects of high altitude on the human body - and a human performance centre to enable divers, astronauts and top athletes to perform at the highest level

at the highest level. Providing an arena for pioneering research and training in extreme environments, Blue Abyss will fulfil a crucial role in the growth of the UK's space industry, which in turn will enable better human performance in deep-sea and space environments. Building work is due to start in July this year ready to open in the early part of 2021.

BELOW: PROFESSOR SIMON EVETTS

and how they're going to react during the launch into a zero-gravity environment the result

environment, the results could be fatal," explains Simon. "We need them to be physically prepared and on top of any healthrelated issues before they travel to our most extreme environment; outer space."

Simon, now a visiting professor at Northumbria, wants the University to be at the forefront of space-related health research. "When I was a student here all I wanted was the chance to study space-life sciences and that wasn't available at the time, but now it is," says Simon. "Northumbria is already contributing to European space exploration by collaborating with the European Space Agency and its ground-breaking research into aerospace medicine and rehabilitation has placed it at the forefront of UK universities in this field."



orthumbria.ac.uk/tomorrow

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12 FEATURE

DESIGNED FOR LIFE

An ambitious extension to Northumbria's historic Sutherland Building has been unveiled, providing an innovative new home for the University's flagship Architecture programmes.



"THE UNIVERSITY TAKES GREAT PRIDE IN ITS FLAGSHIP ARCHITECTURE AND INTERIOR ARCHITECTURE **PROGRAMMES. WEARE EXCITED TO** MATCH THE **EXCELLENCE OF OUR** ARCHITECTURE **DEGREES**, **STUDENTS AND STAFF WITH WORLD** LEADING **TEACHING** SPACES."

DR SIMON ROBSON

Left: The new studios combine old and new, with features such as Sutherland Building's chimneys visible form the new extension.

Right : Flexible working spaces allow students to change studio space into exhibition space with integrated, movable display panels

With its terracotta-brick façade, coat of arms and gothic gargoyles, nobody looking at the Grade II listed Sutherland Building would guess that, behind the 19th century exterior, lies a brand-new development, sympathetically connecting old and new to create a world-class teaching space for Architecture students.

Designed by architects Page/ Park, the extension brings together the existing, historic Sutherland Building, with new, innovative, light-filled, and flexible studio spaces,



our campuses over the last 10 years and follows the opening of our state-of-the-art £7m Computer and Information Building. This is in addition to the complete refurbishment of the University's library and art gallery space last year.



THE NORTHUMBRIA ARCHITECTURE **STUDIOS HAVE BEEN SHORTLISTED FOR** THE PRESTIGIOUS ROYAL INSTITUTE **OF BRITISH ARCHITECTS (RIBA) NORTH** EAST AWARD. THE WINNER WILL BE **ANNOUNCED ON 16 MAY.**



THIRD YEAR ARCHITECTURE STUDENT ADAM DIXON

INNOVATIVE DESIGN FEATURES:

- Four square metres of studio space per student - double the previous provision and one of the highest levels of personal studio space in the UK.
- Individual desk, drawing board, power supply, USB point and cutting mat for every student throughout their degree.
- Designed with light and space in mind, with outdoor areas and courtyards.
- Combination of traditional and new digital working methods.
- Carbon-neutral design.
- Naturally ventilated with entirely recycled flooring and chairs.
- Green roof and green wall with bird and bat boxes to encourage wildlife.
- Rain garden pond that enables sustainable surface water drainage.
- Architectural ideas incorporated throughout the building for use in teaching enabling students to learn through the space they are working in.
- Studios fitted with integrated, movable display panels that can be aligned in different formations, to change the shape of the space for teaching and exhibitions.

Right: The new extension sits behind the Grade II listed Sutherland Building

Inside, original features have been maintained, with skylights providing an airy working space.





14 NEWS

Searching for Newcastle's best student neighbours

Northumbria and Newcastle Universities have teamed up to shine a light on the students who support their neighbours and local residents and make a real difference to their community.

With the number of full-time students in the UK having doubled since 1992, cities like Newcastle have seen a steady rise in the number of students setting up home in a new area, in a new property and with new neighbours of all backgrounds and professions. Often away from home for the first time, moving into halls of residence or shared houses is an exciting time for thousands of students.

But for all the vibrancy students add to the local community, culture and economy, their infamous noisy-neighbour stereotype sometimes weighs on local residents' minds. "When there's one example of disruptive behaviour, it's easy to assume that everyone from that community acts that way," explains Simon Noble, Northumbria Students' Union President. "But actually it's not true. We have so many fantastic students who are out every day, week and month helping in the local community – and that's the kind of thing we want to highlight with the Best Neighbour on Campus campaign.'

The campaign sets out to challenge this negative stereotype by identifying and celebrating students who are considerate neighbours and engaged members of the community. Each month, a panel of judges – made up of local residents, local councillors and representatives



"OUR STUDENTS ARE A REAL ASSET TO OUR LOCAL COMMUNITIES AND IN MANY WAYS, HELP MAKE NEWCASTLE THE DIVERSE, CULTURALLY RICH CITY THAT IT IS TODAY."

PROFESSOR ANDREW WATHEY CBE

from both Universities will pick a winner based on nominations made by residents living in student areas across the city. Winning households will receive £1,000 to contribute to their studies and living costs while nominating residents will receive £250 to donate to a charity of their choice.

"Students are a real asset to our local communities and help make Newcastle the diverse, culturally rich city that it is today," says Professor Andrew Wathey, Northumbria's Vice-Chancellor and Chief Executive. "We already know that our students contribute to business and the community, whether through internships or placements, in cultural organisations, at local NHS trusts or by offering free consultancy through Northumbria's Business Clinic or Student Law Office."

In addition to that, Professor Wathey explains that in the last year alone 3,800 Northumbria students have given more than 40,000 hours in volunteering across the North East. Northumbria is working in close collaboration with Newcastle University and the Vice-Chancellors from both institutions say they're

looking forward to seeing the nominations from across the City. "This joint campaign with Newcastle University will help to highlight the positive work done by students in our local communities," says Professor Wathey. Commenting on the collaboration, Professor Chris Day, Vice-Chancellor and President of Newcastle University added, "The campaign shows our joint commitment to rewarding the hugely positive contribution students from both universities make to our city. "Improving student-resident

relationships can only be a

good thing for our students and the permanent residents they live alongside. The different lifestyles of students mean that this will always be a challenge, but we are committed to doing as much as we can and working with residents in order to create harmonious relationships.'



Benefits of studying abroad worth fighting for

Left: Louise Waters in Grenoble on her study abroad year.



Fears that a no deal Brexit would see the UK lose membership of EU funding programme for education and overseas study, Erasmus+, have triggered an urgent #SupportStudyAbroad campaign.

Launched by higher education sector representative group, Universities UK, the campaign aims to protect funding for the 17,000 UK students who study or work abroad on Erasmus+ placements each year. All students benefit from financial support from Erasmus+ to enable them to study and work abroad, as well as having access to a language portal and the Europass – an online 'skills passport' which acts like a CV. Additional financial support is also provided to students from less-advantaged backgrounds to help pay their living and travel costs while on

that if we lose Erasmus+ there will be no study abroad scheme to replace it.

placement. Universities UK warns



northumbria.ac.uk/international

CASE STUDY:

We asked International Business Management graduate Louise Waters about her own Erasmus+-funded study abroad experience at Université Claude Bernard in Lyon, France, and how it enriched her learning experience at Northumbria.

Why did you decide to do study abroad?

My degree included a year either studying or working abroad – an opportunity that really sold Northumbria to me. The number of students who take the opportunity to work or study abroad is still low – so you are placing yourself in a real niche employability wise.

Why did you decide to go to Université Claude Bernard?

I'd studied French at school and in my first year of university, so going to a French speaking country to further improve my language skill made sense. Student accommodation was very important to me, as opposed to private renting, so I began shortlisting by universities that offered this. I wanted somewhere warm, with lots to do, but also easily accessible from England. Université Claude Bernard also offered the opportunity to obtain a dual degree – again offering more employment opportunities. There are only a handful of partner universities offering this.

What was your stand out moment during study abroad? Embracing the culture. I wasn't used to travelling alone but the experience gave me the confidence to speak with local people in their own language. I remember once eating alone in a restaurant and realising just how much independence I had gained.

Did your experience help your studies at Northumbria and your career?

I went from getting an average of 65% in first and second year, to achieving 77% in my final year and subsequently in my degree overall. I secured a graduate job in the April before graduating. I am absolutely sure studying abroad helped with my employment.

If you could offer some advice to students thinking of going on study abroad what would you say?

Just do it. Study abroad provides you with the soft skills employers are looking for, the opportunity to travel, learn new languages, and meet new friends from all over the world – it's a no brainer!!

"JUST DO IT. STUDY ABROAD PROVIDES YOU WITH THE OPPORTUNITY TO TRAVEL, LEARN NEW LANGUAGES, AND MEET NEW FRIENDS FROM ALL OVER THE WORLD -IT'S A NO BRAINER!"

16 FEATURE

Northumbria

University NEWCASTLE



IN THE MEDIA



Although banned in much of the world by a United Nations resolution, the practice of Female Genital Mutilation (FGM) is still carried out in some countries across Africa and Asia. Following decades of interventions by development bodies, there was positive news recently after research by Northumbria's Professor Ngianga-Bakwin Kandala showed the prevalence of FGM has fallen dramatically in some regions of the world over the last 30 years. His findings captured the attention of the world's media, as he tells Northumbria University News.

Speaking live on the BBC's World Service to millions of people around the globe about his research findings is an experience Professor Ngianga-Bakwin Kandala will never forget. After his research about the downward trend in the prevalence of FGM was published in the respected online journal British Medical Journal Global Health, he was inundated with requests for interviews from newspapers and broadcasters all over the world. His findings were covered by over 40 newspapers, websites, radio stations and TV news programmes everywhere from China to Australia and France to the Philippines, reaching an audience of over 17 million people. But it was his BBC

interview which really made an impact. "Knowing the reach of the programme, I knew that I was speaking live to millions of people all around the world. It was wonderful to think that I was able to communicate my research with so many people in so many countries at once," he explained.

It was both the results themselves and the timing of the research announcement which Professor Kandala believes led to the surge of media interest. "Eliminating harmful practices such as forced marriage and FGM are among the United Nation's Sustainable Development Goals and, as such, the evidence provided in our paper will play a key role in meeting these goals. Our findings provided context-specific evidence of the rates of FGM which can be used to inform the policies and interventions of governments and other organisations involved in eliminating these practices. Raising awareness of the issue here in the UK and worldwide through media coverage is very important in raising the profile of the work I am doing, especially in terms of seeing my research translated to policy and practice."

