

Postgrad life

**Professor Marianna Fotaki on
business, ethics and refugees**



**Plus: startup
incubators, renewable
energy and student
life after Brexit**

Post-Brexit postgrads What happens next?

Many students see postgrad courses as a chance to study abroad but, with Brexit looming, how long will this continue? In this special supplement we look at the Brexit effect and hear from the vice-chancellor at De Montfort University, who warns: "It is no secret these are difficult times for British universities hoping to recruit postgraduate students from abroad."

Dutch student Sjoukje van Oosterhout, who is studying for an MSc in European politics at London School of Economics, is sick of hearing about Brexit: "My life is dominated by it. I hear the word more than my own name." However she recommends that British students consider postgraduate courses in Europe: "It's the same as any international experience - you increase employment opportunities and can learn a new language."

Prof Marianna Fotaki, daughter of Greek exiles from the second world war, is researching humanitarian responses to refugees in Greece: "I want to understand, theorise and make an impact. I've been looking at how communities cope and what motivates people who have nothing to help others."

We also peer into the world of neuroimaging, limber up for some sport-related postgrad degrees, and tap into how startups and clean energy technologies are still putting down roots in the UK.

Sarah Jewell



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Course focus

What to do with a postgraduate degree in ...

Publishing

The internet may have turned traditional publishing on its head, but print is still very much alive. The University of Derby's MA in publishing covers digital skills, critical thinking, legal and business knowledge and "the ultimate transferable skill: high-level English", says programme leader Alistair Hodge. "We also run modules on entrepreneurship, leadership and management, so our graduates are not only prepared for their first career step, but progress quickly into senior positions."

"Books and magazines cover every subject imaginable, from academic journals to the latest Brian Cox astronomy title, so we have students

“ Graduates are prepared for their first career step, and to quickly progress into senior positions ”

from a similarly diverse range of interests. We have accountants as well as English literature students, creative writers and illustration students, all hoping to gain industry knowledge and the skills needed to equip them for a career in publishing."

The first master's cohort will graduate in November 2017: some are seeking roles in large corporate



publishers and some will join one of the many new niche book and magazine publishers. Others are likely to find roles as a librarian, or in bookselling, PR, communications or illustration and web design.

Enterprise

More people are starting their own business than ever before: 2015 saw 383,000 business births, up 32,000 on the previous year. Some enterprise master's focus on specific areas, such as the University of Cambridge's MPhil in bioscience enterprise. Others are aimed at students seeking a broad range of

80 The average number of new companies born every hour in the first half of 2016
Source: StartUp Britain

independence and an incredibly transferable set of skills that you will be able to use in any profession."

Marine renewable energy

The UK government is committed to a target of 15% of energy sourced from renewables by 2020. People with the necessary knowledge and skills to generate energy from the ocean - using everything from wave to offshore water power - are therefore going to find themselves in demand.

The Plymouth University runs the UK's first MSc in marine renewable energy. Graduates from the programme are currently working across the sector as project managers, technical consultants and sustainability analysts on a range of pioneering projects. Employers include the Royal Navy, Tidal Lagoon Swansea Bay and CleanEarth Energy.

Programme lead Dr Daniel Conley says: "The programme was created to expand on our reputation for high-

70k The number of new jobs that will be created in marine renewable energy over the next decade
Source: Renewable UK

quality research and teaching in marine science and coastal engineering. It's targeted at a broad range of individuals with backgrounds that range from environmental science, geography, oceanography and marine biology to all fields of engineering.

"The unifying aspect is that all of them have a common passion for being part of this young, but rapidly growing industry, the work of which is so important to the future health and security of our planet."



PAGE TURNING
A PROFIT



Waterstones reported pre-tax profits of £8.8m this year - its first year in the black since the financial crisis of 2008

Why study in ... Cardiff

For the nights out

Across town there's a host of independent bars within walking distance for a slightly more upmarket night out: 29 Park Place does a mean cocktail, while The Dead Canary's drinks menu includes weird and wonderful ingredients from absinthe to bee pollen. For a slightly crazier and cheaper night out, the students' union is always buzzing, or Retro's is a popular alternative, with karaoke and its 99p student bar. Try a pre-drinks burger at gourmet burger joint Got Beef, and enjoy a full Welsh breakfast at independent bistro The Pot the morning after.

... the accommodation

The majority of accommodation is within easy walking distance from the university and city centre. Cathays is where you'll find most students - it's a ghost town



during the holidays. Most of Cathays' accommodation is large, shared houses in terraces. A lot of international students tend to stay in the city centre, where there's a lot of private, purpose-built student halls. It's an affordable city with a surplus of good housing for students: you'll find good-quality housing five minutes from the students' union, where you'll pay £250-£300 a month per person.

... and the other stuff

There's a huge amount to do in Cardiff. The Motorpoint Arena hosts familiar names in comedy, sport and music, as does the Principality Stadium, where you'll find massive sporting events and music legends. Check out the Glee club for cutting-edge comedy, and Clwb Ifor Bach (Little Ivor's Club) for up-and-coming bands and DJ nights. The city has several theatres, with the Sherman Theatre regularly showcasing exciting new writing. If shopping's your bag, the city centre has every chain store imaginable, while the fabulous Victorian indoor Cardiff Market offers hundreds of stalls selling everything from clothes to curry.

News In brief

Cyber career breaks

The University of Liverpool is launching three new online IT master's programmes, all aiming to meet the demands placed on organisations by rapid changes in technology. The MSc in big data analytics, MSc in cybersecurity and MSc in information systems management will all offer working professionals the opportunity to develop sought-after

skills in these strategically significant IT specialisms to give their careers a boost.

