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Our five research themes

Protecting the security and freedom of citizens and of those most in need in society – whether they’re here in the UK or overseas – remains one of the foremost challenges we face. It’s a challenge Coventry University is tackling through research, which not only reaches deep into communities across continents, but also explores and combats threats posed by technologies that have become integral to our way of life.

Coventry University is renowned for delivering research that makes a significant contribution to tackling a number of global challenges.

Harnessing the latest science and technology to pioneer new and more intelligent ways of doing things is a cornerstone of university research. Coventry University, much like the city of Coventry itself, has a successful history of innovating solutions and techniques that add value to our economy – whether through knowledge transfer or commercialisation of a new idea – and we remain at the forefront of intelligent thinking with our cutting-edge research across a variety of fields.

A healthy and happy population is one which benefits from all facets of society – from early years education to social justice policy – being geared towards preserving and improving our physical and mental wellbeing. Ageing populations and rises in mental ill-health are just some of the significant challenges we face, but at Coventry University, we’re transforming the way we tackle these issues – among others – through research.

The creative industries are worth around £87bn to the UK economy, and higher education institutions play a central role in the sector’s success and future prosperity. At Coventry University, our roots can be traced back to a mid-19th century design school and, 175 years later, the creative spirit that drove that school’s successful foundation and collaboration with industry is as vibrant as ever, and evident in our teaching and research activities.

The environments we live in – and the infrastructures we build inside them – are constantly under threat, whether from climate change, economic instability or human conflict. These are challenges which researchers at Coventry University are meeting head on at a national and international level, helping communities and habitats to shore up and regenerate themselves by engaging with citizens, businesses and technology.
Welcome to the latest issue of Innovate magazine. In this edition, we are showcasing the impacts of Coventry University's research and enterprise activities on communities at a local, national and global level.

Here at Coventry University, we have been reflecting on some of our achievements over the last year as we continue to implement our ‘Excellence with Impact’ research strategy. As a university, we have moved from a four star to a five star institution in the QS Stars award system. Up from one star two years ago, we were delighted to achieve a rating of four stars for our research - a strong indicator of our growing research influence and impact.

In line with our strategy and to ensure we continue to deliver high quality outputs, we have made significant investment in our research portfolio and supporting infrastructure. We now have 14 research centres and institutes, including the recently established Centre for Arts, Memory and Communities and the Centre for Intelligent Healthcare. In early 2020 we opened the new Centre for Data Science. You can find out more about our new centres on page six.

Our research is focused on responding to societal challenges. As you read through the magazine, you will see some excellent examples of the impact we are having. This includes redefining the way the West Midlands integrates migrants into its communities (page 20), promoting sustainability in the floristry industry (page 26) and supporting students with disabilities in North Africa as they make the transition to university (page nine).

This is all the more relevant amidst the COVID-19 outbreak, with many in our research community quickly leaping into action to support the national effort to understand coronavirus and its wider impacts. Whether it is staff and PhD students volunteering to assist University Hospitals Coventry and Warwickshire (UHCW) with testing patients for COVID-19, or utilising the facilities across our campus to help manufacture vital protective equipment for NHS staff, I am extremely proud of our response during these trying events.

The pandemic has had a detrimental effect on the education sector as a whole, and we have all experienced significant disruption to our work. In spite of this, the Coventry University research community has adapted swiftly, embracing virtual conferencing to enable remote working where possible. A fantastic example of this is the Doctoral College’s effort to ensure that the Doctoral Capability and Development Conference (DCAD) was not postponed but moved swiftly to virtual format. The online conference was attended by 121 participants.

Besides providing an emergency response to the pandemic, we have also been considering how best to manage issues that are likely to arise as a result of COVID-19. Our Centre for Postdigital Cultures has worked on a number of initiatives aimed at ‘flattening the curve’ (in reference to the rate of infection) and ‘growing the care’ to examine how the healthcare system needs to manage issues raised by the pandemic, both now and moving forward (page 12).

Current events naturally mean that the submission deadline for REF 2021 has been postponed to an as yet unannounced date. While we await further clarity as to how this will be conducted, I am pleased to report that our preparations are in an advanced state and as such we are on track to meet the original timelines. This will not only ensure we are ready to meet any possible new REF deadlines, but also maximise any potential benefits some further preparation time could provide us.

Regardless, the safety of our staff and students remains our first and foremost priority. While, as an institution, we have embraced remote working, experimental research and fieldwork has inevitably been disrupted. There are so many incredible initiatives taking place across the university’s research centres and institutes, and we will continue to review the situation and explore options to safely re-start activities when it is appropriate to do so.

Please take care amidst these unusual times, and I hope you enjoy the latest issue of Innovate.

Richard Dashwood
Deputy Vice-Chancellor for Research

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Will the Tokyo 2020 Paralympic Games have a wider impact on the city’s culture and society’s views of people with disabilities?

CyberOwl: protecting against cyber attacks
Coventry University’s cyber security spin-out is working to secure our national infrastructure

Transforming mental health in the workplace
Improving mental health and productivity in the Midlands

Molly Browne PhD student
How the university’s research environment is helping Molly improve outcomes for people living with dementia

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Over the last 12 months, Coventry University has opened three new research centres which focus on real world issues, including healthcare, economic growth and divided communities.

We live in societies that are increasingly fragmented and disconnected in life and opportunity. To help combat this, the Centre for Arts, Memory and Communities is exploring how we might create better futures for individuals and communities.

The team are forging partnerships with world-leading new arts and creative organisations, which will help local and global societies thrive.

In August 2019, the Centre for Intelligent Healthcare was created to research potential solutions to the challenges faced by the NHS, care systems and providers. Advances in healthcare mean that people are living longer, increasing pressures such as managing costs and maintaining the ongoing wellbeing of the general population.

The centre, via collaboration with local industry partners and healthcare providers, is providing evidence to show how advances in technology and process can help maintain an individual’s health in the community. Monitoring the health of individuals with chronic diseases and conditions outside of hospital should lead to better outcomes and a reduction in NHS costs.

The Centre for Data Science is the newest addition to the university’s research portfolio, having opened in January 2020.

Its core focus is the effective management and use of large amounts of data (big data). This is a key driver of scientific research and economic growth in diverse areas such as computer science, artificial intelligence, statistics and mathematical modelling.

The centre comprises of three groups: Machine Learning for Big Data, Wireless Sensors, and Computational and Statistical Modelling. The knowledge developed by these groups supports a wide range of application areas, such as medical, engineering, finance and society.

Discover more online:
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Heritage grains giving us thought for food

Reconnecting what we eat with the way it’s grown

A hands-on community campaign that combines cultural tradition with heritage grains is underway to reconnect the food people eat with the way it’s grown.

Heritage grains are the seeds of traditional cereal crops that were grown before the development of modern plant breeding in the early 1900s. Unlike recent varieties of grains that are genetically uniform and grow best in industrial farming systems, heritage grains retain much of their genetic diversity and can be developed in most climates and conditions without chemicals or fertiliser. They are intuitive and adaptive to the local environment, forming their own distinctive character and flavour.

‘Heritage grains can be an alternative to the current unsustainable food system,’ explains Dr Marina Chang, from the Centre for Agroecology, Water and Resilience. ‘When we talk about urban agriculture, people usually think about fruits and vegetables, but we believe community bakeries are important to the engagement with the wider population.’

A London based project is challenging local bakers to use heritage grains to create a ‘King’s Cross Bun’ that reflects their own baking methodology, personal experience and cultural background.

‘The bread bun is an everyday food that is eaten by many different cultural groups. The King’s Cross Bun project uses it as a vehicle to promote the future of food and sustainable grain production across different communities.

Key to the project are a series of engagement events, which, so far, have included get-togethers, bakers’ meetings and a visit to John Letts’ heritage grain farm. John Letts has supplied all of the heritage flour used by King’s Cross Bun baking partners.

‘Heritage grains are a trendy thing now, but John has been a pioneer in the field for the last 20 years,’ explained Dr Chang.

The project team are engaging with community organisations, agricultural alliances and policy makers to raise awareness of the importance of sustainable food systems. The university’s London campus has also hosted a series of talks and seminars.

The King’s Cross Bun project is allowing people to experiment and share their creativity while raising awareness of biodiversity and its importance to our sustainable future.

Very few people can relate to the long process from seed to table

More information
Centre for Agroecology, Water and Resilience
Project contact: Dr Marina Chang,
Coventry University
Project partners include: SunFlour Bakery,
Calthorpe Community Garden and Café,
Thenga Café and The Latin Programme
www.kingscrossbun.co.uk
Reigniting tourism in post-conflict areas

Can Northern Ireland prove to be an inspiration to the State of Jammu and Kashmir?