Despite only having limited experience of dealing with the media in the past, Professor Kandala said the support he received from Northumbria's Corporate Communications and Reputation Management team in managing media requests had been invaluable. "Having dedicated support from within the University when it came to handling enquiries from the media, and finding additional avenues to promote these findings, was a valuable and positive experience." He added: "I would absolutely encourage my colleagues at Northumbria to consider promoting their own work through the media so that the benefit of our research is felt beyond academia."







Lightbulb moment

Below:

From l-r: Professor Zabih Ghassemlooy and Dr Andrew Burton of Northumbria University and Dr Paul Haigh of UCL

The lights in our homes and offices could soon be providing us with high-speed wireless internet, transforming the way we download data.

In the digital age, having access to a fast and reliable internet connection is essential - from sending emails and streaming films, to everyday tasks such as banking and shopping. Unfortunately, the speed offered by existing radio frequency-based WiFi technology often does not meet our modern-day needs. Scientists are therefore looking for new solutions to overcome the speed bottleneck and help us stay connected. And the answer could be all around us, in the ceilings of the homes and offices we live and work in and the smart devices we use every day, thanks to the simple lightbulb.

Light emitting diodes, used in LED lights, are already fast replacing traditional incandescent or fluorescent lights. Using 10 times less energy, they have a much longer lifespan, making them a cheaper and greener alternative. Now researchers at Northumbria and University College London (UCL) are developing a new type of LED based on the organic technology used within visible light communications (VLC). This technology gives LEDs the ability to communicate with tablets and mobile phones to download and upload huge amounts of data.

The use of VLC technology in an indoor environment is known as 'LiFi'. It works by using LED lighting fixtures to transmit information (audio, video and data) by turning them on and off at a very high speed – too fast a speed for the human eye to see. A video stream, which might take an hour to download using WiFi, could take just a few seconds using LiFi. Live streaming will also become easier, more reliable and delivered at a higher quality. "This technology could

completely transform how we upload and download information in the future,"



PROFESSOR ZABIH GHASSEMLOOY

explains project lead Zabih Ghassemlooy, Professor of Optical Communications at Northumbria University. Heading up Northumbria's Optical Communications Research Group, Professor Ghassemlooy is internationally recognised as a leading figure in LiFi research.

"In the future almost all the lights we use in our homes and offices will be LED," he explains, "and given the increasing amount of data we are all generating and using, it therefore makes perfect sense to embrace this wonderful and green LiFi technology to provide fast internet in the future."

Increased speed is not the only benefit LiFi offers. Unlike WiFi it wouldn't expose users to radio frequency radiation. And it would also be safe to use in areas such as hospitals, where WiFi cannot be used due to the electromagnetic interference it causes.

With the research now taking place into LiFi technology, it is hoped that it could be in general use within the next five to 10 years. The Northumbria research, which also involves a team of researchers from UCL, led by Professor Izzat Darwazeh, is part of a three-year research project, funded by the Engineering and Physical Sciences Research Council (EPSRC). "The benefits of LiFi technology are clear," added Professor Ghassemlooy, "and we're pleased that this research will be contributing to bringing these benefits to the general public in the not too distant future."



KEY DIFFERENCES BETWEEN LIFI AND WIFI

DISCOVER MORE

Brexit - what next?

As this edition of Northumbria University News went to press, Prime Minister Theresa May was travelling to Brussels to ask EU leaders to postpone Brexit .

Whatever date is finally agreed, it is clear that Brexit will have wide-reaching consequences. At Northumbria, academic experts from across the University have been exploring the possible effects of Brexit from a variety of perspectives, including the impact on citizens' rights, UK security, the Irish backstop and the health of the North East economy.

In this special feature for *Northumbria University News*, researchers from Northumbria Law School, Newcastle Business School and our department of Humanities, set out their points of view on what a post-Brexit future might hold.



Associate Professor Gemma Davies and Associate Professor Adam Jackson, Northumbria Law School

One of the many challenges posed by Brexit is the risk of disruption to UK security. This challenge comes from the fact that so much of our current national security is safeguarded through cooperation with EU partners. The UK police frequently rely on EU mechanisms in order to detect, arrest and prosecute offenders. For example, it is much easier to extradite between EU countries using the European Arrest Warrant than it is to extradite from outside of the EU. This is particularly relevant for Ireland: on leaving the EU, the UK will have a new land border with the EU running for 300 miles between Ireland and Northern Ireland. Brexit therefore has profound implications for the current high levels of cross-border police and security cooperation between the UK and Irish authorities. In the UK-Irish context, continued access to, or replacement of EU databases, cooperation mechanisms and EU criminal justice institutions are vital to ensure that cross-border cooperation, and the fight against terrorism and organised crime, are not undermined. In addition to this, any divergence to tax or visa regulations between the UK and the EU is likely to drive cross border crime, potentially undermining the Common Travel Area. The fact that leaving the EU is likely to impact on the security of the UK was one of the reasons Theresa May, then the Home Secretary, campaigned in 2016 for the UK to remain.

In 2018, academics in our law school secured funding to set up a UK-Irish Criminal Justice Cooperation Network. The network aims to protect and enhance criminal justice cooperation between both countries after Brexit. Such initiatives are vital to delivering a successful Brexit. A close working relationship with our nearest neighbours will still be needed if we leave the EU. Criminal justice cooperation is just one example of an area which will require significant renegotiation to ensure that the UK's interests are not harmed.



Professor Tanja Bueltmann, Department of Humanities

During the EU referendum, EU citizens living in the UK were promised that nothing would change for them and that a system of automatic recognition of their rights would be put in place. Tragically, the reality looks very different. EU citizens in the UK and British citizens who live in another EU country – five million people altogether – are those most immediately affected by Brexit, and the issue of citizens' rights has not been resolved. Brexit continues to pose specific threats to their rights and livelihoods. Even the agreements which have been reached do not provide adequate guarantees or certainty.

EU citizens in the UK have to apply for so-called "settled status" regardless of how long they have lived in the UK. As it is an application, there is a risk of rejection, and some groups, such as children or the elderly, are especially vulnerable. The best-case outcome is a loss of rights, whilst the worst-case could be being classed as illegal and deportation.

But even if "settled status" is granted it does not provide certainty. Legislation will be mostly through secondary legislation, which can be easily changed in future without involving Parliament. EU citizens are likely to remain subject to the political mood of the day. Additionally, "settled status" will be recoded against a person's national passport, so whenever that is renewed, "settled status" needs to be linked to the new passport again. EU citizens will have to do this for the rest of their lives and consequently are faced with remaining in eternal limbo, with the Labour MP Yvette Cooper recently rightly referring to settled status as "Windrush on steroids".



Dr Connal Parr, **Department of Humanities**



Professor Ignazio Cabras, Newcastle Business School

Having taught the subject of the Northern Ireland Troubles in various British universities, I am often struck by the brilliant students who arrive at the subject with little or no grounding in Irish history. This is one of several issues highlighted by Brexit, which many have noted is driven – or at least flavoured – by a certain imperial nostalgia. It is

little coincidence that one of the principal public critics of Brexit, Fintan O'Toole, is also Ireland's foremost political and cultural commentator. O'Toole has long argued Brexit is an outbreak of English nationalism. Anthony Barnett's book The Lure of Greatness (2017) identifies that

Brexit is, at its heart, a political crisis. He pinpoints the British public's loss of confidence in its political system to Tony Blair's decision to invade Iraq in 2003. Combined with de-industrialisation and the parliamentary expenses scandal of 2009, David Cameron's decision to hold a referendum on the UK's membership of the European Union was always going to result in a massive slap back from a fed-up British electorate.

In many ways the ignorance of Ireland – coming through in the lack of clarity from MPs on what the 'backstop' even is, or in threatening Ireland with food shortages after its historic experience of famine – is a continuation of the British establishment's crisis.

Nevertheless, a need to foster energy, momentum and understanding is required to pull us out of the crisis which we are all undoubtedly facing. It remains our responsibility to probe, so as to really tackle, this complex phenomenon, in how we write, teach, and communicate history.

It is likely that Brexit will have a considerable impact on the North East economy, and the region could suffer significantly due to its dependency on exports and manufacturing. A recent study from the Confederation of British Industry (CBI) indicates that, in case of a no-deal between the UK and the EU, the North East economy will be deeply damaged, with a decreased production of 10.5% less in 2034 compared to the UK remaining in the EU. These predictions are more positive in the case of leaving the EU with some sort of deal, although significant disruption in the local economy would still be expected due to the uncertainty related to negotiating a new UK/EU free trade agreement. However, in the worst-case scenario, border delays and customs checks will

severely hurt supply chains serving large companies such as Nissan, which export more than half of its production to the EU. Shock waves would hurt all the local small and medium-sized enterprises (SMEs) and enterprises immediately related to large companies, as well as many others operating in different sectors in the region. This situation would progressively shrink the number of business opportunities available in the North East, pushing many to look for jobs elsewhere in the UK and overseas.

The impact of Brexit would also be felt by the Higher Education (HE) institutions operating in the region, particularly by those profiling themselves as research intensive universities. Data provided by the North East Local Enterprise Partnership (LEP) indicates that universities in the region secured an overall €109 million funds from the EU Horizon 2020 programme in the period 2014-2020. Losing access to these funds will make attracting and retaining academic talent extremely challenging for NE universities, with dramatic repercussions in terms of international research partnerships and, ultimately, student recruitment.

to the future:



Professor Tim Wilson, Northumbria Law School

Whatever date Brexit is eventually scheduled for, I can suggest three pointers

Brexit - or even no Brexit - is not a single event which takes place on one day. The 2016 Referendum vote initiated a process of readjustment of the UK's relationship with the EU that will unfold over several years. Even if the UK were to remain in the EU on its present exceptionally favourable membership terms – as it is at the time of writing legally entitled to do - this readjustment process will be more politically traumatic within the UK than for the EU's 27 remaining members.

Brexit - or not - is only one of several readjustments that both the UK and

the EU are experiencing. Globally, the EU – whether with or without the UK is bound to become comparatively less wealthy, less powerful and less scientifically and technologically advantaged than in 2016. The direct result of that vote in 2016 in both global and European terms, however, will be a poorer and less politically influential UK, than had the result been different. Irrespective of Brexit, the EU will face many challenges in the coming years. Some will be internally created, for example tensions between members, and others will be external in origin, for example from a resurgent but at present unfriendly Russia. History is likely, however, to be on the side of the

ever evolving EU model of inter-state cooperation. This judgement applies to a range of issues, for instance, European reconstruction after 1945 and 1989, responding to climate change, or my own specialist area: judicial and law enforcement cooperation.

