



NEWSLETTER | SPECIAL WELCOME EDITION

A MESSAGE FROM THE DEAN OF THE SCHOOL OF BUILT ENVIRONMENT, ENGINEERING AND COMPUTING

As we come to the beginning of the new academic year, we are looking forward to welcoming our new and returning students.

In making the decision to study at our school, you will be joining a community of committed and dedicated staff and students who are passionate about their subject areas and are committed to ensuring our students receive the best academic experience across all our courses. Although, it has been, and continues to be, a strange and challenging period for us all given the ongoing impacts of Covid-19, our staff have been working hard to prepare to welcome you into your first semester with us.

In anticipation of you joining us in September, I thought I should share with you some of the stories which demonstrate our commitment to being the foundations of your successful career with us.

On behalf of the whole School of Built Environment, Engineering and Computing community at Leeds Beckett, I am sending my best wishes and I am looking forward to meeting you physically or virtually next month.

Best wishes,

Professor Akintola Akintoye,
Dean of School



EXPERIENCES OF STUDYING FROM HOME – HEAR HOW ONE STUDENT HAS MANAGED THE TRANSITION TO ONLINE TEACHING

Hi, my name is James and I'm a first year Quantity Surveying student alongside playing for the Leeds Rhinos.

I've tried to keep my days structured throughout isolation, by getting up at the same time each day, exercising first thing, then getting showered and dressed. That way I'm ready to concentrate on uni work, with less things to distract me. I've been trying to stick to a Monday to Friday routine, giving myself a chance for a break on a weekend.

The fact that a number of our lectures are now done via weblink, some even with a choice of time slots, means that I can plan my day/workload accordingly. This method of learning is great, because not only does it ease the pressure of having to 'teach the subject to myself', it gives us the opportunity to ask questions 'in live time' to the tutor, but also benefit from the questions other students ask. Like many courses, a number of our end of year exams have been replaced with coursework. Tutors have been hosting special online webinars to help with the coursework, making sure we aren't falling behind. Tutors have even offered one to one sessions to help with any additional questions we have. We've even had a telephone call from our Course Director to check that we are doing ok – which was nice!

In a world where technology and social media can often get a bad reputation, I feel extremely grateful that we have the ability to continue to communicate with others around us and finish our studies. It proves social distancing doesn't have to be anti-social.

James Donaldson, BSc Quantity Surveying, Level 5 student



LEEDS, LEARNING AND THE STUDENT EXPERIENCE – BY SOPHIE, HUMAN GEOGRAPHY STUDENT



Hi, my name is Sophie. I'm a third-year student, studying Human Geography at the School of Built Environment, Engineering & Computing. Here are a few hints/tips for new students and talk about my first year experiences.

The first couple of months are going to be some of the most exciting times within your degree as you experience so many new things, I think one of the most exciting things you'll do is explore your new home. Leeds is a moderate size city which is perfect when you are first moving away because it's not too overwhelming which is really important in making you feel settled. Take advantage of the many shopping centres such as Trinity Leeds and the Victoria Quarter. University isn't just about studying, find a new hobby, through one of the many student societies/clubs. This is a great way to meet people with similar interests and make new friends outside of your flat or course!

Genuinely one of the best things about your first term at university is getting to know your course team and hand-on-heart the Human Geography and Planning department, made me feel like a part of the family from day one! The department is relatively small, so when Head of Subject David Haigh inevitably tells you that you're now part of a family, you best believe him...

Many of our degrees have field trips/site visits throughout the course, this is an incredible way to make strong bonds with your peers and lecturers, and let's be honest who doesn't love a fieldtrip abroad? Ask anyone on my course and they will say that the fieldtrips are the highlight of their time studying at our school. Finally, but most importantly you will create a home from home, and an extended family. In the first few months, you'll create memories that you will cherish, just enjoy it!

DR ROZ WYATT-MILLINGTON, SENIOR LECTURER IN ELECTRONICS, TALKS ABOUT HER CAREER IN ENGINEERING AND WHY SHE WANTS TO INSPIRE THE NEXT GENERATION OF FEMALE ENGINEERS



I am proud of being the first female engineer in my family although by no means the first engineer, my Dad and then 4 further generations back, so you could say it is in my psyche.