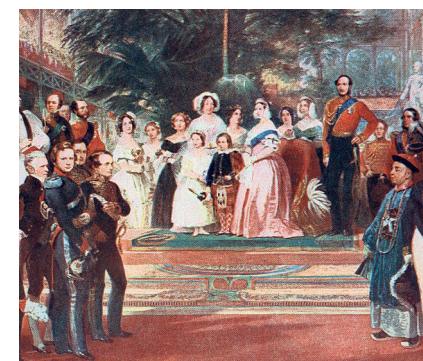
Pocket money and beyond

Financial education for school pupils has been a statutory subject on the national curriculum since 2014, but no specific teaching qualification in the subject has been available - until now. The London Institute of Banking & Finance has just launched the UK's first postgraduate certificate for teaching financial capability. It aims to help teachers provide effective financial education programmes at GCSE and A-level.

Talking it through

An MSc student who has stuttered since the age of six is using virtual reality technology to help rehabilitate people

with speech impediments. Gareth Walkom, 24, an MSc medical product design student at Nottingham Trent University, is developing software that will allow people to confront their fears and social anxieties in a virtual environment.



Become a leader and develop your design skills with help from Albert

It is hoped it will help people in anxious, real-life situations overcome their stammer. Walkom's design provides virtual reality exposure therapy, including advanced eye-tracking technology, within a VR headset.

Albert's legacy

Do you have a good degree in science or engineering and intend to complete a master's in industrial design? The Royal Commission for the Exhibition of 1851 - originally set up by Prince Albert - is offering nine studentships to engineering or science graduates who want to develop their industrial design skills and become leading designers in British industry. For more information and to apply online, visit www.royalcommission1851.org. Applications close on 27 April 2017.

Brexit

'It's not easy to quell students' fears'

Dominic Shellard



It's no secret that these are difficult times for British universities hoping to recruit postgraduate students from abroad.

Brexit, combined with immigration rules that appear hostile in other parts of the world, means that universities must pull out all the stops to continue to attract as many international postgraduates as before.

As soon as the result of last year's EU referendum was announced, we made it our mission at De Montfort University (DMU) to show Europe and the rest of the world that, far from erecting barriers to other nationalities, Leicester welcomes them with open arms.

It helps that Leicester is a multicultural city, where a majority of residents - not just students - would prefer that the UK remained in the EU. But that doesn't mean it's easy to quell fears among prospective students.

“We need greater clarity from Mrs May over tier-4 student visas”

Since the referendum, I have visited eight EU capitals where I flagged up not just the quality of postgraduate education in the UK, but responded to anxieties about racism and other types of hostility. In Poland, for example, I was asked by would-be students if they were likely to be attacked or have their property targeted. I stressed that incidents of hate crime are very isolated.

So far, there's no sign at DMU of a fall in the number of postgraduates from outside the UK; this year numbers actually increased by nearly 30%.

However, the UK government has only guaranteed EU students existing levels of loans and grants for 2017/18. After that, who knows?

At DMU we are reviewing our bursary and scholarship schemes for postgraduate students from 2018. If we can remove uncertainty surrounding not just funding, but

whether EU nationals can work here after completing a postgraduate programme, it would make recruitment significantly easier.

In India last year, along with six other UK vice-chancellors, I heard Theresa May fail to answer legitimate concerns about the availability of tier-4 student visas for those hoping to study in Britain. This is another area where universities can build stronger relationships with higher education institutions outside the UK, but we still need greater clarity from government.

DMU remains passionate about attracting people from all over the world. But we recognise that in today's global market there's no guarantee that postgraduates will automatically come through our doors.

Dominic Shellard, vice-chancellor, DMU, was talking to Neil Merrick

Brexit

A changed landscape

In the wake of Brexit, what does the future hold for studying abroad?
Neil Merrick reports

Many students see postgraduate courses as an opportunity to travel and spend time in another country. Last year, 37% of postgraduates studying at UK universities came from abroad. At the same time, hundreds of British people studied for postgraduate qualifications outside the UK. But with Brexit and the UK government clamping down on visas for students outside the EU, how much longer will this continue?

The message from UK universities to potential students from abroad is that it's business as usual. And Gareth Howells, head of MBAs at London Business School, says there is no sign of applications falling: "They are the Lehman generation. They are used to challenges in the global market," he says. "We want to go beyond the political



message and focus on nurturing talent. We want to Brexit-proof our students."

Of the 532,975 postgraduates studying at UK universities in 2015/16, 45,340 were from other EU countries (8.5%), while 154,390 were from countries outside the EU (29%).

The government has confirmed that EU students coming to the UK will be eligible for existing loans and other financial support for courses starting in 2017/18. The same applies to UK students going to other parts of the EU. But it is the years following Brexit that concern universities, coupled with the inclusion of international students in UK immigration targets.

Brexit-proof: it's now even more important that students familiarise themselves with European business practices
Getty

A report by the Higher Education Policy Institute (Hepi) forecasts that an increase in fees for EU students after 2020 - putting them in line with international students - may lead to a 57% drop in EU enrolments, including many postgraduates.

But Nick Hillman, director of Hepi, says there are positives too. The fall in the value of sterling means that UK courses are cheaper for students from abroad; the fact they are taught in English is also a major selling point. His advice to people thinking of postgraduate study in another country is go for it, regardless of Brexit.

Hillman accepts that the government could do more to help international recruitment, especially with visa rules. "Every time Amber Rudd [the home secretary] or Theresa May says anything negative it appears in the Indian newspapers," says Hillman.

British postgraduates can study abroad full-time or, for example, do a part-time dissertation to gain credits for a degree awarded in the UK. This can be done through programmes such as Erasmus+, funded through the EU.

David Hibler, senior adviser at the British Council, says the insights that student mobility offers is priceless: "Given the likely restraints on commerce and business that will arrive with Brexit, it's now vital that young people coming through the system are familiar with European mores and business practice."