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DISCOVER MORE

20 NEWS

From derelict hospital to vibrant new homes

A Northumbria graduate's plans to breathe new life into a former hospital have have been recognised with a prestigious national design award.

A design proposal by Architecture Masters graduate Faye Sedgewick to transform the abandoned Grade II listed Keelmen's Hospital, in Newcastle, has won her the National Student Designer Award at the Association for Project Safety (APS) National Awards. Faye's design repurposed the building and its grounds to create a living space that would tackle some of the challenges often faced by older people, including social segregation, loneliness, inactivity and lack of independence.

Speaking about her award win, Faye said: "For my designs to be recognised as an example of innovative and imaginative work



means a great deal to me. Such success would not have been possible without the invaluable support provided by the Architecture team at Northumbria University."Associate Professor of Architecture, Dr Peter Holgate, added: "This award attracts entrants from students of architecture from Universities across the UK, so in winning first prize Faye has really demonstrated her exceptional design skills."

The APS Awards are intended to encourage continuous improvement in design and recognise excellence in risk management within the design professions. They offer students a chance to demonstrate exceptional work, and to help drive up standards of health and safety across the construction industry.

DISCOVER MORE

northumbria.ac.uk/architecture

"THIS AWARD ATTRACTS ENTRANTS FROM STUDENTS OF ARCHITECTURE FROM UNIVERSITIES ACROSS THE UK, SO IN WINNING FIRST PRIZE FAYE HAS REALLY DEMONSTRATED HER EXCEPTIONAL DESIGN SKILLS."

DR PETER HOLGATE

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Out and about in higher education



THE NORTHUMBRIA UNIVERSITY TEAM WORKING ON THE 'OUT AND ABOUT' PROJECT. (L-R) DR ANTONIO PORTAS, FRANCES HAMILTON AND DARIA ONITIU.

A new website being developed by academics at Northumbria will help members of the LGBT+ community understand their legal rights when travelling abroad.

The world of higher education is a diverse and international community, with members regularly collaborating on research, teaching and partnerships. But with legal and cultural differences existing between countries and continents, university staff and students may have concerns when working or travelling internationally, particularly members of the LGBT+ community.

Recognising this, a project led by Northumbria University will bring together information about varying LGBT+ rights around the globe, creating an online platform which will provide free and user-friendly legal advice.

The 'Out and About' project is the brainchild of a group of academics from Northumbria, Loughborough, Manchester, Oxford and Queen Mary universities, who are working with the Institute of Physics, Pride in STEM and HMRC to develop the platform. Among the team is Dr Antonio Portas, from Northumbria's department of Mathematics, Physics and Electrical Engineering. "Our project is about creating a hub that members of the LGBT+ community could quickly navigate, to ensure they will be safe when travelling overseas," he said: "University staff often work in international teams and need to be confident that it is okay to be themselves, both in the UK and abroad."

Frances Hamilton, of Northumbria Law School, and PhD student Daria Onitiu, are also involved. Frances added: "At the moment, there isn't one single place which brings together information about the current legal landscape of LGBT+ rights across the globe, so the plan is to develop a website where we could curate all that information."



northumbria.ac.uk/equality

"UNIVERSITY STAFF OFTEN WORK IN INTERNATIONAL TEAMS AND NEED TO BE CONFIDENT THAT IT IS OKAY TO BE THEMSELVES, BOTH IN THE UK AND ABROAD."

DR ANTONIO PORTAS



LGBT+ History Month

When it came to celebrating LGBT+ History Month this February, Northumbria was loud and proud.

Promoting and celebrating equality and diversity is integral to creating and supporting Northumbria's diverse, multi-cultural community, and the University was proud to play an active role in celebrating LGBT+ History Month this February. The annual event aims to; increase the visibility of lesbian, gay, bisexual and transgender people, their history, lives and their experiences; work to make educational and other institutions safe spaces for all LGBT communities, and promote the welfare of LGBT people.

Coordinated by Northumbria's LGBTQ* Steering Group, LGBTQ* Network, and the LGBTQ* Society of the Students' Union, Northumbria delivered a packed programme of events throughout February including workshops, seminars, and guest lectures. Among the events was a session explaining how businesses can support LGBT+ staff living and working in hostile environments in other countries, and a talk regarding the role of LGBT+ advocates in the workplace.

He fold of Governance and Chair of the University's LGBTQ* Steering Group, Dr Adam Dawkins, said: "I'm delighted that LGBT+ History Month was actively promoted and celebrated at Northumbria University. The national theme for LGBT+ History Month this year was 'Peace, Activism and Reconciliation' and this is more relevant than ever in a climate where we are seeing examples of hard-fought LGBT+ rights eroded both in the UK and overseas."

A number of staff and students across the University also marked LGBT+ month by becoming role models and 'allies' by sharing their stories, making a commitment to never being a bystander to harassment or discrimination and familiarising themselves with LGBT+ language. Many also chose to wear rainbow lanyards to show their support to the LGBT+ community throughout the month of February. The University is proud to be a multi-cultural community that positively welcomes diversity and is committed to embedding equality and diversity in all its activities.

"THE NATIONAL THEME FOR LGBT+ HISTORY MONTH THIS YEAR WAS 'PEACE, ACTIVISM AND RECONCILIATION' AND THIS IS MORE RELEVANT THAN EVER IN A CLIMATE WHERE WE ARE SEEING EXAMPLES OF HARD-FOUGHT LGBT+ RIGHTS ERODED BOTH IN THE UK AND OVERSEAS."

DR ADAM DAWKINS



22 NEWS

Cracking the code

institute of

Technology is driving a modern day industrial revolution, but a current skills gap in the UK tech sector is leaving a shortage of coders. Now Northumbria is closing the gap by playing a key role in developing the next generation of digital talent.

In the digital age, computer programming is everywhere – from the software on your laptop to the apps on your phone, all are created using code. However, there is currently a national shortage of people with the coding skills needed to meet this rising demand. Statistics show that more than 500,000 highly trained computer scientists will be needed by 2022 – three times the number of UK Computer Sciences graduates in the last 10 years.

To help address this, Northumbria has joined forces with businesses, training providers, professional bodies, other universities and the Office for Students to form the Institute of Coding (IoC). Launched last year, the IoC is a £40m UK-wide consortium which aims to maintain the UK's position as a world leader in the digital age. Together, IoC partners are working to boost the employability of digital specialists, bring more people from underrepresented groups into the tech sector, and develop the next generation of digital talent, at degree level and above.

Northumbria is running a coordinated programme of events, which include teaming up with IT training company QA Consulting to offer a series of free coding workshops. The sessions aim to encourage people who have an interest in coding, but little or no previous experience, to have a try. In particular, those from groups currently underrepresented in the sector,



Left: Two of the learners who took part in the recent coding workshop

Below: Northumbria's IoC project lead Dr Huseyin Seker (left) with one of the learners at a recent Coding workshop

including women, are encouraged to attend. The first of the monthly workshops took place in February and proved popular, with Shadow Minister for Industrial Strategy, and MP for Newcastle Central Chi Onwurah, stopping by to meet the learners and share her own experiences of working in engineering. Speaking during her visit, she explained why she believed the IoC was playing a vital role in the North East.

"We recognise that, just as the trains and steam engines drove the first industrial revolution, technology is driving this industrial revolution, and as a region that believes in making and building things, we should be building a future where we have good, high skilled jobs and we are using technology for the benefit of people," she said.

In addition to the coding workshops, Northumbria will also be holding employment and career development sessions and a series of weekly clubs helping people develop the skills needed for building websites, coding, data analytics and mobile app development. Events aimed at regional businesses will also take place, focusing on the benefits of data analysis for companies, as well as a number of different talks and lectures by visiting industry experts. Northumbria's project lead, Dr Huseyin Seker, explains: "We are proud to be one of the founding members of the IoC and, working in collaboration with our industrial and educational partners, we aim to close the digital skills gap in the UK and help the nation continue being the world leader in the digital age.



northumbria.ac.uk/ioc



"WE AIM TO CLOSE THE DIGITAL SKILLS GAP IN THE UK AND HELP THE NATION CONTINUE BEING THE WORLD LEADER IN THE DIGITAL AGE."

DR HUSEYIN SEKER

Nursing the best talent

Outstanding staff and inspirational students from Northumbria University have been shortlisted for four prestigious national awards by the Student Nursing Times.

The Student Nursing Times Awards are the only national awards to celebrate the very best student nurses and nurse education providers in the country. They recognise institutions and individuals who are committed to developing new nursing talent, as well as student nurses who demonstrate the academic achievement, clinical skills and personal qualities that will make them exceptional nurses. Northumbria has been shortlisted for National Nurse Education Provider of the Year (post-registration), after winning the same award three years running from 2012



to 2014. As the University gears up to win back the coveted title, other shortlistings for Northumbria this year include nursing lecturer Barry Hill as Educator of the Year, adult nursing student Florence Pobee, who has been described by her tutors and fellow students as "a true inspiration to others", for the Most Inspirational Student Nurse of the Year award and student midwife Kerrie Page in

the Student Midwife of the Year category

Joanne Atkinson, Northumbria's Associate Head of Department, Nursing Midwifery and Health, said Northumbria has been nominated in four categories because of the University's commitment and diverse offer. "We are well respected and have won the National Nurse Education Provider of the Year award three years in a row in

previous years," she explained. "We have a strong reputation nationally for nursing education, partnership working with health trusts and developing a workforce that is fit for purpose in a landscape that is ever changing in the NHS.

Northumbria's nursing programmes were the first in the country to be accredited by the Royal College of Nursing (RCN) and are ranked 22nd in the UK

in The Times and Sunday Times Good University Guide 2018. The awards ceremony will be held in London on Friday 26 April – keep an eye on the Northumbria University website for news of the results.

DISCOVER MORE E/ northumbria.ac.uk/nmh



NORTHUMBRIA HAS SIGNED **TIME TO CHANGE PLEDGE**

The University has joined a growing movement of more than 900 employers in England to raise awareness, normalise conversations and support those facing mental health problems.

Find out more at

www.time-to-change.org.uk

proud to support time to change

let's end mental health discrimination

24 FEATURE

THE CONVERSATION

The Conversation is a collaboration between news editors and academics to provide informed news analysis and commentary that's free to read and republish.