With snow-capped Himalayan mountain peaks, lush green alpine forests, and a beautiful bowl of lakes and orchards, the Kashmir Valley in South Asia has been a leading tourist destination for generations. Unfortunately, the conditions for tourism and associated businesses in the region have been made exceptionally difficult by the legacy of more than 30 years of violence, political instability and military tensions between the nuclear neighbours, India and Pakistan.

Coventry University’s Dr Maharaj Vijay Reddy, from the Centre for Financial and Corporate Integrity, is leading new research into the ‘power of tourism’. By analysing the aftermath of past conflicts in Northern Ireland, the project will seek to explore if and how tourism can play a positive role to support reconciliation in post-conflicted areas halfway across the world in the state of Jammu and Kashmir.

Field research will be undertaken in Northern Ireland to gather the views of different stakeholders and discover the actions which facilitated the development of tourism after the Good Friday Agreement. The learnings and emerging strategies will be applied to the field research undertaken in Jammu and Kashmir as part of the next phase of the project.

In-depth interviews with the Jammu and Kashmir state government departments, the Government of India’s Ministry of Tourism and businesses that support tourism will take place. Analysis of local, national and international tourists’ perceptions will also be collated to determine if tourism has the potential to play a positive role in peace building.

Tourism can play a positive role in peace-building by strengthening socio-economic foundations and supporting reconciliation.

This challenging, high impact research, delivered by leading international experts in tourism and disaster management, is the first of its kind.

The outcomes of the research will be presented at an international conference to be held in India with partners, such as the Indian Institute of Tourism and Travel Management. The event will disseminate the findings through the production of a ‘tourism revival manual’ delivering strategies and frameworks to support any future crises.

More information
Centre for Financial and Corporate Integrity
Project lead: Dr Maharaj Vijay Reddy, Coventry University
Email: vijay.reddy@coventry.ac.uk
Project partners include: Professor Stephen Boyd, Ulster University; Professor Parikshat Manhas, University of Jammu; Professor Sandeep Kulshreshtha, Indian Institute of Tourism and Travel Management
Funded by: British Council and University Grants Commission of India, under the umbrella of the UK-India Education and Research Initiative (UKIERI)
www.coventry.ac.uk/cfci
The Centre for Postdigital Cultures (CPC) is leading an initiative to improve the lives of students with disabilities in North Africa. Many Higher Education Institutions (HEI) across the UK and Europe have teams of dedicated professionals to ensure that individuals with disabilities receive appropriate support throughout their time at university. Analysis indicates that the situation in North African HEI is somewhat different; it seems that people with disabilities are sometimes marginalised and disadvantaged.

Researchers from Coventry University are leading a collection of projects to help inform HEI colleagues how to make their students’ transition to university easier. The Progression of Accessibility Centres in Higher Education (PACES) project for North African students with disabilities has 12 partners from Egypt, Morocco and the EU. HEI representatives visited each other in their home countries to learn and experience their institutions’ respective accessibility processes and culture.

The five key elements of the project are:
- The transfer of good practice in equality and diversity across the EU and North Africa.
- Expanding already-established accessibility centres and building new centres in a further five universities, while also launching virtual and pop-up centres.
- Improving the process of setting up accessibility centres, using lessons learned from a previous project and gathering knowledge from new partners.
- Establishing an action network for employers and HEIs in Egypt and Morocco.
- Developing student schemes to encourage peer-to-peer support for students with disabilities.

Accessibility centres enable students with disabilities to use assistive technologies and support services such as counselling and peer support. Through these centres, students will also learn transitional skills, preparing them for the next stage in their professional career.

Dr Jacqueline Cawston, Coordinator of the PACES project, said: ‘Visiting Cairo for a project meeting in early 2019 was a great experience and it was heart-warming to see the new accessibility centre established at the Ain Shams University. We are looking forward to seeing more of the centres established for students in Egypt and Morocco.

‘The next big challenge for the project is to create an employers’ network to enhance understanding of the capabilities of people with disabilities, and the value of making a company or organisation accessible to all.’

More information
Centre for Postdigital Cultures
Project contact: Dr Jacqueline Cawston, Coventry University
Email: j.cawston@coventry.ac.uk
Co-funded by: Erasmus+ Programme of the European Union
www.pacesproject.eu
A collaborative research network is investigating whether techniques used in dance could benefit people living with persistent pain.

People with chronic pain can often feel isolated, as it limits their ability to take part in work and social activities.

Dr Emma Meehan, from the Centre for Dance Research, is working with the Somatic Practice and Chronic Pain Network. They are looking to develop dance methods to help people manage their symptoms, increase their quality of life and enable them to better communicate their experiences with colleagues and family members. The network forms part of the wider research context within C-DaRE, which specialises in inclusive and interdisciplinary approaches to research in dance; Dr Meehan has research interests in movement and wellbeing.

Information from dance artists, healthcare professionals, technology developers and people living with persistent pain will be brought together to create dance for pain management programmes.

More information

Centre for Dance Research
Project contacts: Dr Emma Meehan, Coventry University (dance); Professor Bernie Carter, Edge Hill University (health)
Funded by: Arts and Humanities Research Council (AHRC)
www.somaticandpain.coventry.domains
Reclaiming Romani culture

A digital archive for Romani arts and cultures

The RomArchive is an internationally accessible digital archive which educates audiences on how the Roma community chooses to self-represent in areas including theatre and drama, dance and civil rights.

Research Fellow, Rosamaria Cisneros, is part of the dance team for the project. As a member of the Roma community herself, Rosamaria said: ‘Dance is very much a part of how the Roma celebrate and engage. RomArchive is important because it shows we are here. We are creating work – whether it’s artistic or academic - we can write our own history, and this archive is a positive offering to counter some of the negativity that exists.

‘The team hopes that the project will help to educate people about Romani culture by offering a reliable source of knowledge, shifting some of the misconceptions and stereotypes which are often found in the media.’

More information
Centre for Dance Research
Project contact: Rosamaria Cisneros, Coventry University
Awards: European Heritage and Grand Prix Europa Nostra Awards
www.romarchive.eu

Maths Meets Myths

How different are our social networks from those in The Lord of the Rings?

Ancient narratives and myths have been a topic for academic debate for many years – but largely in the fields of humanities and literature.

The Maths Meets Myths research project uses statistical physics to study relationships between characters in epic texts and sagas such as The Lord of the Rings.

Just as the popular ‘six degrees of separation’ concept centres on the idea that most people are six or fewer social connections away from each other, the Maths Meets Myths researchers connect characters in myths and legends, and examine the structural configurations to see how similar or dissimilar the societies are from real-life social structures and patterns of relationships.

This data is used to trace commonalities and differences between characters across cultures, empowering people to see which characters or relationships can have the greatest effect on others.

A series of public workshops were run in Coventry and Warwickshire to bring the research alive for local people. Participants heard a simple storytelling of Beowulf and were asked to take on a character, before using hula hoops and ribbon to make a human relationship network visualisation.

The public engagement work was designed to help people think about maths in a new way, particularly with the aim of inspiring girls to study science, technology, engineering and mathematics at A level and beyond.

More information
Centre for Fluid and Complex Systems
Project contact: Professor Ralph Kenna, Coventry University
www.coventry.ac.uk/cfcs

Combining books and movement to accelerate development

An innovative approach improves outcomes for pre-school children

A six-week intervention found that asking children to practice fundamental movement skills based on the characters in a storybook improved long term memory and physical ability in children aged three to four years.

Researchers found that combining movement and storytelling offers synergistic benefits in relation to physical and communication progress to a greater extent than a movement only or storytelling only intervention, which are critical for good development in the early years.

Professor Michael Duncan, an expert in sport and exercise, said: ‘We have addressed the three pillars of the early years’ foundation stage for pre-school education, placing physical development alongside communication and language, and personal, social and emotional development.’

The team are now putting these findings to use as they develop and deliver training to local primary school teachers.

More information
Centre for Sport, Exercise and Life Science
Project contact: Professor Michael Duncan, Coventry University
www.coventry.ac.uk/csels
Researchers from Coventry University’s Centre for Postdigital Cultures (CPC) have worked with a number of collective care, mutual aid and solidarity initiatives to support communities across the globe during, and beyond, the COVID-19 pandemic. 

The initiative, entitled Flatten the Curve, Grow the Care, documents grass-roots efforts and offers practical guidance and inspiration for care collectives, combating major issues posed by the pandemic. 

‘Flattening the Curve’ refers to the slowing down of the spread of the virus through social distancing, ensuring that hospital capacity is kept manageable. 

The ‘Grow the Care’ response has been formulated to recognise ongoing capacities of care that look beyond the current pandemic. As well as considering healthcare capacity in the present, the initiative draws attention to the ‘social crisis’ that may emerge in the future. 