Sjoukje van Oosterhout
"There is a European identity that makes it easier to adjust"

Sjoukje van Oosterhout is sick of hearing about Brexit. "My life is dominated by it. I hear the word even more than my own name," says the Dutch student, who is studying for an MSc in European politics at the London School of Economics (LSE).

By the time Oosterhout moved to London last October, the EU referendum was done and dusted and Brexit negotiations about to begin. But she was already familiar with the topic.

After completing her undergraduate degree in international relations in the Netherlands, she became a Dutch youth representative to the EU for two years, looking, among other things, at the effect of Brexit on her country's youth.

Determined to study as a postgraduate in a different country,



Sjoukje van Oosterhout: EU experience leads to opportunities

Oosterhout chose the LSE because of its reputation. "I preferred to stay in the EU because of the quality of its education and culture," she says. "There is a European identity that makes it easier to adjust within the EU."

Whether students from the rest of the EU continue to choose British universities will depend on the level of tuition fees as much as ease of travel, says Oosterhout, who paid £20,000 for her MSc course.

“My life is dominated by Brexit. I hear the word even more than my own name”

But she hopes UK universities retain strong links with those in the rest of Europe and recommends that British students consider postgraduate courses elsewhere in Europe.

"It's the same as any international experience," she says. "You increase your employment opportunities, and it can be extremely helpful to learn an additional language." **NM**



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Think it. Be it.

Help in a time of crisis

What are universities doing to mitigate the refugee situation, asks **Helena Pozniak**

When a group of students arrives in northern France to spend time with refugees, they are careful to listen and learn. “We don’t say we’re parachuting in to carry out fantastic social work and then just bugger off again,” says Prof Michael Lavalette, who’s overseen three of these trips, as part of Liverpool Hope University’s master’s in social work.

Students first took bedding, clothes, food and more to the Calais refugee camp in late 2015. They made two more trips after it was closed down to help in schools and centres there.

“We are seeing more students moving towards a specialism of working

with refugees and asylum seekers in particular,” says Lavalette.

Today, tens of millions of people are refugees. Some master’s degrees include modules on working with forced migrants, such as the MA in international social work and social development at the University of Bedfordshire. Here, students can volunteer with a local legal aid organisation that works to reunite refugee families. They also study issues around forced migration, and

“I want to better understand human rights”



Refugees in Calais, photographed by Liverpool Hope students

how refugees are covered in the media. “That’s what appealed to me,” says Sophie Pritchard, a student who works at Cafod, and has just been to her first lecture on the root causes of migration. “I want a better understanding of human rights and the legal framework around working with refugees.”

Students on London South Bank University’s master’s in refugee studies may already have worked in the field – either within government or NGOs – although some have no relevant background, says Gaim Kibreab, professor at the school of law and social science. Since the 2015 refugee crisis, demand for the course has increased, he says. Students take on work placements at charities, voluntary organisations and the UNHCR, both overseas and locally.

While the current refugee crisis has sharpened public focus, there is nothing new about people being forced from their homes – for political, environmental or economic reasons. Students on the University of Oxford’s master’s in refugee and forced migration studies examine the causes and consequences of this – as well as legal issues. “My time in Oxford was a door opener,” says Erik Abild, now director of partnerships and policy at the Norwegian Refugee Council.

JEMMA HERBERT

‘Well-meaning people are not enough’

Business ethics professor **Marianna Fotaki** explains the roles different organisations have to play in easing the refugee crises – and where universities fit in

What really concerns me is how best to support people who find themselves in a precarious position because their life circumstances have changed through no fault of their own. What many refugees need is the chance to move on,” says Marianna Fotaki, the daughter of Greek exiles from the second world war who grew up in Poland. Now professor of business ethics at Warwick Business School, and previously Manchester Business School, she volunteered as a doctor for refugees fleeing the Gulf war.

“We were asked to help people on the Turkish-Iraqi border – this was just after the war broke out in 1991. Kurdish people were fleeing, crossing the border from Iraq by foot. There were half a million people living in the mountains and we were there from the beginning. It was very cold, and vulnerable people – children and the elderly – were dying from exposure and a lack of hygiene.

“The experience taught me that it’s not enough to have well-meaning people providing emergency help for large numbers. Different organisations have different goals. When the US army arrived, they organised people, dug latrines and saved a lot of lives. This proved to me that you need logistics and support to bring about effective change.

“I became an organisational scholar – helping people is about getting the logistics right – and studied for a PhD in public health at the London School of Economics. When the Soviet bloc

collapsed, healthcare, transport, welfare – the whole infrastructure – changed too. I worked [for the EU] as a consultant in Russia, Georgia and Armenia, advising on policy around social issues and health.

“More recently, my son, who’s in his 20s, volunteered to help Syrian refugees on the Greek island of Lesbos. The situations he described were similar to those I’d experienced during the Gulf war. I’ve been carrying out my own research in Greece, where tens of thousands of refugees from Syria are still stranded. I want to understand, theorise and make an impact.

“I’ve been looking at how communities cope and what motivates people who have nothing to want to help others. It’s such a huge logistical challenge, but individual stories of human goodwill must not be lost in all this. I’ve come across some amazing initiatives of solidarity. There are potentially powerful policy implications in this.

“Many young refugees are victims of war: we can all help by pressing governments to accept unaccompanied minors. There are some initiatives from British universities to give young people from Syria scholarships – it’s a powerful policy. We can all do a lot by making these people feel welcome.

“Ethics, change management and organisational behaviour are fascinating topics. Yes, business students want a job, but they want to do something meaningful that touches people’s lives. We will pay a high price if we go back on our values as humans and as Europeans.”