At Northumbria, our academics have been working with The Conversation to produce independent, quality current affairs journalism on some of the latest topics to hit the news.

HERE ARE SOME OF OUR TOP PICKS





How climate change caused the world's first ever empire to collapse

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Vasile Ersek, Senior Lecturer in Physical Geography, looks at the new scientific discovery of a drought that finished off the Akkadian Empire 4,000



years ago



Ten novels to help young people understand the world and its complexities



Fiona Shaw, Senior Lecturer, shares a range of thought-provoking and engaging novels for enquiring minds.





Sending a naked selfie can be a criminal offence - but not many teenagers know this

Raymond Arthur, Professor of Law, writes about the legality of sending naked selfies and outlines the differences in behaviour between consensual youth sexting and child pornography





Mistrust and earthquakes: why Lancashire communities are so shaken by fracking tremors



Anna Szolucha, Postdoctoral Research Fellow, explores why the impact of tremors at the Preston New Road fracking site near Blackpool are reverberating so strongly throughout the community living on the surface.





Emoji are becoming more inclusive, but not necessarily more representative







Retail decline, in maps: England and Wales lose 43m square metres of shop space



Paul Michael Greenhalgh, Professor of Real Estate and Regeneration, discusses post-industrial decline and how retail spaces are closing and losing value across England and Wales.





Ponds can absorb more carbon than woodland - here's how they can fight climate change in your garden

Mike Jeffries, Associate Professor in Ecology, discusses how ponds are more than just a decorative garden piece and how they could be a good tool in helping combat climate change.



Transport that doesn't cost the earth

Engineering experts from the UK and Russia are working together to develop a new generation of low-carbon engines – making driving a cleaner, greener experience in the future.

Driving a car is a daily necessity for many of us – but it also has a negative impact on the environment, with the average passenger vehicle emitting about 4.6 metric tons of carbon dioxide per year. Finding low-carbon alternatives to petrol and dieselpowered vehicles is therefore vital, and a group of researchers from UK and Russian universities are working together to explore what technology might power the cars, trucks and planes of the future. They came together to discuss their latest findings during the international Researcher Links UK-Russia workshop, held at Northumbria University.

The event was organised by Dr Ulugbek Azimov, Programme Leader in Automotive Engineering at Northumbria University. "During the workshop all those attending agreed that electric drives and electric propulsion systems can achieve clean and more sustainable transport, particularly for passenger vehicles," he explained. "However, the main issue is how that technology can be applied to

heavy-duty vehicles and trucks." Dr Azimov and the team of researchers believe one of the answers to more sustainable transport lies in producing alternative fuels, using microalgae and organic waste materials. "There also needs to be more research into fuel design and understanding how the molecular structure of fuel can be devised to minimise the exhaust emissions," he added.

Following the success of the Researcher Links UK-Russia workshop, which was supported by the British Council, there are now plans to hold a follow-up workshop in Russia to discuss autonomous vehicles and future smart cities. Discussing the future of the partnership, Dr Azimov said, "We're looking forward to developing the links between Northumbria and our Russian colleagues further, not only in the area of research but also in our teaching and to support staff and student exchanges. This is an issue of global importance and by sharing experiences and knowledge we hope to find solutions to providing sustainable transport."



northumbria.ac.uk/engineering



"THERE NEEDS TO BE MORE RESEARCH INTO FUEL DESIGN AND UNDERSTANDING HOW THE MOLECULAR STRUCTURE OF FUEL CAN BE DEVISED TO MINIMIZE THE EXHAUST EMISSIONS."

DR ULUGBEK AZIMOV

From Stateside to Tyneside



PROFESSOR DEVIN FERGUS

Northumbria already boasts one of the largest and most active centres for American Studies in Europe and has now strengthened its team further with the addition of Professor Devin Fergus.

An expert in politics, race, economics, and inequality in the US, Professor Fergus has held the role of Arvarh E. Strickland Distinguished Professor of History, Public Affairs, and Black Studies at the University of Missouri, for the last two years. Students on Northumbria's American Studies BA (Hons) degree programme will benefit from his experience. He will also play a key role in the University's American Studies Research Group.

Speaking about his appointment, Professor Fergus said: "I'm thrilled to join my colleagues in the American Studies group at Northumbria University. The University has assembled a stellar team of scholars who are highly regarded for their grant-winning research in modern American life, politics, race relations, social movements, culture, and consumption. I'm excited and eager to contribute to such a vibrant intellectual group - one that continues to interrogate, define, and reshape the contours of my discipline."

Professor Fergus' appointment bring the number of Americanists working at the University to 12, with many of those staff recognised by the Organization of American Historians, the largest professional society dedicated to the teaching and study of American history, for the quality of their work.



nortnumbria.ac.uk americanstudies





Improving long-term health through yoga

Yoga has long been praised as the cure-all for many of life's ills. There is little doubt that yoga, like many forms of exercise, has health benefits, but can the ancient Hindu spiritual discipline really contribute to long-term health and healing?

Northumbria University's Dr Garry Tew, Associate Professor of Exercise and Health Sciences, aims to answer that exact question. Dr Tew is leading a major £1.4 million study investigating the benefits that yoga brings to older people with multiple, long-term health conditions.

The four-year study, funded by the National Institute of Health Research (NIHR), tests the benefits of yoga for people over 65 who suffer from multiple, long-term health conditions. Two-thirds of people over 65 in the UK have two or more conditions which could include diabetes, heart disease, asthma, depression and anxiety. All of which can be improved through yoga, says Dr Tew. "Yoga is thought to bring wide-ranging benefits, such as increases in strength, flexibility, balance and quality of life, and reductions in

stress, anxiety and depression," he explains. "In older adults specifically, there is promising evidence that yoga can improve physical function and quality of life." He goes on to say that more work is needed to understand the effectiveness and cost effectiveness of yoga in older people with multiple long-term health conditions.

Dr Tew is working in partnership with academics at the University of York and independent yoga consultants on the study. The research team will recruit almost 600 adults aged 65 and above suffering multiple, long-term health conditions from across 12 different locations in the UK. The participants will be randomly assigned to one of two groups. The first group will continue to receive their usual care without any additional support, while the second will receive their usual care plus the

opportunity to join the British Wheel of Yoga's 12-week Gentle Years Yoga programme. This programme involves weekly group-based sessions and home exercises. To establish the effects of the yoga programme, participants will be assessed after three, six and 12 months to monitor changes in their quality of life and mental health. Dr Tew explains that "a primary focus will be the effect of the programme on peoples' overall quality of life. We will also review any changes in their reported levels of depression and anxiety and if they are having fewer falls because of improvements in physical function.'

Treatments associated with long-term health conditions account for 70% of NHS expenditure and the study aims to determine both the clinical effectiveness and cost effectiveness of a specially-

KEY FACTS



Two-thirds of people over 65 in the UK have two or more longterm conditions, including diabetes, heart disease, asthma, depression and anxiety

adapted yoga programme for older adults. The more health problems someone has, the more likely they are to consult a GP, be prescribed drugs and be admitted to hospital, so further research is needed to identify cost-effective treatments for this patient group. If the results are positive, they will provide evidence for healthcare commissioners to fund yoga within the NHS.

One of Northumbria's main research strengths is the application of innovative exercise strategies to improve long-term health, along with behavioural interventions to promote physical activity and wellbeing in healthy, frail and diseased individuals.

DISCOVER MORE



"YOGA IS THOUGHT TO BRING WIDE-RANGING BENEFITS, SUCH AS INCREASES IN STRENGTH, FLEXIBILITY, BALANCE AND QUALITY OF LIFE, AND REDUCTIONS IN STRESS, ANXIETY AND DEPRESSION."

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DR GARRY TEW

Case closed



Some of history's most notorious unsolved murders could be laid bare thanks to new forensic research.

A method of forensic investigation, identified by a Northumbria University academic, could be used to crack major unsolved crime cases such as the murder of TV presenter Jill Dando in 1999 and the famous Bloody Sunday killings of 1972.

Dr Matteo Gallidabino, Senior Lecturer in Forensic Science at Northumbria, working with colleagues at King's College London and the Universities of Lausanne, Santiago de Compostela and Rome (La Sapienza), have discovered that machine learning – a form of artificial intelligence typically used by computer scientists to train robots – could be used to determine which ammunition. and ultimately which firearm, was responsible for a particular gunshot from the residue it left behind.

The difficulty with the Bloody Sunday killings was determining if gunshots were fired by civilians or military staff. The investigators found large amounts of gunshot residue all over victims and concluded that these resulted from shooting activities. It was later established, however, that these were likely due to the postevent transfer of contaminations from military staff – whose hands were rich with gunshot residue – to dead bodies. "Small amounts of residue, indeed, may be transferred by prolonged contacts with contaminated surfaces, such as those that took place when soldiers helped transport victims to the hospital after the event," according to Dr Gallidabino.

Machine learning uses a series of algorithms to model complex data relationships. The complex computer statistics implemented by Dr Gallidabino and the research team allow identification of the ammunition responsible for the different gunshot traces left at a crime scene with unprecedented accuracy. "If techniques such as those we are developing now were available at the time of Jill Dando's death and the Bloody Sunday killings, they could have been used to determine if gunshot residue came from civilian ammunition or military

fire, which would have been a critical piece of evidence," explains Dr Gallidabino, who specialises in statistical modelling and machine learning techniques for forensic applications. He personally developed and tested both the chemical technique and the mathematical models used in the approach. After collecting the gun cartridges, he was able to analyse and establish a relationship between the ammunition and the residue. Following on from this, the research team has called for this unique method to be applied much more widely in the field of forensic science. The research findings have been published in the Royal Society of Chemistry's Analyst journal – the home of fundamental discoveries, inventions and applications in analytical and bioanalytical sciences.



northumbria.ac.uk/appliedsciences

Jill Dando

On April 26, 1999, the 38-yearold BBC star was shot dead on the doorstep of her home in Fulham, West London in what remains one of the UK's most high-profile unsolved murders. Barry George, who lived a few minutes

from Jill's house, was jailed for eight years for her murder but was cleared after a retrial in 2008 following concerns raised over forensic evidence. The case remains open.

Having more knowledge about the source of gunshot residue at the time of the murder could have been useful, according to Dr Gallidabino and the rest of the research team.

"One single residue particle was found in the pocket of the coat of Barry George (the suspect)" he says. "This particle was shown to have a really similar composition to those found on the victim,



28 HEALTH

Tracking tiredness on the labour ward

Staff working on the labour ward of one of the North East's busiest hospitals will be given activity monitors to help them manage their tiredness while on night shift.