The documents collated for the initiative focus on mutual aid efforts including (but not limited to):

- How to assist people in home isolation
- Disability and chronic illness in the pandemic
- Reproductive rights, violence and care work
- Kids in quarantine
- Those who can’t go home: prisoners, refugees and homeless
- Mutual aid for those who have lost work
- Mutual benefit model for restaurants and communities
- Technology and science in the time of COVID-19

The resources have been shared in the contexts of mutual-aid collectives, including the Coventry COVID-19 Mutual Aid Group, Birmingham Community Solidarity and the Zagreb Mutual Aid Group.

As well as supporting local community responses, the documents have been developed to support worldwide initiatives, working in collaboration with academic institutions in Italy, Croatia, Austria, Spain and the US. All resources have been translated into German, Italian, Spanish and Croatian.

Flatten the Curve, Grow the Care forms part of the Pirate Care project, which was initiated by CPC researchers Valeria Graziano, Marcell Mars and Tomislav Medak, and launched with the 2019 CPC annual conference with the same name. It maps collective practices that respond to crises of care, and activates collective learning processes from these practices.

The COVID-19 initiative has been incorporated into an ongoing syllabus, focusing on practices that foreground care, labour, and technology. The notes relating to the documents were collectively written and translated by a transnational network of Pirate Care practitioners as well as CPC researchers Valeria Graziano, Maddalena Fragnito, Tomislav Medak, Marcell Mars, Rebekka Kiesewetter, Tobias Steiner and Janneke Adema.

They have also been aided by members of the Community-led Open Publication Infrastructures for Monographs (COPIM) network, coordinated by CPC.

The effort has also found resonance in scholarly and public media, with interviews and references featured in Artforum, Kunsthalle Wien, Disruptive Networks Lab, Rijeka Capital of Culture, MoneyLab #8, The Global Staff Room, Venice Climate Camp, Institute of Networks Cultures and Amateur Cities.

More information
Centre for Postdigital Cultures
Project contacts: Dr Valeria Graziano, Maddalena Fragnito, Tomislav Medak, Marcell Mars, Rebekka Kiesewetter, Tobias Steiner and Dr Janneke Adema
More about Pirate Care: syllabus.pirate.care/topic/coronanotes/
About the COPIM network: www.coventry.ac.uk/copim www.coventry.ac.uk/cpc
Research shows that there is still a huge taboo when it comes to talking about money. This can include concerns about the cost of good financial advice and being judged. A potential consequence is fewer people seeking financial support, as they are often unaware of the free services available to them.

To tackle this, researchers from Coventry University have created a new mobile application designed to help people better manage and balance their finances.

The MoneySkills app incorporates key learnings from a research project called ‘Managing My Money’, people in low to moderate income households were targeted with a behaviour change intervention to help them manage their money more effectively. It was found that simple budgeting and savings tools helped participants become more resilient to unexpected bills or changes in their personal circumstances, by building a modest ‘emergency’ fund and improving their day-to-day money management skills.

Following the ‘Managing My Money’ study, the app was found to be a natural progression for users, as many participants kept informal budgets and notes on their phones. Similarly, users were accessing the original 30-page booklet in printed format or PDF on their mobiles.

In order to make the content more digestible and accessible, researchers reconstructed the booklet down into a series of short and concise electronic books that can be read on the app. These e-zines deliver key money management information - such as budgeting, small changes and saving - through accessible and easy-to-use content.

Another innovative feature of the app is a series of short, animated explainer videos. The two-minute videos offer tips on how to make small changes every day to develop a simple budget, set goals, prioritise spending, and save for a rainy day.

Dr Hussan Aslam ran a soft launch of the app during Coventry University’s Freshers Week. Around 500 new students downloaded and accessed the web app and gave positive feedback on the content. The interactive budget planner was particularly well received. For many students, this will be the first time they are responsible for managing their own money.

As Professor Sally Dibb explained: ‘Although there are other apps out there, they are not educational in the way MoneySkills is. What makes this app distinctive is that it combines the tools with information on how to budget, save and set priorities, and the need to save for a rainy day.’

The full launch included an event for community groups in Milton Keynes and one for credit unions hosted at Coventry University’s Simulation Centre. However the researchers aren’t finished there. As Dr Lindsey Appleyard told us: ‘The MoneySkills app is just one part of a range of initiatives that we are undertaking.’

The research team hope to secure funding for a further project that focuses on how to best support conversations around money within different communities, reassuring and normalising concerns so people don’t feel alone when it comes to their money.

The team have also prepared a white paper for the Centre for Credit Finance Europe and will run an event that specifically targets policy makers and practitioners to explore barriers to financial stability, including some of the emotional and practical factors that people face on a day to day basis trying to get by.

More information

Centre for Business in Society
Project contacts: Professor Sally Dibb, Dr Hussan Aslam and Dr Lindsey Appleyard, Coventry University
Project partners include: Open University and the Money Advice Service
Download MoneySkills from the App Store, Google Play or access the web-based version at https://moneyskillsapp.com/home
View white paper at: www.coventry.ac.uk/cfce-white-paper
www.coventry.ac.uk/cbis
New realities for history and culture

In a world where the development of exciting interactive technologies continues to grow, museums and archives are starting to move away from traditional engagement styles. Researchers from Coventry University are supporting this exciting transition by collaborating on a three-year project called Virtual Reality Archive Learning (ViRAL). Using Virtual Reality (VR) and Augmented Reality (AR), they are using museums and archives across the world to teach skills to local community groups.

Dr Jacqueline Cawston commented that ‘the technology to produce augmented and virtual reality for museums and archives has become more accessible and affordable. Key to this project is community learning, using digital and traditional methods to enhance storytelling skills and increase engagement with cultural heritage.’ The research team understand the challenge of producing low cost digital resources and, in response, have launched a website which includes downloadable tools and training curriculums for museums.

They have produced an interactive e-book which contains best practice case studies from each of project ViRAL’s partners. It will help people gain a greater understanding of the different projects currently using AR in a historical setting, and aims to guide adult educators in how to use AR and VR in their work. The e-book will also offer suggestions on how to encourage young adults to get involved in cultural heritage industries.

At the end of the project there will be a tailored 3D VR production about Dornbirn, a cultural heritage site in Austria. The production will be based on a historical canal journey using interactive software and hardware to generate the realistic images, sounds, and other sensations that simulate a user’s physical presence in this environment.

It is predicted that the use of AR and VR to re-enact historical events will continue to grow, making future visits to the museum a more interactive and immersive experience.

More information
Centre for Postdigital Cultures
Project contact: Dr Jacqueline Cawston, Coventry University
Project partners include: Stadtarchiv Dornbirn, eLearning Studios, Elderberry AB, Stadt Wuppertal, Muzej Slavonije, ADPT
Funded by: Erasmus+ Programme of the European Union
www.viraltraining.net

Using virtual and augmented reality to transform museums and archives
The future of teaching and learning in the Middle East

Offering innovative education opportunities to university students and marginalised groups in Jordan

Although computer-based teaching practices have been present for decades, major digital transformation towards a fully immersive online learning experience for students still remains unexploited for many Higher Education Institutions (HEIs).

Researchers from Coventry University are partnering with three other European institutions and five Jordanian universities on a three-year project to improve teaching quality in Jordanian HEIs.

JOVITAL (Jordan Opportunity for Virtual Innovative Teaching and Learning) will offer learning opportunities to university students and open up higher education to marginalised groups (including women, those who live in rural areas and refugees) by using inclusive virtual classroom settings.

Professor Katherine Wimpenny explained:

‘At this stage of the project, academic staff are engaging in discussions and training to develop pedagogies and practices which are relevant for virtual collaborative learning within their education context. In addition, students from the five Jordanian universities are being trained as e-tutors to support and facilitate collaborative online student peer-to-peer learning, and from Coventry University’s Centre for Global Learning: Education and Attainment, we will continue to capture staff and student experiences as the project progresses.’

Work is being undertaken to form virtual learning centres including the Virtual Innovative Teaching and Learning Hub, Virtual Innovative Learning Labs and Mobile Virtual Innovative Learning Labs.

These centres will provide students and teaching staff with access to virtual learning activities, training and consultation, and will include awareness events and workshops. The resources will also be used as a platform to instigate cooperation between local universities, Non-Govermental Organisations, Civil Society Organisations, public authorities and businesses in the private sector.

Collaborators on the project have successfully hosted a number of workshops, conferences and teacher training sessions across Europe and the Middle East. The sessions included a launch event in Dresden, Germany, a presentation at the 2018 EDEN Conference, and a needs analysis visit to Za’atari Refugee Camp in Jordan to design feasible solutions.

Professor Wimpenny said: ‘Meeting with partners is always so informative, especially for providing a platform to talk openly about our respective education contexts and the diversity of our practices and learning environments. These opportunities enable us to critically assess learning contexts, and extend our own knowledge about global learning.’