Interview by Helena Pozniak



“We will pay a high price if we go back on our values as humans and Europeans”

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Notes to self

'You can see quite clearly how the brain reacts to different genres of music'

Megan Kelleher, 22, has a first degree in psychology from Liverpool Hope University. She signed up for its cognitive neuroscience MSc to pursue her interest in the connections between the mind and the brain.

In the final year of my undergraduate degree I had the chance to take an option in cognitive neuroscience, which I found fascinating. In my dissertation I used neuroimaging electroencephalography (EEG) methodology to explore people's emotional responses to familiar and unfamiliar kinds of music. You can see quite clearly how the brain reacts to different genres of music and which music people prefer.

I am finding the master's a challenge, but I'm learning a lot. We have learned about the structure and functions of the brain and about memory and brain damage. One of the most interesting topics we have done is neural plasticity, which is about how the brain develops over time - and changes when you are learning new things. Now we have begun to learn how to analyse EEG data, following up on the work I did in my undergraduate dissertation. I feel that once I have completed this MSc I will be able to call myself a scientist.

Science is now bridging the gap between psychology and biology, which were onceseen as separate domains. Having a master's in cognitive neuroscience and neuroimaging means employers know you are up to date and have conducted modern, advanced research. For my dissertation I hope to investigate evolutionary psychology, using EEG neuroimaging. After my master's, I am planning to continue in academia, either by taking a PhD or a doctorate in clinical psychology. **LH**



Megan Kelleher plans to continue in academia after her master's



Imaging on the mind

Cognitive neuroscience master's places emphasis on the latest scanning tools, says **Lucy Hodges**

How does the brain think? That is the question posed by a master's degree in cognitive neuroscience, which is being taken increasingly by students interested in the link between the brain and the mind.

And the proliferation of sophisticated machines, such as MRI scanners that can diagnose dementia, has created a need for trained people to analyse the information they provide.

Prof Tim Andrews, director of the MSc in cognitive neuroscience at the University of York, says: "The MSc is designed to show students how modern techniques in brain imaging can be used to ask questions about the way in which the brain and the mind work."

Students at York gain experience in functional magnetic resonance imaging, magnetoencephalography, electroencephalography (EEG), and transcranial magnetic stimulation. They also design experiments to learn from and explain the brain mechanisms that underpin learning and behaviour.

The course, which is also run at Manchester, Birmingham and Liverpool Hope universities, is aimed mainly at people interested in an academic career in cognitive neuroscience - in other words those who want to pursue a PhD and follow an academic path.

York has its own MRI scanner, offering first-hand experience
Suzy Harrison/University of York

"If you are interested in having a career in the field and asking questions about the brain, you need to understand how these tools that have been developed work and how to understand the data," says Andrews.

York has its own MRI scanner, which is housed in the York Neuroimaging Centre. The university is highly rated for neuroscience and has invested heavily in equipment, giving students first-hand experience of using brain-imaging techniques.

The University of Birmingham also gives students access to expensive kit and a research centre. According to Dr Pia Rotshtein - who developed the university's MSc in brain imaging and cognitive neuroscience - one of the course's biggest pluses is that students receive two research placements, where they are able to work with international researchers in the field.

The master's in cognitive neuroscience and neuroimaging at Liverpool Hope University is only in its second year, but has already doubled its student numbers from five to 10.

Students at Liverpool Hope are able to use the EEG lab, which is on campus, as well as other labs that are located locally. However, they have to go into the city to use the MRI scanners in the University of Liverpool's Magnetic Resonance and Image Analysis Research Centre.

“You need to understand how these tools work and how to understand the data”

MA research: it's a question of sport

Fancy studying sporting culture, with some expert help? Try one of the new MAs, writes **Lucy Hodges**

You can't fully understand sport without appreciating its history. That is the thinking behind an MA in sports history and culture at De Montfort University (DMU) in Leicester, which is offered by distance learning so that busy people can fit it around other commitments.

Taught by expert staff in the university's international centre for sports history and culture, the only centre of its kind in the world, the MA is aimed at people who want to grasp the origins of modern sport and understand why sport has become so culturally and globally important.

"The course was established because there was a gap in the market," says the centre's director Prof Martin Polley. "It recognises that sport has a history that is worth studying academically."

"We are about getting people to look at the context in which sport happens and how and why sport changes over time, as well as the economics, culture, political and social factors that affect sport," he says.

The course can be taken full- or part-time, over one or two years. It comprises four taught modules, plus a 15,000-word dissertation. In addition, students have the option to take extra modules in sports writing, football and rugby.

Students are given lectures within a virtual learning environment, which means they can view them at their leisure each week or month, or altogether in one go.

They have access to academics by phone, email or Skype, or they can visit the campus in person. Each year they are given three opportunities to attend seminars and conferences at DMU.

If you like the idea of taking an MA with research and not bothering with compulsory taught courses, you could sign up for a new MA that is being offered by the University of Buckingham out of its London base.

Now in its second year, the programme is being run by the former



Ed Smith - from batting to running Buckingham's MA
Getty

England cricketer and commentator Ed Smith, who is writing a history of sport in the 19th and 20th centuries for Penguin.

Students choose a topic to research, in consultation with Smith, on any aspect of the history of sport over the past two centuries. They then research and write a dissertation under his guidance.

Future prospects
'I would like to think I can use the master's when I quit the game'

Graham Kitchener, 27, who plays Premiership rugby for Leicester Tigers and made the England squad for the 2015 RBS Six Nations, has just graduated from a master's degree in sports history and culture at De Montfort University

I completed my first degree in sociology at the University of Birmingham in 2011 while playing for Leicester Tigers. After a couple of years I fancied getting back into education again and keeping my brain active, so I enrolled for this distance learning MA. I chose the course because DMU has a great reputation in the field and I liked the fact that it was online as that meant I could combine it with my rugby.