In a 24-hour economy, many thousands of people are required to work night shifts to ensure services and manufacturing can continue uninterrupted. To ensure continual care for patients, the NHS is one of the largest employers of staff who are required to work night shifts, but they can often feel fatigued as their body adjusts to being awake overnight.

In a new project to help workers manage this fatigue, midwives, doctors, nurses and other staff working on Newcastle's Royal Victoria Infirmary's labour ward will be given wearable activity monitors. The devices will be used alongside a speciallydeveloped app to predict how and when workers will be affected by extreme tiredness. The research is funded by The Health Foundation and is being carried out by Northumbria University and the Newcastle upon Tyne NHS Foundation Trust.

Dr Alison Steven, Reader in Health Professions Education in Northumbria's Department of Nursing, Midwifery and Health, is leading the research team and explained that their aim was to provide solutions that would improve decisionmaking and the management of emergencies, as well as safety and staff morale. This was backed by trainee anaesthetist Dr Roopa McCrossan, who said that it was difficult to take breaks when she worked the 12-hour-long night shift. "We deal with many unpredictable emergencies, such as trauma calls, cardiac arrest calls and urgent caesarean sections," she said. "Alerting clinical staff to when they are critically fatigued allows the whole team to take action." She said the project has potential to improve staff and patient safety and hoped that the results would allow hospitals to modify rotas to provide shift patterns less likely to cause tiredness.

The project forms part of Northumbria's research into integrated health and social care which explores new, sustainable and effective ways of promoting health and wellbeing across all age groups.

DISCOVER MORE

northumbria.ac.uk/nmh

"WE DEAL WITH MANY UNPREDICTABLE EMERGENCIES, SUCH

AS TRAUMA CALLS, CARDIAC ARREST CALLS AND URGENT CAESAREAN SECTIONS. ALERTING CLINICAL STAFF TO WHEN THEY ARE CRITICALLY FATIGUED ALLOWS THE WHOLE TEAM TO TAKE ACTION."

DR ROOPA MCCROSSAN

Is being a night owl bad for your health?

We all know that the time you go to bed at night and get up in the morning can make you feel refreshed or exhausted, but new findings from Northumbria show your bed time has more impact on your health than previously believed. The human body runs on a 24-hour cycle which tells you when to eat, sleep and wake. But if you work shifts or if this cycle is adjusted because you prefer to go to bed late, it can have a larger health impact than you might expect.

Dr Suzana Almoosawi of Northumbria's Brain, Performance and Nutrition Research Centre led an international review of research into 'chronotypes' – more commonly known as your body clock. She found growing evidence to suggest a higher risk of ill health in people who go to bed late. One of the key findings from her review was the discovery of an increased risk of type 2 diabetes in night owls. As they often eat shortly before bed, their glucose levels are being boosted when they should be at their lowest point of the day which can impact on their metabolism.

She also found that night owls tended to have unhealthier diets than people who wake early in the morning. They often miss breakfast and indicated that they ate more sugar, snacks and alcohol, putting them at higher risk of suffering from chronic disease. "In adulthood, being an evening chronotype is associated with greater risk of heart disease and type 2 diabetes, and this may be due to their poorer eating behaviour and diet," she said.

Dr Almoosawi conducted the research with experts from universities in Switzerland, Sweden and Singapore and their findings were reported in the prominent health journal, Advances in Nutrition.



northumbria.ac.uk/psychology



🔰 #TakeOnTomorrow



"IN ADULTHOOD, BEING AN EVENING CHRONOTYPE IS ASSOCIATED WITH GREATER RISK OF HEART DISEASE AND TYPE 2 DIABETES, AND THIS MAY BE DUE TO THEIR POORER EATING BEHAVIOUR AND DIET."

DR SUZANA ALMOOSAWI



"NOW THAT WE HAVE SEEN THESE RESULTS, I WOULD LIKE TO SEE THIS FORM OF THERAPY BEING ROLLED OUT IN PRISONS NATIONALLY AND INTERNATIONALLY."

PROFESSOR JASON ELLIS

Sleep therapy in prisons

Northumbria experts have revealed that just one hour of cognitive behavioural therapy could help to treat sleep deprived prisoners.

With over three-quarters of inmates reported to be affected by insomnia, a study by researchers from the Northumbria Centre for Sleep Research has found that therapy made notable improvements to their anxiety and depression. The research focused on 30 prisoners between 21 and 60 who had all reported difficulty sleeping.

Prisoners can spend up to 22 hours a day in their cells depending on their crime, with strictly-enforced routines and limited access to sunlight and physical exercise. These conditions have lead researchers to believe that around 61% of prison inmates suffer with chronic insomnia, which can

lead to other behavioural issues such as anger, aggression and self-harm. Professor Jason Ellis, Director of the Northumbria Centre for Sleep Research, believes that the lack of control over factors that most people have control over have resulted in the high levels of insomnia. "These factors, combined with the stress of imprisonment and all that it entails, are likely to make inmates far more vulnerable to insomnia," said Professor Ellis. "We knew from an earlier study with the general population that this single session of therapy also had an impact on anxiety and depression, so we were certainly pleased to see the same thing

happen in a prison context. Now that we have seen these results, I would like to see this form of therapy being rolled out in prisons nationally and internationally."

29

HEALTH

The findings of this research are the first of its kind in the world, and have been published in the latest edition of Behavioral Sleep Medicine – the journal for research into the management of insomnia in the prison environment and the evaluation of Cognitive Behavioral Therapy as a means of intervention.



northumbria.ac.uk/psychology

Northumbria researchers in Antarctica

Deep impact

"WHAT HAPPENS IN ANTARCTICA DOES NOT STAY IN ANTARCTICA!"

PROFESSOR HILMAR GUDMUNDSSON

Research by glaciologists from Northumbria is featured in a national campaign highlighting how the work of universities is improving everyday life.

Miami, Rio de Janeiro, Shanghai, Hong Kong and London are just some of the world's major cities that could be devastated by rising global sea levels. Home to almost 40 million people, all are based by the sea or have extensive networks of rivers and canals running through their centres. And they are all at risk of being submerged as ice at the North and South Poles melts due to climate change, causing sea levels to rise.

Northumbria academics are leading research into the future of one huge Antarctic glacier and their work is recognised in a new listing of the best breakthroughs made by UK universities.

At almost the size of Great Britain, the Thwaites Glacier is a major cause for environmental concern. If this individual glacier were to collapse, the impact would be huge. The world's geography would fundamentally change as the glacier holds enough ice to lift global sea levels by up to five metres. Millions of people living in coastal regions, islands and cities based on rivers would be displaced.

But when will the glacier collapse, and how? Is it already starting to break up now, or is this something that will happen in future, affecting people in the centuries ahead? How exactly will it break up? These are all questions that Northumbria researchers are trying to answer. By using specialist techniques to examine how the glacier has evolved over time, they can assess how it has responded to changing climates throughout history and, as a result, predict how it will behave in future. "What happens in Antarctica does not stay in Antarctica!" explains Hilmar Gudmundsson, Professor of Glaciology in the Department of Geography and Environmental Sciences, who is leading the development of a modelling tool that can predict how the glacier will behave under certain conditions. This will allow his team to simulate how different environmental circumstances will affect how the ice flows.

"Antarctica is currently losing mass at an increasing rate, and through its impact on global sea level, the ice sheet is already affecting our lives," he says. "New data and numerical modelling done as part of this project promises to provide a much-improved understanding of why this area is changing so quickly. And importantly, we will be able to provide better estimates of the likely future contribution of this region to global sea level rise."

Fellow glaciologist, Professor John Woodward, who leads the University's Faculty of Engineering and Environment, will spend three months in Antarctica next year. He is working to find out if the glacier has collapsed in the past. If it has, its bedrock will have

been uncovered and Amu exposed to cosmogenic rays from space. As such, he will navigate the continent to find

the best sites to drill deep into the bedrock, 200 metres below the ice where he hopes to find evidence of past atmospheric exposure. If he finds it, it means that we can understand whether the way the glacier is behaving today is a unique, rapid and catastrophic response to climate change, or if it is simply part of the normal life cycle of these Antarctic glacier systems.

East Antarctica

South Pole

West

Antarctica

Northumbria's research on the Thwaites Glacier features in Universities UK's #madeatuni campaign which highlights the best research and discoveries made by British universities.



Although we believe that rising sea levels are a danger to tropical coral reef islands, new research from Northumbria has found that The Maldives, which are known as the lowest-lying nation in the world, actually formed when sea levels were higher than they are today.

Standing less than three metres above sea level, the Maldives are regarded as one of the most beautiful, pristine natural habitats in the world. Keen to discover more about how and when they were formed, geographer Dr Holly East travelled to the southern hemisphere to investigate and made a surprising discovery. The East found that The Maldives formed three to four thousand years ago following distant storms off the coast of South Africa. These storms caused large waves – described by researchers as high-energy wave events – so strong that they broke pieces of coral from reefs. Carried across the ocean, they gradually began to accumulate and built up to create the foundations for the reef islands. At the time, the sea level was up to 0.5 metres higher than today which made the waves more powerful, meaning that higher sea levels were critical to the construction of the islands. As a result, Dr East said the findings provide some optimism that the provide findings provide some optimism that the provide some optimism that findings provide some optimism that the provide some optimism that the pro

them. However, this optimism comes with a caveat. The islands can only grow if healthy coral reef is available to provide the "bricks" needed to build the islands and this could present a problem, explains Dr East. "Corals face a range of threats under climate change, including increasing sea surface temperatures and increasing sea surface temperatures and ocean acidity. If the reef is unhealthy, we could end up with the perfect building conditions but not the

building conditions but not the bricks." Another key factor to consider is the changes to the region in the 3,000 years since the islands formed. More than 400,000 people now live on The Maldives and they are a top tourist destination. If huge waves were to hit the islands again in future, they would cause devastation in the short term, making them less habitable for humans. To undertake her research, Dr East collected 28 'cores' from the reef island. This is a similar technique to coring an apple, achieved by hammering a tall aluminium pipe into the ground until it reaches the foundations. The pipe collects layers of sediment in the ground that have built up throughout the island's history which can then be analysed by researchers. This tells the researchers the islands' story - what it is made of and when the various layers were created. The study was funded by the Natural Environment Research Council and was conducted in partnership with universities in Canada and New Zealand. The findings were published in the prestigious international journal Geophysical Research Letters.



northumbria.ac.uk/extremeenvironments

PERFECT BUILDING CONDITIONS BUT NOT THE BRICKS."