More recently, Coventry University hosted an observation visit. 31 staff from the five Jordanian universities came to see how Collaborative Online International Learning (COIL) projects are created and delivered. Four examples of COIL projects were presented, ranging from robots to simulated hospital patients, and included other innovative COIL experiences delivered as part of projects with partner universities from across the globe.

More information

Centre for Global Learning: Education and Attainment

Project contact: Professor Katherine Wimpenny, Coventry University

Co-funded by: Erasmus+ Programme of the European Union

www.jovital.eu
Dull classroom-based learning could soon be a thing of the past thanks to the Beaconing pilot project. A team of researchers have developed a user-friendly gaming platform, making it easier for teachers to integrate digital games into lessons and homework. Games created on the platform can increase the enjoyment of studying and offer students the opportunity to apply their learning in imagined or realistic scenarios, helping them to develop knowledge and skills in an interactive way.

The gaming platform can be used during class time or set as homework. A dashboard allows teachers to assign their students specific tasks, such as designing a game and reviewing analytics. When the students access their dashboard, they can see the tasks that have been assigned to them. A tool called Accessabar has been integrated into the platform, making the dashboards digitally accessible for all.

The initiative resulted in participating schools creating a number of gamified learning experiences and tasks. One school created a story about an evil tycoon who had hidden a stash of toxic toys – students raced to collect clues and apply their science knowledge in digital games and real-life experiments.

The Beaconing gaming platform is the result of a pilot involving 15 partners, some 5,476 students and 776 teachers from 10 countries. Professor Sylvester Arnab, Beaconing Project Coordinator said: ‘It was really important that teachers were at the centre of our research. We were able to combine their subject experience and expertise with our knowledge of gamified learning, to develop a gaming platform that works in practice, helping them embed playfulness and gamefulness into their teaching.’

The project team have also found opportunities for the gaming platform to be used outside of the educational sector. A Coventry culture and art trail will soon be released in conjunction with the Tokyo 2020 Olympics, while in Barcelona a spin-off of the platform, PlayVisit, is being used as part of a retail campaign.

The next stages of the project will see the gaming platform being rolled out to more schools and organisations who could benefit from gamified applications. The project will continue its mission to break educational boundaries with gamified learning that is fun, inclusive and grounded in reality.

More information
Centre for Postdigital Cultures
Project contact: Professor Sylvester Arnab, Coventry University
Funded by: European Union’s Horizon 2020 Research and Innovation Programme under grant agreement no. 687676
www.beaconing.eu
Researchers from Coventry University have recently completed a multimedia project to document the legacy of dance in Coventry. Dancing Bodies in Coventry is a City of Culture 2021 project which shines a light on the diverse dance community in the city. It celebrates Coventry’s rich dance culture by bringing together a range of artists, festival organisers, dance schools and local groups, allowing them to share their dance stories across the city with the wider community.

The project has produced a number of films to explore and highlight different aspects of the legacy of dance. Some of these focus on the dance cultures of Coventry’s diverse range of migrant communities; for example, looking at the history of the Irish dance community through an interview with Declan McHale from the McHale Academy of Irish Dance.

The videos aim to unlock hidden gems within Coventry by discussing the artists’ relationships with the city itself. This is achieved by featuring films from the likes of Imagineer Productions, who produce large scale participatory events and building takeovers. Similarly, another video features Dr Natalie Garrett-Brown, a performer and dance researcher, who explained how she uses dance to welcome and introduce people to the city by making use of outdoor locations - such as the ring road underpass - as the setting for her performances.

Although the project originally only intended to create three films about the past, present and future of dance in Coventry, the scope of it was increased to 15 films in order to do the artists’ dance stories justice.

The hope is that the project is the beginning of a lasting archive that will continue to showcase the diversity of Coventry’s dance culture, well beyond the City of Culture celebrations in 2021.

More information

Centre for Dance Research

Project contacts: Dr Rosamaria Cisneros (Research Fellow), Dr Emma Meehan (Research Fellow), Maria Polodeanu (videographer), Antony Weir (photographer), David Sherriff (sound designer) and Dr Marie-Louise Crawley (Research Assistant), Coventry University

Funded by: City of Culture 2021

www.dancingbodiesincoventry.com
Transforming hospital care in the NHS

Using open source software to improve health outcomes

It is estimated that seven per cent of in-hospital deaths that occur in the NHS are preventable, with additional patients experiencing unnecessary deterioration. There are a number of causes and considerations that can be attributed to preventable deaths; one reason could be ineffective paper or digital systems for observing and managing patients. Existing systems are expensive for the NHS and often do not integrate well with other clinical systems.

Coventry University researchers are looking to transform the NHS’s observation and monitoring capabilities using new technology and the principles of open source. The collaborative ‘Develop in the Open’ (DITO) project aims to create a blueprint for clinician-led open software in the form of an app, suitable for the NHS and other public sector bodies.

Making the software open source will mean that the design, documentation and all associated components can be available to the community to be studied, re-used and further improved.

Developers will be supported by professional service providers and plans will be in place to ensure the governance, security and quality of the applications. It is hoped that open source will provide more functionality and the flexibility to adapt to the changing needs of patients and clinicians, while reducing the NHS’s annual software licence renewal bill.

An application that assesses the National Early Warning Score (NEWS2) will be created and tested in order to examine the potential benefits of creating software using the principles of open source. The project team have chosen to focus on the NEWS2 score because it is a key predictor of sepsis in hospital patients. Sepsis claims the lives of an estimated 52,000 people a year in the UK, and earlier identification of sepsis leads to better patient outcomes and reduced mortality.

A practical study is taking place with doctors and nurses to help inform the development of the app. This includes a literature review to evaluate current NHS working practices and collate feedback on digital systems. Information from the practical study will be used to implement a best practice approach in the app, which will be tested in Coventry University’s cutting-edge patient simulator facilities. The final stage of the project will be field trials at hospitals in two NHS trusts, before the final report is delivered.

The DITO project has been awarded £790,000 by Innovate UK, the largest sum ever given to an open source project.

Centre for Intelligent Healthcare
Project contact: Nikki Holliday
Email: nikki.holliday@coventry.ac.uk
Project partners include: OpusVL, South London and Maudsley NHS Foundation Trust, Cheshire and Wirral Partnership NHS Foundation Trust, The Apperta Foundation CIC Trust and OpenUK
Funded by: InnovateUK
www.coventry.ac.uk/cih
Supporting small organisations with cyber security

Identifying and reducing the risk of a cyber attack

Around half of small organisations suffer a form of cyber-breach in any one year. The consequences of an attack can be severe and can even lead to bankruptcy. Despite a number of government campaigns designed to inform and educate organisations about cyber threats, many organisations fail to take preventive action.

Researchers at Coventry University are testing an intervention designed to increase the number of organisations implementing tools to prevent cyber attacks. These tools can include the use of two-factor authentication and raising staff awareness of mandate or invoice fraud.

Small businesses and organisations are encouraged to complete a short online survey and take part in a free cyber security health check. The generated feedback provides researchers with the information they need to put the appropriate safety measures in place, safeguarding the business or organisation.

The multi-disciplinary research team have received positive feedback from those who have already taken part, and learnt valuable information about small organisations and their attitudes to cyber security. Early findings indicate that some organisations think they are not reliant on digital technology, despite having email, using an online bank account or reporting tax online. Others believe that they are cyber-safe, particularly those that outsource cyber security but significantly underestimate the sophistication of social engineering used by criminals, or think that they are too small to be attacked, despite the evidence that small organisations routinely fall victim.

Improving cyber security in small organisations will mean that we are all safer from the increasing threat of cyber attacks. The team intends to revisit the organisations three months after their health check to see what progress has been made. The aim is to use these findings to inform current policy.

More information

Centre for Financial and Corporate Integrity
Project contact: Anna Cartwright, Coventry University
Email: cyber@kitc-solutions.co.uk
Project partners include: De Montfort University, KITC Solution (an IT spinout company from the University of Kent), Kent Police and the National Cyber Security Centre
Funded by: Home Office
www.cyberprotect.our.dmu.ac.uk
Employment is a vital part of any person’s autonomy and sense of belonging.
Redefining integration in our cities

Coventry is part of a unique project that is changing people’s perceptions of refugees and migration.

For migrants coming to the UK, integrating with local communities, finding a job and learning the language can add more pressure to an already challenging life experience.

Integration is often perceived to be one-sided, with newcomers expected to adapt to fit into a pre-determined way of life. It can fail to take into account the needs and wants of the individual, and what they can contribute to their city.

MiFriendly Cities is a unique programme trialling innovative and sustainable approaches to refugee and migrant integration, to develop a successful blueprint for other cities to adopt. ‘Refugees and migrants are often seen through a deficit model,’ said Sinead O’Callon, a researcher from Coventry University. ‘We’re seeking to redefine the way cities support the integration of newcomers by finding ways for the whole city to play a part in the process of providing migrants with the skills, knowledge and opportunities they need to build connections and contribute to the economy and social wellbeing of their immediate communities.’