Online study enabled Graham Kitchener to continue playing rugby

“Eventually I hope to do something connected to my sport”

I took it over two years: the first year I covered the course modules in topics such as sport policy and politics and how to research the history of sport; in my second year I worked on my dissertation. The dissertation was on the effect that the professionalisation of the game has had on coaching in rugby union. The game was amateur until 1995, and was one of the last sports to turn professional.

For my 15,000-word dissertation I talked to a lot of people at Leicester Tigers and at my old club Worcester Warriors. I found out that over time the money that was made available to the game enabled them to employ specialist medical coaches as well as coaches for strength and conditioning guidance. The result is that rugby union is being played at a much higher level than before - and the players are now a lot bigger and fitter.

I would like to think that I can use the master's when I quit the game. I hope I have a few more years of playing rugby. But eventually I would hope to do something connected to my sport. Even if I don't, the MA is a good basis for employment in any field. **LH**

Science returns are sweet

A sports science MA can be good for your career and travel options, not to mention the health of the nation, writes **Alison Dickinson**

The wide-ranging world of sports postgrad degrees offers opportunities not just in the UK, but globally - and every one's a winner.

Richard Sackey-Addo, 23, from Croydon, landed his dream job working for the International Tennis Federation (ITF) in Valencia, Spain in September 2015 - two months before he graduated from his master's degree in sports performance at the University of Bedfordshire. He puts the appointment down to the networking opportunities offered to him during his studies.

"My lecturers were instrumental in accommodating us with valuable industry contacts, as many of us attained internships or work experience at various professional sports clubs and academies," he says. "I had to finish my dissertation for the first three or four weeks I was there though, which was an interesting experience!"

During his time working for the federation, he has created content on the ITF website, tenniscoach.com, planned and attended conferences around the world, and even worked with some of the top names in tennis, including Judy Murray and Rafael Nadal coach Francis Roig. "There are so many different aspects of the game that I've been involved with, so whether it's tennis development, developing participation, coach education or even high-performance coaching, there really is a lot open to me," he says.

"I've played tennis my whole life, so for me there's nothing greater than helping to grow a sport that I love, and

“There's nothing greater than helping to grow a sport that I love”

which has given me so much. I just want to keep giving back to the game for as long as possible in whatever capacity that is.”

Over at the University of Wolverhampton, Tom Nicholls, 25, from Dudley, was the first intern from England to travel to and work with a team from the Indian Super League as part of his master's degree in sports and exercise (MRes). He has recently returned from his three-month stint as performance analyst at the Delhi Dynamos Football Club, where he provided support to coaching staff in filming, coding and editing match and training footage and the collation of statistical data of the club's players and their opponents.

He says: "Working with two World Cup winners in Gianluca Zambrotta and Simone Barone, and the other experienced staff members, was an opportunity of a lifetime, and just spending time working closely and learning a great deal from them has made me a better person and analyst."

"It was also a great opportunity to travel to and explore most of the major cities in India. Learning about the differing cultures in each place was fascinating, while getting to visit the Taj Mahal in Agra was also something to cherish and tick off the bucket list."

Sports science research is not just about athletes. Closer to home, and away from the world of professional sport, two PhD students in the department of health sciences at Liverpool Hope University are currently investigating the impact of exercise and nutrition on age-related "sarcopenia" (loss of musculoskeletal mass) and functional performance in people between the ages of 60-90 - something that has implications for the population as a whole.

Kate Mooney, 29, who did her master's in exercise and nutrition science at the University of Chester, explains: "People are living longer than ever before; it's important for people to maintain their independence as they age, and prevention is key, as opposed to trying to reverse it."

Ben Kirk, 29, who did his master's in clinical exercise physiology at Northumbria University, added: "French cyclist Robert Marchand - at 105 - is a great example of how you can age independently and happily, and maintain function and overall health, and looking at the science behind that can benefit us all."

“The course recognises that sport has a history that is worth studying academically”

Clive Woodward and former governor of the Bank of England Lord King, who is on the board of directors at Aston Villa football club.

"What has been really interesting is the quality of the conversation at the evening events," says Smith. "I have learnt a huge amount from all the discussions. And I have loved working with the students on their dissertations."

On the course are 11 students, one of whom is an "associate", who is attending the seminars but not doing the dissertation.

The topics being researched by the 10 other students include how cricket was transformed from a disreputable sport associated with gambling in the early 18th century to a clean and virtuous game by 1850.



Richard Sackey-Addo uses a weighted wooden racket in a coaching presentation
Ray Giubilo ITF

Clean energy

Changing the elements

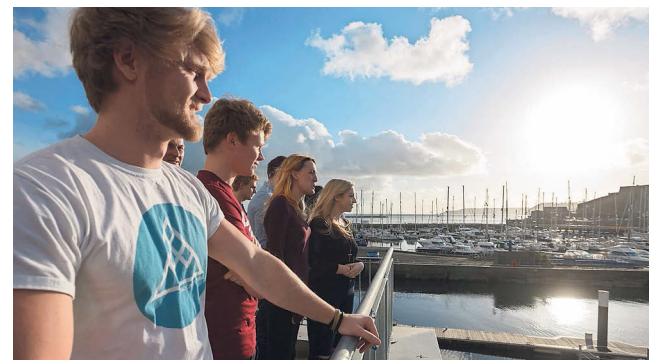
The renewable energy market is looking extremely buoyant. **Helena Pozniak** looks at the courses that can plug you in

It's an exciting time to be working in clean energy: tidal power is on the horizon and work to harness the power of waves continues apace. While the majority of jobs sit within wind and solar power, UK scientists are keen to establish the country as a world leader in energy storage and clean technologies. Renewable energy now meets a quarter of the UK's energy needs.

Jobs in renewable energy have grown almost three times faster than the national average employment growth, according to the Renewable Energy Association, with the highest growth in the onshore or offshore wind sector.