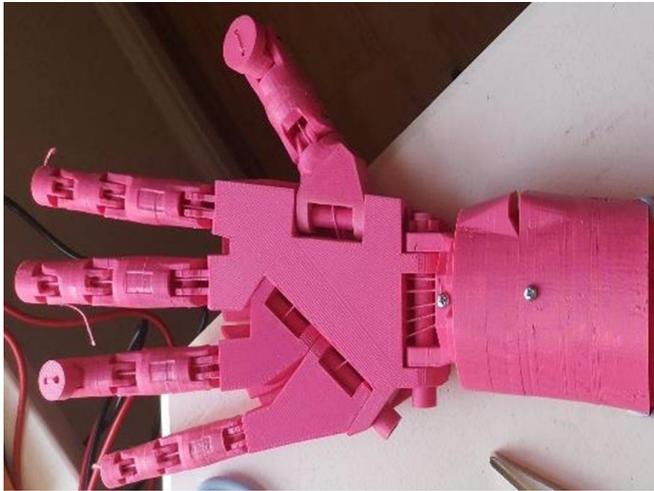
I was very lucky in being supported as a female at secondary school in studying science and maths. Indeed, my year 9 Physics teacher predicted a place at Girton College for me studying physics - he got the college wrong as I went to Queens' College, originally to study physics. However, I quickly realised my real passion was in the application of science for solving problems and, with the way the University of Cambridge works, I swapped to study electrical and information sciences (engineering) in my third year at university. Yes, I did have to be strong in some ways to cope in an almost all male atmosphere, but I had been brought up with the belief that females can do anything helped by my mother, a Maths & Computing teacher.

I love electronics and how you can make products that help us in our everyday living - without electronic & electrical engineers there would be no modern technology. We put the 'smart' into 'smart' as I say when talking about electronic engineers. I am as proud to be a chartered engineer as I am of my academic achievements. I strongly believe that more women should be studying STEM subjects, as an engineer I find myself using creativity all the time.

Engineering is about coming up with creative solutions to problems – whatever type of engineering you work in this is the fundamental thing we do. Together we can shape the world, as a mother more than ever this is what I want to do for my child.

ROBOT FINGERS POINT TO SUCCESS FOR LEEDS BECKETT ENGINEERING STUDENT

With the “rise of the robots” comes the need for talented and creative robotics engineers. Here at Leeds Beckett, we really nurture and develop these future roboticists. One such student who is, literally, in touch with our future robot friends, is George Brayshaw.



Working with Dr Mark Judge, George recently completed his final-year project, titled: Gesture controlled humanoid robotics using 3D-printed parts and inexpensive microcontroller systems. This project is the culmination of George’s three year course at Leeds Beckett. During that time, he completed several robot projects, including one that models the NASA MARS Exploration Rover.

His most recent humanoid robot project saw George combine artificial intelligence (AI) techniques, including machine learning (ML) methods, with electronics and additive manufacturing. By first capturing and measuring a human operator’s gestures, using myoelectric sensors on the skin, George developed a system to process these signals. Correctly identifying the gesture, the system then recreates the human movements remotely on a 3D-printed humanoid robot arm. This approach often features in advanced research projects.

Dr Judge noted: “From the early days of his first year, it was clear that George was a smart, engaged and energetic student. He always went above and beyond what was required for assignments, and he was always keen to keep going, developing better solutions in the robot labs - I’m very pleased that all of his hard work has paid off”.

Such was the success of his recent final-year robot project that George has now been invited to study for a PhD at the prestigious Bristol Robotics Lab. George will be continuing his research in Robotics and Autonomous Systems as part of the their fully-funded, four year FARSCOPE programme.

Commenting on his recent success, George said: “Doing engineering at Leeds Beckett has exceeded my expectations, providing me with both the skills and

confidence to achieve what I have achieved. The lab work allows us students to apply the theory we’ve learnt and also try different approaches to really discover how we work best. The lecturers are approachable and the project supervision shows they really care about their students’ success”.