DR HOLLY EAST

High seas could help to build coral islands

"IF THE REEF IS UNHEALTHY, **WE COULD END UP WITH THE**

32 CULTURE



Brush with success

With a total value of over £40,000 the Woon Foundation Painting & Sculpture Prize is one of the largest art prizes in the UK, second only to the Turner Prize. Jointly hosted by Northumbria and BALTIC Centre for Contemporary Art, it offers three prizes to students studying in the UK. All shortlisted artists receive £300 and a further £200 is allocated to each shortlisted artist to cover travel and accommodation so they may attend the exhibition preview and award ceremony at Northumbria in July 2019. The winner will receive a £20,000 year-long fellowship, including their own studio space at Northumbria, mentoring from staff at both the University and BALTIC, and the opportunity to host a final exhibition of their work. Two runners up will also receive cash prizes of £9,000 and £6,000.

Jean Brown, Director of Northumbria's Art Collection, believes the Woon Art Prize is a hugely exciting opportunity for all three winners. "The prize supports a Fellowship designed to offer a fine art graduate a structured opportunity to further develop their critical and conceptual understanding, as well as their studio practice. I would strongly urge final year Fine Art students from across the UK to apply."

The prize is free to enter, with applications open until 1 April. The shortlist will include up to 10 artists, with the winner announced during a prize giving ceremony at Northumbria's University Gallery, which re-opened last year following extensive renovations. This included the unveiling of the new Woon Gallery of Asian Art – a rare and unique collection of Buddhist and Asian art worth more than £6.4m, which sits alongside contemporary pieces by the likes of Pablo Picasso, Damien Hirst and Andy Warhol.

"THE WOON FOUNDATION PAINTING & SCULPTURE PRIZE SUPPORTS A FELLOWSHIP DESIGNED TO OFFER A FINE ART GRADUATE A STRUCTURED OPPORTUNITY TO FURTHER DEVELOP THEIR CRITICAL AND CONCEPTUAL UNDERSTANDING AS WELL AS THEIR STUDIO PRACTICE."

ASSOCIATE PROFESSOR JEAN BROWN

DISCOVER MORE baltic.art/woonprize

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THE WOON PRIZE

The Woon Foundation Painting & Sculpture Prize was established by philanthropist and Northumbria alumnus Mr Wee Teng Woon, and his three brothers, through the Woon Brothers Foundation.

After graduating from Northumbria with a BA (Hons) Law in 1981, Wee Teng went on to become a highly successful lawyer. He developed a passion for art from a young age and in 2012 he and his brothers established The Woon Foundation Painting & Sculpture Prize.

In total, over the last decade, the Woon Brothers Foundation has supported Northumbria University and its students through prizes, grants and scholarships totalling more than £600,000.

Medieval carol brought to light



A lost fifteenth-century Christmas carol has been discovered by Northumbria University's Vice-Chancellor Professor Andrew Wathey.

After more than 550 years in the dark, the medieval piece was discovered in the course of Professor Wathey's work on a forthcoming edition of manuscripts of fifteenth-century music. This is set to appear in the British Academy's Early English Church Music series. Professor Wathey, who is co-founder of the Digital Image Archive of Medieval Music (DIAMM), transcribed the piece of music, which is housed in the Cambridge University Library. The rediscovered carol, probably not performed since the fifteenth-century, saw its first performance in modern times by the girls' choir at Newcastle Cathedral on 24 December.

The original manuscript is in very poor shape, according to Professor Wathey, who goes on to say: "Only the top part survives, a single unaccompanied vocal line with both pitch and rhythm notated, usually a signal that other voice parts were to be provided from memory." The carol was added at the foot of two pages of a service book, which itself was later broken up and used to bind another manuscript, bought at auction by Cambridge University Library in 1996. The carol, Parit virgo filium, is copied on to the leaves of the service book which was used at the fourth Saturday in Advent. "There are a handful of cases from this period where polyphonic music was jotted into service books, but this is the only such instance involving a carol. It provides fascinating new evidence for the use of carols in the Christmas liturgy in the fifteenth century", adds Professor Wathey.

Professor Wathey's research focuses on the social and cultural history of music in late-medieval England and France. He is a member of the British Academy's Early English Church Music Committee, as well as a Fellow of the Royal Historical Society, the Society of Antiquaries and of the Royal Society of the Arts.



"THIS PROVIDES FASCINATING NEW EVIDENCE FOR THE USE OF CAROLS IN THE CHRISTMAS LITURGY IN THE FIFTEENTH CENTURY."

PROFESSOR ANDREW WATHEY CBE







Fashion futures

Fashion industry experts, including Northumbria alumni, have been inspiring the next generation of fashion students and designers by sharing their experiences.

What do French fashion house Louis Vuitton, Swedish highstreet clothing brand H&M and US sportwear giant Nike all have in common? They are all brands where graduates from Northumbria's fashion programmes have gone on to forge successful careers.

As many world-leading fashion designers, photographers and writers will attest, being given the opportunity to spend time with industry professionals can often be key to choosing the right career path – and to getting that first foot on the fashion industry ladder. With this in mind, a selection of Northumbria fashion alumni recently took part in an event aimed at celebrating the University's success stories and encouraging the fashion stars of the future. Graeme Fidler, Imogen Davies and Jennifer Barrett have all built successful careers within different areas of the fashion industry. During the recent Catwalking Live event, at the Bowes Museum in County Durham, they shared their stories and top tips with young people interested in following in their footsteps.

The event was organised by Emma Jane Goldsmith, Senior Lecturer in Fashion. As she explained: "Northumbria's fashion graduates have a strong track record of establishing highly successful careers at a wide range of levels in the fashion industry, with many going on to work with highlyrespected and well-known fashion designers and brands. We are always extremely pleased to welcome our brilliantly successful graduates back, to inspire current and prospective students to go on to become the next generation of successful fashion designers and influencers."

The Catwalking Live event also featured a talk by renowned fashion photographer Chris Moore who, during his 60year career, has captured iconic moments at shows such as Chanel, Dior, Alexander McQueen and Vivienne Westwood. He also has close ties with Northumbria, having photographed the work of final year Fashion Design students since 1991 and being awarded an honorary degree in 2013.



northumbria.ac.uk/fashion

"NORTHUMBRIA'S FASHION GRADUATES HAVE A STRONG TRACK RECORD OF ESTABLISHING HIGHLY SUCCESSFUL CAREERS AT A WIDE RANGE OF LEVELS IN THE FASHION INDUSTRY, WITH MANY GOING ON TO WORK WITH HIGHLY-RESPECTED AND WELL-KNOWN FASHION DESIGNERS AND BRANDS." Left: Staff and alumni from Northumbria's successful Fashion programme

OUR SUCCESS STORIES



Graeme Fidler – Creative Director / Design Consultant, Several

Graduated 2000: Fashion

Since graduating from Northumbria, Graeme has worked with some of the fashion industry's greatest image makers and art directors, including Alasdair McLellan, Edward Enninful, and Olivier Rizz. In 2000, Graeme won the Royal Society of Arts Student Design Award. He has twice been nominated for the British Fashion Council Menswear Design of the Year and in 2004 was named Arena Magazine's Menswear Designer of the Year. In 2014, after working at Polo Ralph Lauren, Aquascutum, and Bally, Graeme launched menswear brand Several; bringing together a label, design consultancy, and webstore.



Imogen Davies – Fashion Photographic Agent at One Represents LTD

Graduated 2012: Fashion Communications

Imogen Davies is a talent agent, representing fashion photographers worldwide. Her artists shoot campaigns for clients such as Topshop, Whistles, Jaeger, GQ Style, Vogue Russia and Harper's Bazaar. Previously, she worked as the Shoot Coordinator for the French Connection-owned brand Toast, and at international model agency Viva London. During her time at Northumbria, she worked in event production at London Fashion Week for several seasons.



Jennifer Barrett – Founder and Managing Director, This is Creative Enterprise

Graduated 2001: Fashion Design and Marketing

Jennifer is founder of This is Creative Enterprise (TICE), which works with businesses, schools, colleges and universities to give young people, aged four to 24, a taste of the jobs and opportunities that exist within the commercial creative, design and digital industries. In 2016, TICE was presented with a national Design Skills award by the careers advice charity Creative & Cultural Skills for demonstrating 'viable opportunities to young people' across the creative industries.

Double funding for law school

Left: Dr Nicola Wake

"NORTHUMBRIA LAW SCHOOL'S DEDICATION TO THIS ISSUE PLACES THEM AMONGST THE UK'S LEADING UNIVERSITIES COMMITTED TO ADVANCING CHANGE WITHIN THE HUMAN TRAFFICKING AND MODERN SLAVERY LEGAL

ARENA."

PHILIPPA SOUTHWELL



Northumbria Law School has become the first of the post 1992 modern universities to be awarded two rounds of research seminar funding from the Modern Law Review (MLR) in the same year.

The achievement recognises the University's rising research quality and the significance of cross disciplinary collaboration. Established in 1937, the Modern Law Review promotes legal education through its respected law journal, and by funding lectures, seminars and other activities connected to the study and practice of law. The Funding to Northumbria follows successful bids from the Law School to host two major research seminars during 2019.

Dr Nicola Wake, Associate Professor in Law, with Professors Tony Ward and Martin Evison led on the first bid to host a major international seminar entitled 'Human Trafficking and Modern Day Slavery: Criminal Law and Evidence', which will take place at Northumbria in the autumn. Academics will be joined by other legal experts including Philippa Southwell, a leading lawyer defending victims of trafficking at all levels of the criminal justice system; Pam Bowen, Operations Director of the Crown Prosecution Service; and prosecuting Barrister Caroline Haughey QC.

Dr Wake describes the event as bringing together leading practitioners and academics working in the counter human trafficking and modern slavery sector. "We will explore criminal law, human rights, and sociolegal issues connected to the use of forensic science in human trafficking. Delegates will consider both existing and potential new safeguards for victims and seek to outline new ways that forensic science can be used to tackle the challenges faced in identifying victims and perpetrators."

"We aim to cultivate new approaches to early victim identification and tackling modern slavery," added Philippa Southwell. "Northumbria Law School's dedication to this issue places them among the UK's leading universities committed to advancing change within the human trafficking and modern slavery legal arena," she added. The second successful MLR bid will fund an international research

seminar 'Revisiting Pressing Problems in the Law: What is the Law School for? 20 Years on' to be held at Northumbria Law School in June. Senior Lecturers Victoria Roper and Dr Rachel Dunn collaborated with Nottingham Law School on the bid to provide a forum for reassessing the role of the law school both in the UK and in other jurisdictions in light of ongoing change. "Northumbria has long been at the forefront of global legal education and we are extremely grateful to receive this funding at a time when legal education is confronting significant change," explained Victoria. "The seminar will stimulate discussion about how law schools should be

responding to challenges such as globalisation, technological disruption, regulatory change and Brexit."