Nearly 30 UK universities offer postgraduate qualifications in clean energy, and the industry is desperate to plug an acute engineering skills gap.

British sea power: Plymouth students at the university's marine station
Lloyd Russell



One of the more specialised programmes on offer is Plymouth University's master's in marine renewable energy - a course that links up with Cornwall's £42m wave hub project - the world's largest wave energy test site. Postgraduates focus on emerging technologies and work with marine researchers.

If the proposed tidal lagoon power plant in Swansea Bay goes ahead - and proves to be a success - there could be a surge in demand for similar projects

around the UK. This would mean an increase in jobs for specialist engineers, project managers and developers.

Tidal energy is included in many generic courses, such as the University of Warwick's master's in sustainable energy technologies, which also looks at wind, solar, biomass and fuel cells. Kingston University London's renewable energy engineering master's has a business slant and includes modules in software modelling.

The University of Manchester's MSc in renewable energy and clean technology has the issue of carbon emissions at its core. The university has strong links with leading industry providers such as Shell, National Grid and EDF Energy.

Students on the master's in sustainable energy futures at Imperial College London are mostly drawn from the fields of engineering and physical sciences. The course has workshops on creative thinking and public speaking.

These courses can lead to doctoral research or employment in the energy sector, as well as with niche renewable companies; there are 6,500 companies in the field. David Hunt, managing partner at specialist recruiters Hyperion Executive, says energy storage is "one of the most exciting areas of growth".

Get smart and get involved

Nina Skorupska



We have extraordinary hubs of innovation on renewable energy and climate change in the UK, notably at the universities of Oxford and Cambridge, but also at Manchester, East Anglia, Exeter and Imperial College London.

Some of the smartest new science is connected with energy storage, and the UK is positioning itself at the forefront of this developing technology. It also wants to make itself a hub for smart technologies - not just smart meters, but also the internet of things and smart grids.

Clean energy provides a great business opportunity for the UK and is a key element of its bid to cut greenhouse gas emissions. It's one of the fastest-growing industries and there's much to do in upgrading energy infrastructure

“There should be more women engineers developing smart systems”

to meet demand. Innovation is occurring beyond the electricity sector as well, as new technologies are developed, tested and deployed to decarbonise heat and transport. Taking a postgraduate route shows your commitment to the renewable cause. And why not? It's such an exciting field.

Technologies in the sector are moving fast and a specialist year allows you to have a broader understanding of what's out there. But there's nothing wrong with learning on the job either. Any university programme worth its salt will give you experience of solving real-life issues and innovative practice.

Many businesses in the renewable sector are small, entrepreneurial and specialist. They don't have the capacity to run graduate training programmes in the same way as the big engineering firms such as Atkins. But they do want people with the right sets of skills who

know the market. It's important to have a grasp of finance, building and communicating a business case, and project management - and postgraduate courses can teach you these skills. When someone comes in with a master's or a doctorate, companies know they can fill specialist roles.

More women are working in renewables than any other energy sector: we make up 17%, compared with 8% in nuclear and 7% in oil and gas. But the numbers are still low, and although there are opportunities, women are more likely to be working as environmental consultants or auditors than in building and design.

There should be more women engineers developing smart systems that make better use of our energy.

Nina Skorupska is chief executive, Renewable Energy Association.

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Enterprise hubs



From little acorns ...

Postgraduate startups are becoming more widespread, thanks to university incubators, says **Helena Pozniak**

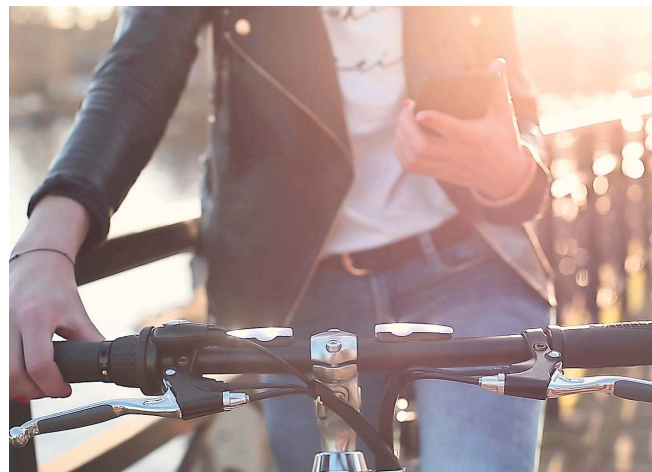
Bumping into a former Nasa engineer at a university networking event gave business postgraduate Matt Ritchie an entrepreneurial steer. He intended to return to accountancy after an MBA (master's in business administration) at Saïd Business School, University of Oxford. Then along came an engineer with a radical plan - to plant 1bn trees a year using only drones.

Dr Lauren Fletcher was looking for business students with the right background to help with his aim to combat heavy deforestation. "I was surrounded by people thinking of starting their own ventures, wrestling with ideas, and I wanted to get involved," says Ritchie. Within the university's enterprise hub, a team came together.

Ritchie graduated in 2014 and has worked with the award-winning new business BioCarbon Engineering ever since. For a year and a half he was based in the university's entrepreneurship centre. "These spaces do supercharge your ability to build a team and business," he says. "As a place to network they're really very important." In 2015 the team raised enough investment to push ahead with trials.

As a business, BioCarbon plans to seed up to 1bn trees a year without touching the ground. Drones scope

Above: BioCarbon plans to reseed Brazilian forests using drones
Below: the Wink handlebar grew from a university incubator



out the land and then fire out pre-germinated seed pods into the soil - it's a far cheaper, faster way of reaching remote terrain. After successful dummy runs in 2015, this year will see the first paid trial in Australia in April. Beyond this, the team hopes to target Brazil, Europe and North America.