George’s acceptance by such a prestigious robotics lab highlights the recognised high standard of the robotics and electronics courses at Leeds Beckett University, and continues a tradition of our graduates routinely going on to successful careers and further advanced study.

Robotics and Electronics Engineering continues to flourish at Leeds Beckett. Our research-led and problem-based learning approach combines theory with plenty of hands-on development work. During their course, our engineering students regularly gain well paid, year-long placements, often with companies such as Jaguar Land Rover and Farnell Electronics. This industrial experience, together with their academic and project work, gives our students a real advantage when they graduate.

SNAPSHOT: DARREN STAMP, FINAL YEAR COMPUTER SCIENCE STUDENT TALKS ABOUT HIS STUDIES

“What attracted me to my course was that naturally I am a problem solver. As I have grown up I have become involved in technology and as a result I am doing Computer Science because it is a field which is growing significantly and I want to be a part of that.

My course supports me with gaining hands on experience by doing practicals within my modules. For instance, when we have a programming module for instance we are not just learning how it works we are actually embedding what I have learnt into the system.”

View the full video at

<https://www.youtube.com/watch?v=DA21sLXk9Xs>



DR KAREN HORWOOD RECOGNISED BY THE ROYAL TOWN PLANNING INSTITUTE AS A 2020 WOMEN OF INFLUENCE

Dr Karen Horwood has been recognised by the Royal Town Planning Institute’s **The Planner**

publication as one of 2020s Women of Influence for her work on women and planning.

Karen convened the Women and Planning conference held at the Leeds Planning School in 2019, kindly sponsored by WYG. This conference sought to further develop the conversation about women and planning, bringing together academics and practitioners, and those in between, to discuss the histories of women and planning, issues facing gender diversity in planning today, and ambitions for the future. The conference was live tweeted at #WVaP2019. Karen's nominators for the award said of her work:

"Dr Horwood has been at the forefront of putting women in planning back on the agenda for planning in professional and academic contexts. In Summer 2019 she hosted a pivotal conference in Leeds 'Women and Planning' that brought different generations of professional and academic planners together for the first time. This event has been instrumental in producing a wave of conversations, collaborations and research, which is shifting the context for planning careers, practice and policy."
"At the conference, it was clear to see Karen is inspiration and huge support to her students - who came out in force to support her in delivering the event."

During the conference the Women and Planning Research Group (WVaPRG) was launched, which will continue this research conversation. Dr Karen Horwood is editing a special edition of Town Planning Review which will feature papers from the conference. Karen's own research focuses on the extent to which insights into women's needs in the built environment have impacted on the profession and its planning activity. She is also particularly interested in capturing the history of women and planning, the stories of its proponents and how perspectives across time and place can inform one another. Karen is working to further build this conversation.

The Leeds Planning School at Leeds Beckett University has invested in this research through awarding two Women and Planning research bursaries. The Women and Planning research bursaries are part of a package to celebrate the launch of the new professional doctorate programme in the School of the Built Environment, Engineering and Computing.



RESEARCH UPDATE

LEEDS BECKETT RESEARCH FINDS PUBLIC WOULD SUPPORT HYDROGEN ENERGY TO HEAT UK HOMES

Cleaner hydrogen energy systems to heat homes across the UK would be supported by the public according to new research by [but steps need to be taken to ensure customers aren't left behind in green energy discussions.](#)



The independent study was carried out as part of the **H2I** project, a UK gas industry programme focused on converting the existing gas grid to carry 100% hydrogen, in order to reduce carbon emissions from heating. Because it contains no carbon element, hydrogen produces just heat and water when burned, making it a credible technology for greening the gas grid, and supporting the UK's pledge to reach Net Zero emissions by 2050.

Led by the team at the university's Sustainability Institute, [School of the Built Environment, Engineering and Computing](#), the research involved surveying over 1,000 respondents and deliberative workshops held in three cities across the UK. These explored customer views on low carbon hydrogen, its use as a domestic fuel and potential role as a future energy source. Findings showed there is strong support for the clean gas to play a role in the country's future energy mix, with 20% of the public enthusiastic about a hydrogen gas network without needing further assurances.