Developed in consultation with migrants, the programme benefits wider communities in Coventry, Birmingham and Wolverhampton. It will collect feedback from participants, residents and employers over the next three years. The feedback will support the creation of a collective vision for what constitutes a welcoming or ‘migration friendly’ city.

Employment is a key element of the project. Despite many refugees and migrants being skilled and educated, it can take up to seven years for them to find employment in the UK. Often, this is a result of qualifications from other parts of the world not being recognised, but it can also be due to hesitations or misunderstanding on the side of the employers.

‘Employment is a vital part of any person’s autonomy and sense of belonging. But for migrants it also helps to improve language skills, increase cultural awareness and build local and social networks,’ said Dr Catherine Harris, Coventry University’s lead researcher for MiFriendly Cities.

The first major survey conducted for the project sought to look deeper at issues related to employment and support the development of a city-specific programme to benefit both unemployed migrants and employers.

In the survey, 64 per cent of employers said they were not sure of the law on employing migrants, and that this acted as a deterrent to hiring them. More than half of businesses also said that they were unable to fill roles because they could not find candidates with the right skills and experience.
Dr Harris said: “The results of the survey have so far enabled us to create materials and establish a network for employers to consult and create links with each other and with migrant groups, as well as shaping a more holistic approach and developing accessible employment support channels for migrants.”

There is an opportunity to address issues raised in the survey by encouraging employers to utilise the untapped resource of skilled migrants across the pilot cities. A significant, region-wide gap was identified in the digital sector. To address this gap, the programme has been offering accredited digital fabrication courses – for residents of any background – at the university’s community training facility, FabLab Coventry.

The courses provide trade-specific language learning, a recognised UK qualification and a gateway into the industry. There has also been an investment in mobile equipment to enable the university to deliver courses in other community spaces.

Another course being offered is Citizen Social Science. Dr Harris explained: “The course takes place over eight weeks and participants are able to put their training to use by helping evaluate the MiFriendly Cities project. It’s fantastic to see the students’ confidence build within a university environment.”

So far, five migrants have been trained through the course and they will attend a formal graduation ceremony. Dr Harris hopes the experience will support them on a path to further education and employment routes they may not have thought possible.

Other migrants participating in MiFriendly Cities are also gaining qualifications in carpentry, painting and decorating, and public health. They are then being supported in applying their new skills by getting involved in the community, volunteering on home makeovers for those in need, conducting community research or sharing important messages as qualified community health champions.

Sinead said: “Our 45 health champions are already providing a vital community service, building capacity within the West Midlands’ hardest to reach communities by empowering residents to look after their own health through signposting to local health services and providers. This includes registering with a local GP practice, accessing services available in pharmacies and community centres or finding the nearest NHS walk-in centre. By building awareness of the services available within these communities, we can support people to avoid an emergency by seeking care early.

The project has also resulted in the launch of a new facility, the FabLab Eco Furniture Factory. This facility aims at continuing the work of the MiFriendly cities project after 2021 by supporting people to gain skills and inspiration from giving old materials a second, third or fourth life by transforming them into new products.

These efforts have been recognised by the UK government. Hannah Gregory, government Deputy Director for Integration and Vulnerability Resettlement, commented: ‘I was really struck by the innovation of MiFriendly Cities’ approach – and the mutually beneficial connection between the research and the project.’

The partnership running MiFriendly Cities aims to reach 2,000 employers, 2,000 residents, conduct 100 home makeovers and provide legal advice on a range of issues to participants across the life of the project.

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Case study: Luc Kone’s social enterprise success

On completing CUSE’s mentoring programme, Luc pitched his business idea to an expert panel, who awarded him £5,000 to get his idea off the ground. He said: ‘Pitching my idea was a nerve-racking experience, but after the brilliant training offered by CUSE, here I am, making a new path in my life as a social entrepreneur.’

As with any social enterprise, the profits will be re-invested into the business. Luc is working closely with MiFriendly Cities to promote his curriculum to newly arrived parents in primary schools and to inspire other budding entrepreneurs. He explained: ‘We are aware that our service is also vital for asylum seekers receiving government support and destitute asylum applicants, so we wanted to make those same tools free for them to use.’

Luc hopes to inspire other migrants to consider setting up a social enterprise as a way of getting more involved in their community and to promote the creation of a network of small, socially aware businesses. His advice for other migrant entrepreneurs is that anything is possible with the right support.

Future plans for Britology include the launch of a web platform.

A total of 42 people have taken part in CUSE’s training programme, with 16 being awarded funding to get started. All enterprises launched through the project will receive ongoing mentorship through CUSE, as well as access to the university’s Intellectual Property Rights team and the Social Enterprise UK network.

Since 2018, MiFriendly Cities has partnered with CU Social Enterprise (CUSE), who aim to further the social value of the university in the local community through entrepreneurship and innovation. They have been delivering four-week mentoring programmes, tailored to help migrants with entrepreneurial aspirations to understand how businesses can have a positive economic and social impact.

One participant in the programme was Luc Kone, a maths teacher from the Ivory Coast who resettled in the UK in 2012. Inspired by his own experiences as a refugee, he wanted to create a service for people moving to the UK to help them settle and integrate. From an initial idea, he developed a business plan and gained an understanding of the UK market and the skills needed to run a viable enterprise.

‘It was when I was undertaking my teaching diploma that I came up with Britology, a curriculum to ease the integration of skilled immigrants in the UK,’ said Luc. ‘I developed the idea into an education and recruitment agency specialising in providing individuals and families settling in the UK with the right education, information and mentoring.’

Anything is possible with the right support
Joining The Conversation

From periods to graffiti, sport to adoption, Coventry University academics have written about a variety of eye-catching and topical issues for the influential website The Conversation. The site publishes articles by researchers which are fine-tuned by media outlets around the world and even translated into other languages for The Conversation’s sister sites across the globe.

Here we share one of the articles published by Coventry University academics this year. Hazel Barrett (Coventry University) teamed up with Dani Barrington (Leeds University) and Emily Wilson (Sheffield University) to discuss the stigma attached to periods worldwide, illuminating us on the particular challenges young girls face.

Hazel Barrett’s main areas of research are the socio-economic aspects of development, in particular gender, health and rural development in sub-Saharan Africa.

As an internationally recognised expert, her research has more recently focussed on the traditional harmful practice of female genital mutilation (FGM) in Africa and amongst the African diaspora in the EU. Hazel is a specialist on participatory action methods and community-based participatory research, and has published a number of refereed papers on this methodology.

More information
Centre for Trust, Peace and Social Relations
Project contact: Professor Hazel Barrett
Project partners include: Dr Dani Barrington (University of Leeds) and Dr Emily Wilson (Sheffield University)
Funded by: Iriise International
www.coventry.ac.uk/ctpsr
It will take a lot more than free menstrual pads to end period poverty

Reframing our focus: reducing stigma through education

All of those who menstruate, wherever they live, experience challenges when managing their period. These might include a lack of products, toilets or disposal facilities, enduring pain, being bullied or being restricted from activities and locations. In high income countries, these challenges are often referred to as ‘period poverty’ and in low-middle income countries as ‘poor menstrual hygiene management’. But the result is the same: a large proportion of the global population are disadvantaged by having a period.

The solution that is normally advocated is for menstrual products to be made affordable, for example by removing the ‘tampon tax’ or providing these free in schools and through food banks. Most programmes that distribute free menstrual products in high-income countries provide disposable pads or tampons, while in low-middle-income countries disposable or reusable pads are preferred over tampons. Free and cheaper products are clearly necessary in some situations, and can manage short-term issues, but they will not solve what is a complex socio-economic issue.

Most period poverty headlines focus on girls not attending school because they can’t afford menstrual products. However, there is little evidence that pads alone will keep girls in school. The following are stories that we heard from Ugandan girls who received reusable pads, which show that providing products alone is not necessarily enough to improve school attendance.

**Having pads but missing school**

Jane*, for example, was given reusable pads but chose not to use them. She didn’t attend school as a result. Jane didn’t have the information she needed to make an informed decision to use the pads. She had heard rumours that washable, reusable pads may increase risk of infection or even cancer. Her mother uses traditional cloths so wasn’t able to advise her. Furthermore, when Jane got the pads out of the box, it wasn’t clear to her how they should be used. She was too embarrassed to ask at school so she put them back in the box under the bed and continued to skip class when she had her period.

Susan*, on the other hand, decided to use the reusable pads, but it was difficult for her to use them in a school environment while following the instructions she’d been given. So she still ended up skipping class. She had been told that the reusable pads she received needed to be washed with soap and dried in the sun. But the bathrooms at school didn’t have water or working locks. She tried putting the used pad in her bag to take home to wash but she was scared that one of the other pupils would see it in her bag.