When the team first floated the idea, it seemed "insane" to many, says Ritchie. "Drones are more commonplace now. We were fortunate to win a university award, which really helped." At times, Ritchie has felt it an uphill struggle: "But we worked hard to build our network and the whole infrastructure of the enterprise hub gave incredible support."

Although university isn't a prerequisite for entrepreneurs, it can offer a hefty leg up - Mark Zuckerberg famously founded Facebook while studying at Harvard. More and more universities around the country are

Startups The lowdown

- The numbers of new enterprises started by university graduates dipped slightly the year 2014/15, down from 4,581 the previous year to 4,160, although investment in these student startups has increased fourfold.
- Six months after completion, just under 5% of doctoral graduates and just under 8% of master's graduates were self-employed or freelance.
- 2016 was a bumper year for new businesses in the UK, according to figures from the government-backed StartUp Britain, which show that 80 companies were founded every hour.
- Nearly 80% of UK universities offer some sort of enterprise incubator programme either on or off campus. "But many university incubators only work with external companies, rather than being open to graduates," says Maximilian Yoshioka, lead researcher at the Centre for Entrepreneurs.

Sources: Hesa, Hecsu

“Entrepreneurship centres do supercharge your ability to build a team and business”

forming their own enterprise incubators - breeding grounds for fresh startups, complete with office space, mentors, funding advice and the chance to rub shoulders with students from different disciplines.

For a French-based team of entrepreneurs at Audencia Business School, Nantes, university support was pivotal in getting their company off the ground. Three postgraduates and fellow cyclists were worried about bike theft. As part of a joint project, they devised a handlebar with built-in lights and Bluetooth capability that can connect to a smartphone. Cyclists can be warned if their bike is moved while they're away, and track its whereabouts in real time. It can also set cyclists a chosen route and alert them to incoming calls.

Based in the university incubator, the team have raised €450,000 and plan to begin production in the summer - they've already had 900 reservations. "Audencia gave us the right tools to create the company," says co-founder Johnny Smith. "Our offices are free and we can stay for three years. Specialists here can help with legal advice, funding advice, media relations - they help us have visibility and credibility."

Help and guidance

How to deal with the university blues

Postgraduate study can be tough. But don't suffer in silence, help is at hand, says **Helena Pozniak**

What keeps postgraduates awake at night? Overwhelmingly it's worrying whether they'll ever find work, research by JobLab shows. Money angst is close behind, followed by stress over studies and social lives.

Diana, a postgraduate at Queen Mary University of London, admits she worried if she would ever land that ideal job: "I wasn't in a position where I'd meet potential employers and that stressed me out. I wish I'd got some work experience before starting so I could connect with professional networks and employers."

JobLab, which offers a platform to match students with prospective employers, interviewed nearly 160 postgraduates about their job-seeking experiences. Many felt under too much

pressure with academic work to shout for help, while others didn't even realise that their university could do anything. Postgraduate study is "more isolating, much lonelier", says one student, adding that although her tutor was supportive about her money worries, she never felt connected to the university.

And what do postgraduates wish they'd known before embarking upon their degree? "How much work there was," says one, echoing the thoughts of many. "Choose the subject very carefully," advises another and research the job market: "Don't just study anything to achieve a degree."

Some universities - business schools especially - hold weekend career workshops and networking training events to build confidence among postgraduate students, while some offer mentors who are former students themselves. University career centres strongly advise postgraduates to invest time in exploring their options; those who did say it helped enormously.

"You really, really need to engage with the subject," says Philippa Bunch, who's studying a master's in applied linguistics for language teaching at the University

“It's hugely beneficial to have others to chew over lectures with”

of Southampton. Attend everything on offer, read the right journals and focus early on, she says. Not only does it help with assignments, but "it also carves out a more definite career path as you will have more specialised knowledge".

Bunch was sceptical about joining an online study group: "But it's hugely beneficial to have others to chew over lectures with, decipher complex issues and compare thoughts on assignments. If I was younger and childless, we'd probably do this in the pub."

As an international student, Aafia Sarosh from Pakistan feels a long way from home. She works hard to mix intense periods of study - she's completing a master's in renewable energy at the University of Hull - with minor indulgence. "I reward myself by socialising, shopping or going to a movie," she says. "Keeping physically, emotionally and spiritually happy plays a vital role in maintaining motivation." Sarosh hangs out at a dedicated graduate school building, where she can study, eat and socialise: "I come here every day."

International postgraduates struggle with UK culture, orientation, even the food, says Dr Jimmy Huang, assistant dean for specialist master's at Warwick Business School, which tries to inform international students in advance about the UK's academic culture. "Postgraduate study is a big jump in workload," he says.

With a mix of social events and help to get their bearings, the university hopes to dispel homesickness and make connections. "It helps to know what you are getting into," says one student.

Just ask A postgraduate survival guide

- Join online study groups to share information on deadlines, admin, study notes and socials.
- Look for cross-discipline study seminars to get an insight into what further research involves.
- Throw yourself into your subject; reading around, understanding the field, even attending conferences. "As a postgrad, you're aiming to be part of the subject field rather than just describe it," says one master's student.
- Use university spaces, such as graduate centres, to study and socialise - many students say that they help create a sense of belonging.
- No question is too silly, says the University of Derby Online Learning (Udol). Postgraduate study requires independence and self-motivation, but tutors can talk you through existential angst.
- Money worries plague postgraduates. But while there aren't many large pots for hard-up students, finance offices occasionally disburse hardship grants.
- Talk to careers services to identify the sectors you want to target. Jump at the chance to attend any relevant careers and networking events. Don't leave thinking about a career until the course ends, is the advice of many postgraduates.
- Check your university email - you could be missing out on resources, events and deadlines says Udol. If your course is accredited by professional bodies, you may be able to join and use free resources.