Qualitative research from the workshops showed that customers were willing to accept a rise of up to 10% in their annual gas bill for the increase to support environmental benefits. Recent research published by Energy Networks Association found that if investment into zero carbon hydrogen infrastructure began today then bill payers would save £89bn by 2050.

However, customer acceptance was on the condition that a generous notice period would help customers to financially prepare for the cost of changing appliances, and clear direction on incentives supporting that transition would be provided. But the largest proportion of those surveyed – 68% - were indifferent

or undecided about low carbon energy technologies like hydrogen, and its potential to decarbonise the heat and transport the public rely on every day. The research indicates this is largely because customers don't know enough about hydrogen, are unconvinced that hydrogen is the right solution, or are simply not engaged with the topic. Given clear information on which to make an informed choice, this section of the public would support hydrogen's use in the gas network.

Dr Fiona Fylan, Reader in Sustainable Behaviour at Leeds Beckett University, who led the study said: "The research showed that people are being left behind in discussions about future energy, as many did not appreciate that the gas they use to cook and heat their homes produces carbon emissions.

"When they realised this, there was tremendous support for converting to hydrogen. There were few concerns about safety, as there is trust in the networks and safety bodies to ensure a hydrogen network would be tested as robustly as the gas network in use today. "Cost is a significant concern for people, although the concerns focus on the cost of new appliances rather than an increase on annual bills. People wanted a decision to be made as soon as possible and clear messages about what will happen and the environmental benefits that switching to hydrogen will bring."

Today, over 83% of UK homes are connected to the gas network, and heat from both domestic heating and industry represents around a third of annual UK carbon emissions. Repurposing the gas network to carry low and zero carbon gases helping to decarbonise heat, transport and industry lies at the heart of the [Gas Goes Green](#) programme. Bringing together engineering expertise from the UK's five gas distribution and transmission operators, Gas Goes Green is a blueprint to create the world's first zero carbon gas network in the least disruptive and most cost-effective way. The transition to a hydrogen network is one of the programme's six key workstreams, with projects like [H2I](#) helping to inform next steps enabling this to be done.

Led by [Northern Gas Networks](#), the gas distributor for the North, in collaboration with Cadent, SGN and Wales & West Utilities, H2I is delivering critical safety evidence to prove that a hydrogen gas network is as safe as the natural gas network heating UK homes today. H2I was granted £6.8 million of Ofgem NIC funding in 2019 for a second phase. Part of this will involve further social sciences research by Leeds Beckett University, to develop resources enabling customers to make informed choices on their future energy.

Mark Horsley, CEO of Northern Gas Networks, said: "Customers must be brought along on this journey. As the UK works towards a low carbon energy future, customer choice and control over their energy forms an essential part of the picture. The Leeds Beckett

University study is genuinely exciting work exploring a key part of the energy challenge which so far hasn't been fully understood, and it's clear there is still a lot of work to do. Hearing customer voices and understanding the areas where they require industry and government to deliver clear answers, is absolutely central to energy transition and will help to inform the next steps enabling a greener gas grid." The report can be downloaded [here](#)

MONICA (Management of Networked IoT Wearables) PROJECT COMES TO AN END



After 3 productive and rewarding years, the European Commission project; MONICA came to an end. The Horizon 2020 Project on wearable technologies for outdoor events has just passed the final review as the most successful Large-Scale Project (LSP) on Internet of Things (IoT)! All three reviewers and the PO congratulated the team for the tremendous good work, professional management and extremely useful results for open-air events in large cities!

MONICA stands for Management of Networked IoT Wearables – Very Large Scale Demonstration of Cultural Societal Applications. The project started in January 2017 with a budget of around €770,000 through HORIZON 2020 Framework Program for Research and Innovation (Grant Agreement No 732350). It provided a demonstration of how cities can use Internet of Things (IoT) technologies for smarter living. The demonstration involved six major cities in Europe from 2017 to 2020 involving more than 100,000 application users in total. The cities contributing were: Lyon (France), Hamburg (Germany), Bonn (Germany), Turin (Italy), Leeds (UK), and Copenhagen (Denmark).