So, she decided to only change her pads at home, but they started to get uncomfortable and itchy during class and she was so worried that they would leak that she couldn’t concentrate on what the teacher was saying. In the end, she felt it was easier to stay at home. Even there, it was embarrassing to be seen carrying extra water to wash the pads, so she dried them under her bed where her dad and brothers couldn’t see them.

Meanwhile, her friend Esther* was having similar challenges with her new disposable pads. There was nowhere to dispose of them at school and she had heard rumours that menstrual blood can be used in witchcraft. She was also forced to wear them for long periods of time, terrified of leaks. She decided it was easier just to stay at home.

Mariam*, more positively, managed to use her pads comfortably and safely but still didn’t make it to class. She had figured out a way to use her pads at school, but some of her male friends realised that she had her period and teased her mercilessly. They refused to sit next to her because of fears that they would be contaminated by her. The teachers ignored what was happening. They were really embarrassed by the whole situation and didn’t know how to respond. Mariam’s mother was not sympathetic as she had always told her to stay away from men and boys during her period. Unfortunately for Mariam, having a period was incompatible with realising her full potential. She skipped class every month and her grades suffered.

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**Menstrual stigma everywhere**

Although these stories come from Ugandan girls, other work has shown stark similarities to the UK. For example, in interviews with girls from both locations, recent University of Leeds graduate Lizzie Goolden was told by one UK girl, ‘My sister gets very anxious whenever on her period because she is worried about leaking and what people will think. This makes her not want to leave the house’. No doubt the memory or reality of such fears will ring true with anyone who has ever menstruated, and is echoed in a Plan International UK report.

What all this shows is that there’s a myriad of reasons why someone may not attend school, despite having access to menstrual products.

Building on Coventry University’s community work aiming to end female genital mutilation in Europe, we have been partnering with communities to identify why it is that menstruators are unable to manage their periods hygienically and with dignity. A pilot of this method in Uganda was reacted to positively by the community. Local champions worked together with researchers and practitioners to dismantle menstrual taboos in the wider community and create sustainable solutions. This was achieved by educating men, women, boys and girls about menstruation and setting up access to a range of locally made and affordable menstrual products.

In the coming years, we plan to expand the work to evaluate the effectiveness of this approach in other parts of East Africa, Melanesia, remote Australian communities and the UK. Donors across the globe are increasingly distributing funds to end period poverty, which is fantastic news. The UK government recently announced its campaign to end ‘period poverty’ globally by 2030, but it is key that these programmes are directed towards evidence-based solutions – which are likely to involve more than supplying girls with pads.

Understanding and addressing the root causes of period poverty is the only thing that will allow us to move towards a period positive environment for everyone who menstruates.

*Names in this article have been changed to protect participants’ anonymity.*

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Feature
Did you know that almost 90 per cent of flowers sold in the UK have been imported, some from thousands of miles away?

Dr David Bek and Dr Jill Timms have been investigating sustainability practices in agriculture supply chains, with particular reference to fruit, cut-flowers and wine.

Their work has revealed that florists and consumers have low levels of awareness in regards to the positive and negative impacts they are having on the natural environment. Simply making the origin of a product obvious is no longer enough when promoting sustainability. Dr Bek said: ‘Consumers have very little information about the ethics and carbon footprint of flowers compared to other produce. If we are to take a sustainability angle we have to ask “is the carbon footprint actually lower?” If certain flowers have been grown in a heated greenhouse in the UK in February, it actually has a greater carbon footprint than the flowers being produced without a greenhouse in Kenya and then flown over.

‘The opportunities for engagement have spiralled for us at the moment, as “sustainability” is on the lips of so many companies and community groups.’

The team are liaising with a UK-based organisation of small-scale growers to develop an accreditation process that demonstrates the environmental benefits of selling flowers that are local and seasonal. This will mean retailers can trust that producers are doing the right things in terms of sustainability.

In addition, the sector is under pressure to reduce the production and use of peat, which includes the release of greenhouse gases such as carbon dioxide and methane. To combat this, the Horticultural Trades Association (HTA) is working with Coventry University, to develop a sustainability road map for stakeholders working within the horticultural sector.

The project will help people make a more conscious choice, regardless of whether they are choosing flowers at the florist, supermarket, filling station or online.

"Consumers have very little information about the ethics or carbon footprint of flowers"
Dr David Bek is a Reader in Sustainable Economies at Coventry University. He started his work in agriculture and horticulture in South Africa over 10 years ago. Over the last 18 months, he has been involved in developing an online learning platform, Sustainable Practices make Sustainable Businesses, which aims to teach people about the importance of being sustainable when producing their fruit or vegetables. Backed by major retailers Tesco and Woolworths (South Africa), the platform is predominantly aimed at producers and people working in horticulture. It is relevant to anyone with an interest in learning more about what sustainability means in practice, and could be used in a variety of undergraduate and postgraduate courses. Video case studies are drawn from the flower, wine, and fruit and vegetable sectors, and illustrate the challenges of managing water, soil and agro-chemicals in sustainable ways.

Dr Jill Timms is an Assistant Professor in Strategy and Leadership at Coventry University. Her research interests include ethical trade, sustainable supply chains and campaigns for workers’ rights. Dr Timms’ current projects focus on the ethical profile and legacy of mega-events, and on certification and ethical consumerism in the cut-flower industry.

“Sustainability is on the lips of so many companies and community groups”

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“Sustainability is on the lips of so many companies and community groups”

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More information
Centre for Business in Society
Project contacts: Dr David Bek and Dr Jill Timms, Coventry University
Project partners include: Fairtrade, Floristry Association, Horticultural Trades Association
Awards: Highly Commended in the UK and Ireland Green Gown Awards 2019 in the Research with Impact category
www.coventry.ac.uk/cbis
Too often, assistive technology is developed without the direct involvement of the users in the end-to-end design process.
Blending material and design to enhance independent living

Upgrading everyday items to keep older people in their own homes for longer

All over Europe, people are living longer. In the UK alone, there are nearly 12 million people aged 65 and over, with the number of centenarians having increased by 85 per cent in the last 15 years.

A growing population of older adults puts increasing pressure on health and social care services. Researchers from Coventry University have been exploring how the use of assistive technology can help the older generation retain their independence for longer.

Professor Andrew Cobley and Professor Louise Moody are leading on the MATUROLIFE life project: The Metallisation of Textiles to Make Urban Living for Older People More Independent and Fashionable.

Their aim is to develop products which can help older people in subtle and discreet ways by using smart materials and e-textiles to embed assistive functionality in everyday items which are attractive and desirable to own.

The three year MATUROLIFE project is working to improve the quality of life of older people through innovation in assistive products. Using a range of expertise including electronics, printing, electrochemistry, material science, design, clothing and furniture manufacturing, the team are developing products which are enhanced with advanced or smart materials.

Professor Moody said: 'Too often assistive technology is developed without the direct involvement of the users in the end-to-end design process, and is driven by functional requirements. Many smart independent living solutions are restricted to use within the home, where the available systems and connectivity – such as telecare and panic alarms - are available.'

Professor Moody continued: ‘One of our aims is to create a new market that focuses on user needs and requirements. The involvement of design expertise enables a focus on improved functionality and aesthetics to ensure that desirable products are developed.’

The research involved interviews conducted with older people to explore current and future health concerns, digital literacy, and capture views about the acceptability and accessibility of smart and assistive technology.

The feedback revealed that falls were one of their main fears, as well as recognised physical changes - such as a tendency to complete tasks and activities more slowly - and perceived changes in body temperature and sleep patterns. Factors affecting their emotional wellbeing included loneliness and perceived loss of social value. Overall, the participants expressed a fear of becoming more dependent on others as a result of old age.

Researchers explored contextual issues such as the participants’ living environments, and the activities they perform in a typical day to understand overlooked requirements and needs.

These insights were then built on in co-creation workshops, where discussions led to some very clear design concepts. From these concepts, the project narrowed its focus to the development of three specific products: footwear to help improve balance and prevent falls; furniture to encourage mobility and positive sleeping patterns; and clothing that can be adjusted in response to varying temperatures.

Professor Cobley said: ‘The assistance offered by these products will be subtle, with well-designed items adapting and responding to individual or environmental changes to provide the user with support. The development and use of metallised textiles will enable discreet addition of electronic components without adversely affecting the appearance, comfort or the weight of the products.’

With 20 partners from nine European countries in the project, Professor Cobley and Professor Moody have built relationships with wider stakeholder groups including designers, healthcare professionals, manufacturers and carers. As they move towards the development of functional prototypes, they will continue to work closely with these groups and focus on the needs of older people to help make independent living much easier for everyone.