Head of Law at Northumbria, Professor Michael Stockdale, believes the double funding highlights Northumbria's reputation for producing impactful, international research that is helping to provide genuine solutions to serious societal issues. "Being the first new university to receive a doubleaward in the same year is fantastic recognition," he said.



Business student takes to the small screen



ENTREPRENEURIAL BUSINESS MANAGEMENT (EBM) STUDENT JOSH WILKINSON

A Northumbria student has landed a starring role as co-host of a new online mini-series, showcasing the impact of The National Lottery funding in the North East.

Entrepreneurial Business Management (EBM) student Josh Wilkinson took to the streets of Sunderland recently to meet and interview some of the inspirational people behind Lottery-funded initiatives in the city. He was chosen ahead of 25 other applicants after auditioning for a part in the Untold Stories mini-series, which features good causes across Wearside that have benefited from The National Lottery funding. During filming he was joined by Sunderland-native and co-host Katie Bulmer-Cooke, former contestant on BBC One show The Apprentice. EBM students at

EBM students at Northumbria are required to start up and run their own businesses, and Josh believes this experience helped him impress The National Lottery panel and secure the role. Talking about the EMB course he explained: "It's very much about learning by doing, and has given me the confidence and ability to talk with people and really put myself out there – and have the courage to pursue something I have wanted to do for a long time." Lucy Hatt, Senior Lecturer in Entrepreneurship,

Innovation and Strategy at Northumbria, added: "We are all really excited for Josh. It is an example of the enterprise, drive and ambition demonstrated by our students, and why studying here is such a stimulating place to learn and teach."

The mini-series is available to view via The National Lottery Facebook page and You Tube – search Untold Stories Sunderland.





Living Lab sparks innovation in public services

Delivering good public services is a team effort with multiple agencies involved – but getting them all to work well together can be a constant challenge. To help find a solution, a European-funded workshop held recently at Northumbria's newly opened Living Lab has developed new methods of collaborative working.

More than 30 international researchers and public service practitioners attended the Co-Creation of Service Innovation in Europe (CoSIE) workshop, led by Professors Rob Wilson and Mike Martin from Newcastle Business School. It was hosted in the Newcastle Business School Living Lab, which uses digital tools to analyse fundamental interactions between service providers and users to find better ways of doing things.

The CoSIE project is a threeyear research and development initiative worth over €3m and involving nine interlinked projects across Europe looking to transform the way service providers work together and interact with service users. The Newcastle Living Lab at Northumbria is at the forefront of these efforts. One example at the workshop highlighted how the Newcastle Living Lab is helping to transform the probation service in Hull by establishing better multi-agency collaboration. By involving the prison service, probation service, police, health service, mentors and even relatives of offenders, the work has led to better outcomes for offenders and less reoffending. Professor Rob Wilson

Professor Rob Wilson understands exactly how the challenges facing businesses and communities can seem difficult and intractable, but as he explains: "Taking a Living Lab-approach can evolve thinking, innovation and adaptation to new pressures and expectations to deliver workable solutions for complex, multi-faceted problems. It was fantastic to welcome our CoSIE project partners to Northumbria. This project is testament to to our international reputation for collaborating with research active academics around the world." Explaining the use of technology, Professor Mike Martin adds: "Our visualisation and animation tools enable stakeholders with diverse perspectives to make sense of large scale, complex social and technical systems. With the Living Lab we aim to support the wider

adoption of these new tools and techniques." The Newcastle Living Lab is part of the wider European Network of Living Labs (ENoLL) and is putting Northumbria at the heart

putting Northumbria at the heart of international efforts to solve complex problems in public service delivery.



northumbria.ac.uk/nbs



STUDENTS FROM THE BUSINESS CLINIC WITH CLIENTS HEXHAMSHIRE ORGANICS

Business Clinic goes digital

Northumbria's student-led consultancy service, which sees students providing free advice to small businesses, has received thousands of pounds of Government funding to scale-up the programme across the UK.

Established in 2013, the Business Clinic at Northumbria has seen hundreds of students working in creative and highly successful collaborations with real businesses. The innovative consultancy project sees final year business students work with local companies to provide advice in areas such as marketing, HR, finance, product development and strategic planning. The value of the support provided over the past six years is estimated to be more than £1.2m.

The Business Clinic has now been awarded £44,000 to develop a digital version of the project which can be scaled up and then offered to far more SMEs - by Northumbria and other universities. A Digitally Enabled Business Clinic (DEBC) will be part of the Government's Industrial Strategy to help boost productivity among businesses looking for additional support. The sheer number of SMEs across the UK means a more accessible DEBC service would not only benefit the businesses, but also offer greater consultancy opportunities to students, including those at Northumbria.

As the DEBC will not require physical spaces to operate in, it makes the project very cost effective and quick and easy to access virtually anywhere, through webinars and other digital channels.

The funding to develop the DEBC project has come from the Government's £2 million Business Basics Fund – part of the Department for Business, Energy and Industrial Strategy (BEIS), which aims to help UK businesses make better use of technology and modern management practices. The Business Clinic was among just 15 successful bids across the whole of the UK.

Celebrating the award, Nigel Coates, Director of the Business Clinic, said: "This funding is a significant achievement that reflects the positive impact the Business Clinic has - both for our clients and in the learning experience it offers to our students. Thanks to the quality and commitment of our students, and to the professional support from colleagues, we were able to make a compelling case for this funding. We know how successful our own Business Clinic has been; the advantages of a digitally-enabled model mean that this support will be available to more SMEs quickly and easily.'



Leading the global fight against corruption



Northumbria has been awarded research funding to tackle global corruption.

The University was selected as one of just 14 research partners around the world to work on the Global Integrity Anti-Corruption Evidence Programme (GI-ACE). Led by Dr Jackie Harvey, Professor of Financial Management at Newcastle Business School, the Northumbria team will undertake a research project entitled: Practical interventions for uncovering and identifying 'Beneficial Ownership' as a mechanism to recover the proceeds of corruption - A Nigerian case study. They will investigate whether current international anti-corruption frameworks actually work, or could be improved to prevent the proceeds of corruption being moved across the world. GI-ACE is a partnership between the UK Department

for International Development (DfID), and Washington DC- based anti-corruption and open governance organisation Global Integrity. The \$7.1 million GI-ACE programme seeks to establish new evidence aimed at helping policy makers, practitioners and advocates design and implement more effective anti-corruption measures.

Dr Harvey believes securing this funding reflects Northumbria's growing international reputation for world-leading research. She added: "GI-ACE is a research programme of global significance. Corruption is a major inhibitor to economic growth, discouraging to domestic and foreign investment and destabilising of governments.

"Unsurprisingly, international attention has intensified in recent years with global initiatives to counter corruption and money laundering. As a result, national governments have had to increase transparency, reducing



"CORRUPTION IS A MAJOR INHIBITOR **TO ECONOMIC GROWTH**, DISCOURAGING **TO DOMESTIC AND FOREIGN INVESTMENT AND DESTABILISING OF GOVERNMENTS.** UNSURPRISINGLY, **INTERNATIONAL ATTENTION HAS INTENSIFIED IN RECENT YEARS WITH GLOBAL INITIATIVES TO COUNTER** CORRUPTION **AND MONEY** LAUNDERING."

DR JACKIE HARVEY

opportunities for the legitimate legal and financial infrastructure to be used to disguise and move the proceeds of corruption. By creating a simpler, re-balanced and importantly cost-effective solution, we aim to contribute to the prevention of laundering of the proceeds of corruption and to their recovery."

An assessment of what works in Nigeria to prevent corruption will provide valuable empirical evidence of what may be transferable to other developing countries. It will allow Northumbria's cross-disciplinary research to better understand current processes and highlight system weaknesses.



Three graduates, three businesses, one university!

What do a musician from Manchester, a guided tour operator from Northumberland and a videographer from Teesside have in common? They are all graduates of Northumbria's Entrepreneurial Business Management (EBM) programme and are running successful businesses just months after leaving university.

The EBM programme requires students to start up and run their own businesses, developing commercial ideas and managing their enterprises independently.

Rob Lundgren-Jones, 21, from Alnwick, graduated last summer. He owns and runs Lundgren Tours, providing guided coach and walking tour experiences throughout Northumberland. Since launching in 2017, Rob has hosted over 1,000 visitors, doubled his revenue and is on target to generate a minimum £50,000 turnover this year. His success led to Lundgren Tours winning silver in the 'Guided Tour of the Year' category at the North East England Tourism Awards 2018.

Rob says his inspiration for the business was Northumberland's unique history, wild landscapes, wonderful people and unspoiled night skies. But he added: "The support and advice from tutors and friends on the EBM programme really gave me the confidence and entrepreneurial mindset to go for it. I've made mistakes but learning by doing is genuinely the right path for me. I want to make Lundgren Tours the best tour provider in the North East of England."

Fellow EBM graduate Cole Robinson, 22, from Teesside has turned his passion for travel and storytelling into a freelance video production company. Cole has created videos for international engineering firms, tourist boards, charities and high–end ladies' fashion brand 'Tiska London'.



With no formal training Cole has developed a unique style which clearly works for his clients and is set to see turnover for his business double during the next 12 months. Explaining his approach, he said: "Clients hire me to really understand what drives their business on a deeper level and to convey this in video for their audience. My strategy is to become a world-leading creative content producer, and to set up my own videography agency."

videography agency." Joey Swindells, 22, also completed the EBM programme last year. The passionate musician from Bolton has set up 'The Rookery', which brings other musicians together as a community working to promote gigs and sell their records. The Rookery has an established and growing community in Newcastle and has recently launched in Manchester. programme. "University was not on my radar, but I couldn't believe how good the EBM programme sounded with such a hands-on approach, the freedom to do things your own way and the potential to gain so much valuable experience in just three years." Senior lecturer in entrepreneurship Natalia Blagburn

As Joey explains, his decision to

enrol at Northumbria was based

entirely on the appeal of the EBM

attributes much of the success of all three graduates to their ability to turn something they love doing into viable businesses. "They are passionate, creative and committed – everything you could hope for in young entrepreneurs."