The project focused on one of the key aspects of the European society: the cultural performances in open-air settings which create challenges in terms of crowd safety, security and noise pollution. To demonstrate how these challenges can be met through the use of technology, MONICA developed, deployed and demonstrate IoT ecosystems on security, acoustics and innovation, addressing real user needs. Within these systems, several applications were deployed, using IoT-enabled devices such as smart wristbands, video

cameras, smart glasses, loudspeakers and mobile phones.

One strand of applications focussed on **Crowd safety and security** addressing the challenge of managing public security and safety at open-air settings where large crowds gather. These include concerts, carnivals, sporting events and other city manifestations. The second strand focussed on **Solutions for sound monitoring and control** demonstrating a number of acoustics applications, controlling and reducing the emission of unwanted noise to the neighbouring communities while ensuring the concert goers had the best acoustic experience.

Working with 29 partners from nine European countries, the Leeds Beckett University team contribution includes transferring users' needs in terms of functionality, performance, scalability and interoperability into technical requirements for IoT applications. We were also involved in the development of the IoT algorithms responsible for the improvement of the safety and security of both events staff and visitors. Moreover, we were responsible for the project impact assessment, socio-economic relations and business models. We ensured the involvement of citizens and businesses as well as making sure that MONICA impact activities are well communicated.

The Leeds Beckett team is proud to have had the opportunity to work very closely with the partners at Headingley Emerald Stadium where MONICA technologies were used to enhance the visitors' experience through improved security and the management of crowds utilising IoT technologies such as smart glasses, CCTVs, and mobile apps. Thanks to Mark Arthur CEO of Yorkshire County Cricket, Gary Hetherington (Chairman of Leeds Rugby) and Rob Oates (Commercial Director) supported by Paul Rowbotham (YCCC Projects Officer and Operational support for MONICA project), Tim Leslie and Stephen Green (Mtech IT and technical provider for stadium and MONICA project), Nigel Chambers (Leeds Rugby Head of Finance and operational support for MONICA project), Jason Herridge (YCCC Finance Administrator and support for MONICA project), and Dr Helen Whitrod Brown (MONICA Project co-ordinator for YCCC and Leeds Rugby), it was possible to demonstrate technologies at live events. Special thanks to David Dowse; Ground Safety Officer G4S and operational support for MONICA project, Leeds West Yorkshire Fire and Rescue personnel and West Yorkshire police for agreeing to participate and contribute to the evaluation of the MONICA technologies.

The Leeds Beckett University team also had the pleasure of hosting and organising a smart cities show case event and a hackathon where we invited

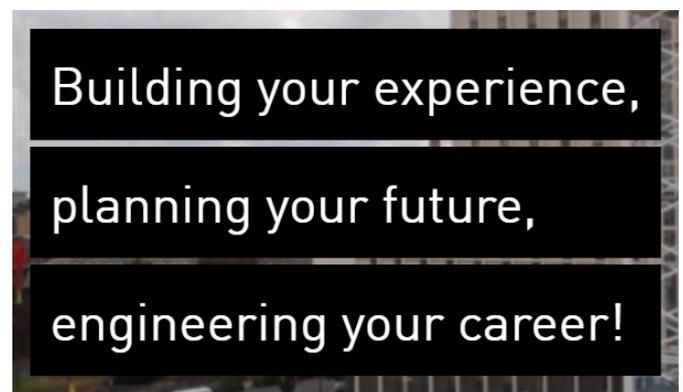
researchers, start-up, entrepreneurs to develop new innovative applications for a smarter sports experience. Through the project, Leeds Beckett produced seven publications, contributed to and participated in several dissemination events across Europe, and gained long term collaborators across Europe. The Leeds Beckett team is already preparing bids with these collaborators for the next project.

The MONICA team at Leeds Beckett wishes to acknowledge the support received from the Research team in particular Nicoletta Mirachi (pre-award), Lucy Scott and Louise Laybourne (post award team). Not forgetting IT services for supporting the special IT requirements and the hackathon. Special thanks to LBU academic members who worked on the MONICA project; Prof Dorothy Monekosso, Dr Rasha Ibrahim, Dr Shumei Zhang, Suzanne Morton, Holly Towndrow Dr Santiago Sanchez, Dr Muhammad Ali Nasir and Dr Hazem Heswani.



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