More information

Institute for Future Transport and Cities
Centre for Arts, Memory and Communities
Project contacts: Professor Andrew Cobley and Professor Louise Moody, Coventry University
Thanks to: Paul Magee (Senior Designer, Centre for Intelligent Healthcare; pictured on left) who supported the co-design workshops
Funded by: European Union’s Horizon 2020 Research and Innovation Programme under grant agreement no. 760789
www.maturolife.eu
As the world becomes more concerned with protecting the environment, researchers from Coventry University are working to improve processes in organic farming.

The Organic-PLUS project aims to minimise and eventually phase out contentious inputs, such as antibiotics, plastic, peat and copper-based fungicides from certified organic agriculture. By doing so, organic food systems can work with, emulate and help sustain living ecological systems.

EU and UK regulations for organic farming were written over 30 years ago, and Dr Ulrich Schmutz, who leads the project, explained: “Many contentious inputs are used even more in conventional agriculture; by making organic “cleaner” we hope this will reach all farming systems and benefit all consumers and the environment.”

Over the next four years, the £4 million project aims to identify how these controversial inputs are used across Europe and what suitable alternatives can be developed and utilised. The team is collaborating with 24 partners across 12 countries, as well as farmers, processors and retailers, to develop solutions and overcome barriers to their uptake. They will also work with consumers around their concerns towards inputs in organic farming.

Dr Adrian Evans is leading the social science aspect of the work using large consumer surveys across many countries. Dr Schmutz stresses: “The inclusion of consumer research is vitally important to produce impact on farms and in shopping behaviour.”

Coventry University is taking a transdisciplinary approach to produce alternatives that are realistic to the end-user, rather than purely academic. Dr Francis Rayns, who is leading on Organic-PLUS’s field trials in the UK, explained that in other research, “results are often poorly used, because a solution is proposed which is wildly unrealistic. It might be very interesting scientifically, but it’s not something that people in the real world are ever going to make use of.”

Dr Rayns and the rest of the team are keen to make sure their solutions have a wide impact.

For example, whilst much organic farming research has focused on Northern Europe, the project has many partners from Southern Europe including Greece, Italy, Spain and Turkey, making it a truly Europe-wide programme of research.
During the first year, the team mapped out the use of controversial inputs in various farming sectors, such as the use of paraffin as an insecticide, antibiotics in livestock farming and use of plastic in farming. Dr Sara Burbi is working with livestock throughout the project to inform the research.

One of the ongoing field trials is the investigation of various types of biodegradable plastic as a weed suppressing mulch (a layer of material applied to the surface of soil) for onions and cabbages.

At the university’s Ryton Organic Gardens, a 22 acre site that houses the Centre for Agroecology, Water and Resilience, trials have begun to compare fossil fuel-derived plastic, corn starch-based plastic and novel mulches made by the project’s Polish partner. Project partners in Turkey are mirroring these trials. The teams are measuring how well they suppress the weeds, what effect they have on the crop yield and quality, and whether any detrimental chemicals are left behind in the soil.

The team have linked their research to Innovative Farmers, a UK farmer platform which encourages innovation and experimentation on farmers’ own land. Organic-PLUS Project Manager Judith Conroy organised an open day for the farmers at Ryton Organic Gardens to observe and discuss the mulching trials.

Following these initial experiments, the project will move into modelling and examining barriers to the identified alternatives, ultimately producing policy advice to the EU and national advisory boards.

Dr Schmutz summarised: ‘We believe organic agriculture is good, but it could be made better. We are trying to come up with practical ways to make agriculture, in a wider sense, more sustainable and environmentally friendly.’

We hope the research will reach all farming systems and benefit all consumers and the environment.
Internal influencing in extremist groups

Investigating the dynamics and decision-making process around levels of violence
Our lives are filled with images of violence, both from the real world and the virtual. In particular, scenes of violence related to extremism are a daily feature of the news and a common motif in everything from video games to television dramas and Hollywood movies.

It is therefore an understandable belief that violence is an inherent condition of extremist ideology – a presumption that is fuelled further by continued concerns around radicalisation and the growth of extremism in the West.

However, the reality is that many people or groups who express ‘extremist’ ideas choose not to engage in violence, or only in limited forms of violence, despite having the capability to do so. New research from Coventry University has taken a deeper look at how intra-movement behaviours can have a limiting effect on violent activity.

‘It doesn’t matter whether you’re looking at Al Qaeda, the extreme right, or the radical flank of the animal liberation movement,’ said Dr Joel Busher, lead researcher for ‘The Internal Brakes on Violent Escalation’. ‘Within all of these groups you have this ongoing debate about whether or not they should reach for greater forms of violence.’

Joel’s research project addresses a gap in our understanding of the dynamics and decision-making within extremist groups, taking seriously the idea that group members themselves often apply brakes to either limit, downgrade or cease altogether their use of violence, and trying to identify what those brakes are and how they work.

‘There’s a methodological bias within a lot of the work on conflict and violence in that most of it is based on instances where we see this violence actually happen,’ said Dr Busher. ‘Reflecting our focus on peace and peacefulness, what we’re trying to do is think in new ways about conflict and violence and how violence might be effectively reduced. We are doing this by improving our understanding of processes of non-escalation and de-escalation.’

Internal Brakes takes an extensive look at three case studies of extreme movements to establish a typology of the mechanisms through which groups seek to inhibit or set parameters around the adoption of more extreme forms of violence.

The project looks at the transnational and British Jihadi movement from 2001-16, the British extreme right in the 1990s, and the animal liberation movement in the UK from the mid-1970s until the early 2000s, in order to test the validity of the research across groups characterised by different ideologies and deploying different levels and styles of violence.

In each of the cases, the research found that group members used a range of practices to try to establish and maintain the parameters of ‘appropriate’ violence. What it also found was that it was possible to develop a typology of brakes that has broad applicability across each of the case studies.

This typology organises the brakes on violence around five ‘logics’ on which these brakes operate:

- **Moral brakes**, that position violent escalation as illegitimate or inappropriate.
- **Strategic brakes**, where violent escalation is positioned as being ineffective or counterproductive.
- **Ego maintenance**, where questions are raised about whether violence is in line with the nature and identity of the group.
- **Outgroup definition**, where softening the imagined boundaries between them, their opponents, their opponents’ supporters and state actors makes them less likely to pursue or support violence.
- **Organisational brakes**, where group members institutionalise a reduced capability or inclination to prosecute future campaigns of violence by, for example, enhancing their capabilities to carry out non- or less-violent strategies of action.

Dr Busher hopes that, as well as generating new academic insight, this typology will enable a range of policymakers and practitioners – such as the police, national security agencies, or civil society groups seeking to counter the extreme right – to better assess the threat of violent escalation that different groups might pose.

‘We are more likely to be able to undertake effective interventions to inhibit violence if we understand how the internal brakes on violent escalation operate, because we will be better able to recognise how our interventions might work with or against them. It is particularly important to appreciate the potentially negative, unintended consequences of external attempts to disrupt or hinder the operations of these groups,’ explained Dr Busher.

Since being published by the Centre for Research on Extremism and Security Threats (CREST), the research has been utilised by security, intelligence and policy organisations in the UK and abroad. The project has supported and developed thinking about how to better assess threats, and develop interventions that take into consideration the types of internal mechanisms that this research describes.

The research has been presented at conferences in Helsinki, Oslo, Madrid, Wroclaw, Sofia and Ottawa, and published in the Behavioural Sciences of Terrorism and Political Aggression journal. In December 2020, the research will feature in a special issue of Perspectives on Terrorism, on the issue of restraint in militant movements, for which Dr Busher is a guest editor.

‘There are two big research projects starting up in Helsinki, Finland, and in Leiden, the Netherlands, that are drawing on our work,’ added Dr Busher. ‘It’s quite exciting that there’s a network of researchers internationally who are starting to pick this up.’
Delivering lasting impacts from the Paralympic Games

Will the Tokyo 2020 Paralympic Games have a wider impact on the city’s culture and society’s views of people with disabilities?

Now delayed due to the COVID-19 pandemic, in 2021, Tokyo will become the first city in the world to host the Paralympic Games twice. This makes the city an ideal location to evaluate the real impact of the Games on the lives of local people with disabilities.

Dr Ian Brittain, a world-leading expert in Paralympic history, believes that host cities of the Olympic and Paralympic Games often over-promise on the legacies the Games will leave behind. The usual preconception or promise is that an Olympic and Paralympic legacy will impact the economy, social behaviour, infrastructure of the immediate environment, government policy and increase tourism. However, it often becomes impossible to achieve this because some of the legacies will end up conflicting with each other.

“In London 2012, the effect of the economic crash and changing government disability benefit policies after the Games meant that if there were any tangible, positive legacies for people with disabilities in the UK, they were destroyed within a matter of months, if not weeks,” said Dr Brittain.