MINE PARK/UNIVERSITY OF HULL

Aafia Sarosh: 'Keeping physically and spiritually happy is vital'

Degree apprenticeships

All systems go with level 7

As postgraduate degree apprenticeships gain in popularity, an option for leaders is next in the pipeline, writes **Lucy Jolin**

You could be forgiven for not having heard of postgraduate degree apprenticeships, also known as level 7 apprenticeships, which were launched in March 2015 with just 30 learners. But these master's-level programmes have big potential.

The Department for Education says it expects uptake to increase when the apprenticeship levy comes into force in May. And while only a few apprenticeships are available, such as in systems engineering or digital technology solutions, there are plenty more in the works, including teaching.

With level 7 apprenticeships, students will have an undergraduate degree or equivalent, and be expected to be working for their sponsor company.

Engineering is covered by master's apprenticeships



The level 7 systems engineering master's apprenticeship programme (Semap) was sponsored by the Defence Growth Partnership. Students work towards a diploma at master's level. Several major employers now have staff on the scheme, including QinetiQ and BAE Systems.

There are 18 Semap students at BAE - all of whom were employed there - but those numbers will grow, says Richard Taylor, who heads up BAE's early careers programme. "We knew we

had a skills shortage around systems engineering and needed to build on the competence of the people we had," he says. "It benefits the individual, the organisation and the sector."

The Chartered Management Institute (CMI) is part of a group, including employers Serco and Santander, that's developing a master's degree apprenticeship for leaders. Petra Wilton, director of strategy for CMI, says: "Too many organisations suffer from accidental managers: those who have been promoted into senior management roles on the basis of strong performance in other functions, as opposed to their leadership skills."

"This apprenticeship provides a route to support senior leadership development, which can have a powerful trickle-down effect throughout an organisation."

Prof Lynette Ryals, pro-vice-chancellor, education, at Cranfield University - which delivers the academic component of Semap - says interest in level 7 is increasing. "Once employees become aware that they can get a master's through this route," she says, "we will see a major shift in the way companies and employees think about management development."

CHRISTIAN TRAMPENAU

Semap progress
'After a year on the programme, I had the confidence to apply for a new role'

Rick McCann, 27 is a senior systems engineer on the Typhoon aircraft programme at BAE Systems

I left school at 16 and joined the BAE Systems advanced apprenticeship scheme. So, rather than following the traditional route through school and university, I've gone the apprenticeship route. Through that I've done an HND in aerospace engineering, and BAE sponsored me to do a degree in computer-aided engineering at the University of Central Lancashire.

My previous role was more about how we approached engineering in the business. This opened my eyes to systems engineering - a multidisciplinary approach that integrates everything from the initial

needs of the customer to the end product. Then I heard about the apprenticeships and became part of the first Semap cohort, which started in January 2016. After a year on the programme, I had the confidence to apply for a new role. I've just started as a systems engineer working on radar programmes.

I knew what an apprenticeship entailed: combining the academic and the vocational elements in a blended approach - something that I've found really beneficial. It's one thing getting the knowledge from university, but being able to apply it in work and gain

“There is always help around to keep me on track”



the skills and experience at the same time is really valuable.

You learn the theory of doing something at university, but the finer points in the real world are often subtly different. The programme seemed like a much more efficient way of progressing in my career.

The systems engineering master's apprenticeship programme (Semap) has brought the two sides of the experience together. On the academic course, there's a broad range of experience and backgrounds. That's really enhanced it, as you don't always get that level of experience in the room at university.

Doing any kind of education when you're working full-time always has its challenges, but that's what you take on. I don't think the apprenticeship has added any extra pressure.

Because it's set up as a formal apprenticeship, there's always help around to keep me on track. I have a mentor and there's support within the business. It's good to make sure that you're setting and meeting your targets. If I'd just gone and completed a master's on a standalone basis, I wouldn't necessarily have that level of support. It's going to be very beneficial to my career, and to the company. **LJ**

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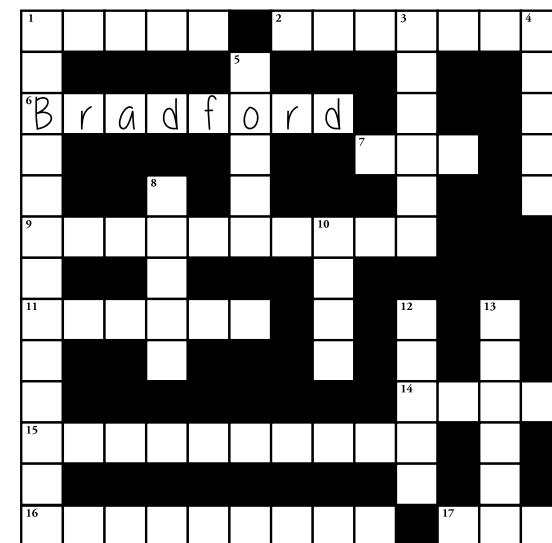
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- 16 Bradford's home and God's own county (9)
- 17 Master of Science (3)

Down

- 1 Defends computer systems and ensures online safety, Bradford is developing the next generation of digital warriors (5, 8)
- 3 Colloquial term for a person who is expert in or enthusiastic about technology (6)
- 4 Permitted by law (5)
- 5 German multinational engineering and electronics company, the world's largest supplier of automotive components;

- Company which benefited from Bradford's braking research (5)
- 8 Freedom from war; The University of Bradford is the world's largest university centre for the study of ____ and conflict (5)
- 10 Science, engineering, and technology research conducted on a microscopic scale (4)
- 12 Eco-friendly colour; Name of Bradford's on-campus accommodation, The ____ (5)
- 13 Royal prize bestowed on Bradford for Dementia Studies; ____ Anniversary Prize (6)