DISCOVER MORE

northumbria.ac.uk/ebm

"UNIVERSITY WAS NOT ON MY RADAR, BUT I COULDN'T BELIEVE HOW GOOD THE EBM PROGRAMME SOUNDED WITH SUCH A HANDS-ON APPROACH, THE FREEDOM TO DO THINGS YOUR OWN WAY AND THE POTENTIAL TO GAIN SO MUCH VALUABLE EXPERIENCE IN JUST THREE YEARS."

GRADUATE JOEY SWINDELLS



Philanthropists support students' international study

Recently announced scholarships and prize programmes are providing financial support for students studying at Northumbria's new Amsterdam campus.

Investment and wealth management business Brewin Dolphin has pledged funding to support student study in Amsterdam over the next three years. At the same time Tom Harrison, a member of Northumbria's Board of Governors, has announced further financial support for studying in Amsterdam through the Tom and Mary Harrison Prize.

Northumbria opened its Amsterdam campus last year, building on a successful collaborative partnership with Amsterdam University of Applied Sciences (AUAS).

"THEY ARE CREATING OPPORTUNITIES THAT WILL ENRICH BOTH THE LEARNING EXPERIENCE AND ENHANCE CAREER PROSPECTS FOR THE SUCCESSFUL STUDENTS." The campus currently offers two masters programmes, and is creating overseas undergraduate study opportunities for UK students at Northumbria's Newcastle and London campuses.

Northumbria partner Brewin Dolphin will provide scholarship funding for a student over each of the next three years. The Tom and Mary Harrison Prize money will be awarded to students with the best thesis studying MSc Business with International Management and MSc Project Management at the Amsterdam campus. Welcoming the generous donations, Lucy Winskell

donations, Lucy Winskell OBE, Pro Vice-Chancellor Employability and Partnerships at Northumbria, reflected: "Philanthropic gifts such as these will create opportunities that will enrich the learning experience and enhance career prospects for the successful students."

DISCOVER MORE

LUCY WINSKELL OBE

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"WE HAVE PIONEERED AN INCREASE IN PARTICIPATION ACROSS THE UK AT BUCS LEVEL FOR PARA SWIMMING WITH OTHER UNIVERSITIES NOW FOLLOWING OUR LEAD."

HEATHER STEEL.

With four of its students bringing home six medals from the Paralympic Games in Rio, it is little wonder that Northumbria University's reputation for disability sport has gone from strength to strength in recent years.

This year, the University has been shortlisted in four categories at the North East Disability Sport Awards that recognise the sporting achievements of participants, clubs, coaches and volunteers. Japanese Paralympian and Northumbria student, Taka Suzuki, is a contender for the Male Personality Award, while Computer Science student Beverley Held has been shortlisted for the Participant Award. Northumbria Sport Foundation, the University's charitable arm, has been nominated for the Outstanding Club or Group Award and the University's Disability Sport Strategy has been shortlisted for the Education Award.

Masters student, Taka Suzuki, enjoyed huge success at the Asian Para Games in October 2018, which saw the Japanese swimmer bring home five gold medals and break five new Para-Asian records. Taka came to England to study Sport Management at Northumbria, before going on to study for his Masters at the University in January.

Beverley Held, a second year Computer Science student at Northumbria, has cerebral palsy and joined the Northumbria wheelchair basketball club in her first year. Having never played the sport before joining Northumbria, Beverley has been shortlisted for the Participant title at this year's North East

Disability Sport Awards. "Bev came to the club having never played the sport and has come on leaps and bounds," said Brogan O'Connor, Student and Staff Participation Manager at Northumbria. "She is a pleasure to work with and we're so happy for her to be given this recognition for her hard work." Northumbria Sport Foundation has been shortlisted for the Outstanding Club or Group award; the charity runs weekly sport sessions for adults and young people with learning disabilities in the University's

fantastic sporting facilities.

over a stone in weight since

starting the weekly sessions,

and family members have

Adults who take part have lost

reported day-to-day increases in activity levels since they started attending sessions at the University. Young people have been able to take some of the activities they have learnt from Northumbria's students and staff and use them back at school.

The University's Disability Sport Strategy, which launched in 2013 to support para athletes who want to study while pursuing their sporting careers, has been shortlisted for this year's Education Award. As part of the strategy, Northumbria's 'Faster, Higher, Stronger' dinner in 2017 celebrated the success of the University's Para athletes in Rio, while raising funds to enable Northumbria to continue

supporting disabled athletes: "We have pioneered an increase in participation across the UK at BUCS level for para swimming with other universities now following our lead," said Heather Steel, Performance Sport Manager at Northumbria. "Many universities now have specific disability sport strategies offering scholarships to para athletes, and top sporting institution Loughborough is now looking to appoint a specialist para sport strategic manager for their programme."



northumbriasport.com



California Calling

Two Northumbria University students are heading stateside to take part in an eightweek strength and conditioning internship at California State University, home to one of the country's leading sports teams.

Frazer Solomon and Mathieu Othwaite, both Strength and Conditioning students at Northumbria, were chosen to work with the United States' elite National Collegiate Athletic Association (NCAA), a Division 1 University, which is represented by the Cal State Northridge Matadors basketball team.

The internship, which is provided through a partnership between Northumbria and Sheffield Hallam University, gives two Northumbria and two Sheffield Hallam students the opportunity to work in an elite sporting environment, coaching some of the best athletes in the world. Frazer and Mathieu will also receive mentorship from top strength and conditioning coaches.

Last year, Northumbria graduate Alex Webb had the opportunity to spend time in the US with the strength and conditioning internship and was keen to stress how much of an impact it had upon his professional career. "Over the summer I was lucky enough to go over to California and work at a Division 1 college based in

Los Angeles," explained Alex. "The experiences I gained and people I met will stay with me forever and I learned so much about myself as both a practitioner but even more so as a person." The internship is a great opportunity for students to network and make connections with influential people within the industry. "Working within a Division 1 University means student athletes tend to be from all over the world," said Alex. "So it's a great opportunity to meet new people and share your coaching experiences with similar people with different coaching philosophies."

Alex was able to take the opportunity to learn from Bob Alejo, a coach with more than 30 years' experience in the industry, and secured opportunities to visit the Strength and Conditioning departments at the University of California (UCLA), Pepperdine University and LA Galaxy, where footballer David Beckham famously played. "What I can say is this opportunity is a once in a lifetime experience which you'll never forget," beamed Alex. "You'll make friends for life and you never know what opportunities may arise from it."

Both Frazer and Mathieu are part of the Northumbria Sport student development (volunteer) programme, which has just been shortlisted for the Sport and Recreation Alliance Community Awards in the volunteering category.



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Left: Student volunteer Alex Webb coaching in the gym

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BRILLIANCE IN BUCS

Northumbria University has started its 2019 British Universities & Colleges Sport (BUCS) campaign with a bang, achieving top five status across a range of sports.



NORTHUMBRIA UNIVERSITY WOMEN'S FOOTBALL TEAM CELEBRATING A WIN

The University is celebrating another successful start to the year for its student sports teams in BUCS - the UK's league for student sport. Northumbria currently sits 13th overall in the league ahead of 148 institutions. Even with a couple of months remaining in the 2018/19 season, Northumbria has already cemented a 'best in the UK' position in several sports by securing premier league titles in men's and women's football, women's basketball, men's golf, men's rugby league and women's futsal. In addition, both men's and women's volleyball teams, women's rugby union, men's futsal and men's water polo, finished a close second in their respective premier leagues.

Northumbria's Performance Sport Manager, Heather Steel reflected on the season to date. "I am really pleased with our student athletes' performances in BUCS this year and we have had some outstanding results," she said. "To be crowned BUCS Premier League Champions in a number of sports so early in the season just shows what a

dominant force we are in these key sports." Heather went on to highlight some individual outstanding performances, including an outstanding result from student golfer, James Wilson, who won the BUCS Midlands golf stroke play event. "In addition to our team sport success, we certainly cannot forget the nine golds, four silvers and three bronze medals brought home by our para swimmers at the BUCS long and short course swimming events, as well as a gold medal in karate from student Rory Kavanagh at the recent BUCS Nationals in Sheffield," added Heather.

And there is still more to play for before the BUCS season ends in April. The men's rugby union team is still battling hard in the BUCS Super Rugby competition, targeting a Twickenham trip to the cup finals. Northumbria will also see a large contingent at the BUCS Big Wednesday Championship and trophy finals in Nottingham.



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DID YOU KNOW?

Futsal is the fastest growing indoor sport in the world. It is a form of five-a-side football played on a hard and smaller court, usually indoors, with a slightly different ball which is not as big as a traditional football.



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CALIFORNIA CALLING

Two Northumbria University students are heading stateside to take part in an eight-week strength and conditioning internship at California State University. **Page 39**



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Making a difference today and tomorrow

Northumbria Sport has won a prestigious national volunteering award after its students were recognised for their work in driving a positive change in society.

The University was competing for the National Sport and Recreation Alliance volunteering award, which also saw Loughborough Sport, at Loughborough University, and Sport England's Active Surrey programme shortlisted. The Sport and Recreation Alliance's volunteering award seeks to celebrate clubs and programmes that go the extra mile to make volunteering accessible to all people. The 297 people taking part in Northumbria Sport's volunteering programme logged over 9,000 hours of work between September 2017 and August 2018.

Northumbria's Sport Development and Engagement Manager, Sue Vout, said she was delighted with the programme's achievements and the result. "The Sport and Recreation Alliance is the umbrella body for sport and recreation in the UK and is the voice of the sector with government, policy makers and the media," she said. "In 2017, our student volunteer programme won the BUCS workforce programme of the year award, demonstrating its excellence among other universities. "Unlike that award, the Sport

and Recreation Alliance award is open to all types of organisations across the country, clearly demonstrating how outstanding our work in this area is."

Student and staff development manager, Kate Hansbury, and Sarah Stephenson, sport services assistant, oversee the sport volunteering programme at Northumbria and paid testament to the volunteers and hosts they work with.

"We are lucky to work with such fantastic volunteers, as well as internal and external hosts who offer such exciting opportunities for them to experience," said Kate. "Without these generous host organisations there wouldn't be a programme, so being nominated for this award is an achievement for everyone involved." Northumbria Sport were

presented with the award by His Royal Highness Prince Edward.



"WE ARE LUCKY TO WORK WITH SUCH FANTASTIC VOLUNTEERS, AS WELL AS INTERNAL AND EXTERNAL HOSTS WHO OFFER SUCH EXCITING OPPORTUNITIES FOR THE STUDENTS TO EXPERIENCE."

KATE HANSBURY