Without sufficient infrastructure in place and attitudinal change amongst the non-disabled population, any legacy left behind by the Tokyo Paralympic Games could easily be wiped out. Dr Brittain has led a 12-month project to share knowledge gained from the London 2012 Games with Japanese researchers, so they can effectively evaluate the real impact of the Paralympic Games and better understand the processes involved in generating a meaningful and lasting social impact for Japanese society. Researchers compared the two cultural contexts of the UK and Japan, and the outcomes could assist future Paralympic host cities to better leverage positive impacts from hosting the Games.

In Tokyo, local researchers aim to capture the impacts of the Paralympic Games on society’s perceptions, behaviours and opinions of people with disabilities. Do they change for the better? If so, how long does the legacy of the Games last, and how does this impact vary from one host city to another?

Finding the best way to have conversations with people with disabilities is crucial, and the team of researchers have been exploring how to actively include them in the research design and process. Key to this has been overcoming cultural and linguistic differences, which have

“The Paralympic Games are a fantastic platform to start a national discussion about the issues of disability in the wider society.”
made it a challenge to translate different theories of disability into Japanese.

For the final stages of the project, Dr Brittain presented at the House of Councillors in Tokyo (the Japanese equivalent of the House of Lords). The event included a policy forum and an open symposium, where the researchers presented potential research plans that would extend the project for another three years.

Outputs from the project have included a policy report, media toolkit and research guide. These documents are designed for use by Japanese researchers who are interested in working at the intersection between disability studies and sport and are now available on the project website.

Dr Brittain hopes that this work will not only help to shape future Paralympic Games, but also influence policy and create lasting positive legacies: 'As is the case in many countries around the world, policy in Japan is written by non-disabled people making assumptions about people with disabilities. This culture needs to change in order for things to improve.'
CyberOwl: protecting against cyber attacks

CyberOwl, a Coventry University cyber security spin out, has won a prestigious contract with the UK’s Defence and Security Accelerator, part of the Ministry of Defence (MOD).

Defence and critical national infrastructure in the UK is facing an unprecedented period of serious and sustained cyber risk. CyberOwl will use their analytics capability to support the government’s cyber security initiatives, building on threat intelligence and malware profiling from industry-leading sources.

Established in 2016, the company helps organisations and businesses prioritise cyber security risk in a world where we are inundated with information. Their platform, Medulla, provides predictions and early warnings of cyber-physical attacks, where criminals target digital systems that affect the physical environment. This could include controlling objects like maritime vessels or ports.

Daniel Ng, CEO of CyberOwl, said: ‘Cyber risk is a business risk and should be treated accordingly. Where the cyber risk threatens your organisation’s ability to deliver protection and critical services to society, it becomes important for the defender to get ahead of the attacker. The MOD recognises this need, and has provided us with a fantastic opportunity to develop and showcase such cutting-edge capabilities.’


Professor Siraj Ahmed Shaikh, who leads the Systems Security Group, the research team that supports CyberOwl, said: ‘We feel honoured to be included in the Forrester report. Being recognised and acknowledged by some of the highest people in the technology industry shows just how far we have come in the last few years. The collaboration of research and industry is really helping us to excel.

The Systems Security Group are currently working on ‘Cyber Readiness for Boards (CRfB)’, a collaborative £1 million research project which focuses on the maritime industry. The project team are looking at how they can better equip board members to tackle this type of crime. They will be developing a scenario-based game to engage board members in strategy and decision-making around addressing cyber security risks.

More information
CyberOwl contact: Daniel Ng
www.cyberowl.io
CRfB contact: Professor Siraj Ahmed Shaikh, Coventry University
CRfB partners include: University College London and Reading University
CRfB jointly funded by: National Cyber Security Centre and the Lloyds Register Foundation
Transforming mental health in the workplace

In May 2019 Coventry University led a successful partnership bid to secure funding of £6.8 million from Midlands Engine for the Mental Health & Productivity Pilot (MHPP) programme.

The three-year pilot will assist employers in nine LEP areas across the East and West Midlands to make a step change towards improving mental health in the workplace, with an overall goal of better mental health and increased productivity. A recent Deloitte report indicates that poor mental health costs UK employers up to £45 billion each year, a rise of 16% since 2016.

MHPP is a consortium of over 20 partners from across the Midlands, including universities with research expertise; mental health practitioners and health providers; large, medium and small employers; employer organisations; local authorities; and independent sector organisations.

Findings from the strategic research phase to gather data on employer needs and current activity in mental health across the East and West Midlands show that firms impacted by mental health sickness absence suffer a 25% hit to their productivity.

We are now moving into the delivery phase, which aims to break down the barriers faced by people experiencing these issues and support their return to (and continuation in) work. This will be achieved through the development of an evidence-based model consisting of practical interventions that support employees’ mental health. The pilot will deliver a number of toolkits and initiatives that will look to create a culture that encourages openness and trust around mental health in the workplace. It will test out a screening tool which could be used to identify and support those employees who are most vulnerable or at risk. Other test initiatives will include the introduction of a mental health employment liaison worker, whose job it will be to provide advice to those who stay at work.

Professor Guy Daly, Deputy Vice-Chancellor for Education and Students, said: ‘Across three years, the Midlands Engine Mental Health & Productivity Pilot will look to engage with over 1,600 businesses, train 45,000 staff and reach more than one million employees. Together we will improve the support offered to employees and employers, leading to better mental health and increased productivity across all types of organisations in the East and West Midlands.’

This is the start of a long journey of changing the thinking, cultures and working practices of organisations based in the Midlands.

More information

Project contact: Chitro Ghose, Coventry University

Project partners include: Mind, West Midlands Combined Authority, University of Warwick and mental health partnerships from across the East and West Midlands

Funded by: Midlands Engine

Funded by: Economic and Social Research Council

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What's your research passion?
I’m passionate about improving the quality of life for people living with dementia. I originally trained as a physiotherapist and saw first-hand the loss of independence, self-worth and motivation that people living with dementia commonly experience. Even though people living with dementia might not remember doing an activity, so much happiness and enjoyment can be achieved in that one moment of doing it. Evidence also suggests that engaging with outdoor environments can have a positive impact on mental and physical wellbeing, so my PhD research is looking into the benefits of outdoor and nature-based activities for people living with dementia.

We ask a PhD student six questions to find out more about their work, study and experience at Coventry University.

Why did you choose Coventry University for your PhD?
During my MRes at the University of Birmingham, I worked within a lab-based research group. I loved data collection, but given my physiotherapy background, I was keen to work with people outside of a lab. I looked at a variety of research and public health jobs and saw a PhD opportunity at Coventry University, which combined my interests in activity promotion and research. I was unsure if a PhD was something I wanted to do, but during my interview I was really impressed with the university and was delighted when I was offered the studentship.

Tell us about your experience at Coventry University?
The nature of PhD work takes some getting used to, but being based outside my subject specialist area in the Faculty of Arts and Humanities has allowed me to gain a wider perspective around my research area from academics outside of healthcare. I’ve also been lucky enough to take advantage of other opportunities which are unrelated to my PhD. I’ve competed for the university in distance running, supported by the Sports Scholarship team, and I’ve been working with the Doctoral College to launch a CU Women in Research Network for the upcoming academic year. I’m also a member of the teaching team in the Physiotherapy department.

What's on the horizon for you?
I’m keen to continue working within health around wellbeing, specifically in active ageing and quality of life. I’m interested in project evaluation and research and would love to carry on working with people living with dementia. Whether or not that is within academia I’m yet to decide, but I know that I’d like to maintain the relationships I have made during my PhD by doing some voluntary work.

What's your greatest achievement?
I recently finished my final PhD intervention study. I recruited a group of occupational therapy and physiotherapy students who helped me deliver some brilliant outdoor and nature-based activities to a wonderful group of elderly people living with dementia. I overcame a lot of challenges from the planning stages to data collection itself, and after 16 long weeks I can honestly say it’s been the highlight of my research so far.

Even though people living with dementia might not remember doing an activity, so much happiness and enjoyment can be achieved in that one moment of doing it

What will be the legacy of the PhD work you've undertaken?
I’ve been working with a community garden charity in Birmingham for the last year as part of my PhD, and they have recently received some funding following a pilot study that I was involved in. I will continue to work with them over the remainder of my PhD as they plan future projects involving people living with dementia. I’ve also been fortunate to share my research and experience with physiotherapy students training at several local universities. I hope that by doing this, I’ve given students confidence in offering the best care for the dementia patients they’ll treat in the future.
PhD research opportunities

Coventry University offers fully-funded, self-funded and part-funded PhD studentships to outstanding applicants. Our PhDs are supported by specialised research centres and we have a range of industrially focused degrees.

The university provides high quality professional support for researchers, from PhD to professor, including delivery of doctoral programmes, professional training and development support.

To view all our current research opportunities, please visit:

www.coventry.ac.uk/studentships
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