



**London
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University**

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**Research,
Enterprise &
Innovation**



Our Research

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Despite being advice givers and role models, many healthcare professionals aren't meeting recommendations for healthy activity levels or weight. Dr Jane Wills has been looking at how to affect positive change around this sensitive issue.		The Centre for the Study of the Networked Image (CSNI) brings together a group of researchers seeking new knowledge and understanding of how network and computational culture has and is changing the production and reception of the visual arts, including photography.	
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Young women and girls living in Lambeth are often physically inactive, with enormous long-term implications for their health, as physical inactivity is the fourth leading cause of chronic non-communicable disease. LSBU researchers have been helping to get Lambeth ladies active and fostering long-term behavioural change.		The lives of children throughout the UK are being transformed thanks to a groundbreaking project spearheaded by an LSBU games researcher.	
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Dr Sandra Dudley, Professor Andy Ford and colleagues from the private sector are developing an innovative approach to diagnosing operational inefficiencies in existing buildings to help reduce carbon emissions.		Nearly 95 percent of those involved in prostitution report wanting to leave but feel they have no other option. Among those that do leave, trauma rates are very high. Senior Lecturer in Criminology, Helen Easton has been working on a study to investigate exiting prostitution in the UK.	
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Introduction

At London South Bank University (LSBU) our research is highly applied. We're focused on addressing real-world challenges which is vitally important. Only by connecting our research to the real world can we deliver outstanding socio-economic and cultural benefits to improve the lives and experiences of people and the environments in which they live and work.

We work closely with industry, business, community and government partners, providing the high-quality applied research they need to improve and grow. In turn, these external links enhance student success, providing an industry-standard learning experience ensuring that students have the knowledge and skills that are attractive to employers today and in the future.

Through this booklet we want to share some of the groundbreaking research we have undertaken in the past year, highlighting the benefits and impact, and celebrating the individuals who are dedicated to performing this fantastic work.

Much of our work has been peer reviewed as world leading and internationally excellent. It has made a difference at many levels, such as influencing policy, creating new commercial opportunities, changing the way our industry and businesses work, including approaches to healthcare.

The articles contained in this booklet are just a small sample of the research work taking place across the University. More information about our work, as well as the wide range of benefits of getting involved, can be found on <http://www.lsbu.ac.uk/research>



Professor Paul Ivey
Pro Vice-Chancellor
(Research and External
Engagement)

When your number's up

Healthcare and workforce modelling has become vital in recent years and LSBU leads the way. Healthcare has traditionally looked at workforce supply, but a team at LSBU is building models around demand from organisations in acute care, the community and the third sector.

“One area in which LSBU excels is working with organisations to understand the issues they face and then modelling demand on services including workload. This allows organisations to make the most of their talent and release the potential of the specialist advanced practice workforce to help meet demand,” explains Professor Alison Leary, Chair of Healthcare and Workforce Modelling.

“Specialist nurses manage the care for patients with specific conditions, are usually expert in the field and practice at an advanced level. They can play a major role in not only delivering care but also in enabling patients to manage their own. In England and Wales, however, there is concern that patients may not have equality of access to specialist nursing. Employers are not always aware of the good return on investment this level of practice provides, and instead see them as a potential cost. The postcode lottery looms large.”

Professor Leary has established herself as a leader in using data modelling approaches in nursing to understand the complexity of caring. She has applied this to research in

Impacts:

- > The research on specialist lung cancer nursing uncovered a number of critical findings:
 - There is a clear association between the age of patients and the likelihood of receiving an assessment by a lung cancer specialist nurse, with those over the age of 75 significantly less likely to be assessed than those aged 65 and under.
 - Patients were twice as likely to have been assessed in trusts where the majority of work is done by band 8 nurses (more senior), compared to bands 6 and 7.
 - Patients referred by an emergency route were 57% less likely to receive an assessment, compared to those referred by a GP.
 - Patients with advanced cancer are less likely to have access to specialist services.
 - Patients first seen in trusts with an annual lung cancer caseload of ≥ 265 were less likely to be assessed compared with smaller trusts.
- > Our work with cancer specialist nurses has shown that specialist nursing provision is not equal across England, despite the fact that they improve outcomes, producing numerous pieces of work on the contribution and cost effectiveness of this group of healthcare professionals.
- > Working with NHS trusts Professor Leary has helped remodel cost effective workforce solutions that maintain quality and safe practice by understanding demand and releasing talent.
- > On the strength of her research into the value of and need for specialist advanced nurses, Professor Leary has received many prestigious appointments and commendations, including: invitations to advise the all-party parliamentary groups on various topics, including patient safety; the International Council of Nurses; *Health Service Journal* roundtable on Workforce and Rostering; the Department of Health, Directors of Nursing Group; and the NHS Improvement Safer Staffing group (community).

Making the case for specialist nurses



staffing levels, workload and patient outcomes, and used these approaches and other information to contribute to a robust evidence base for utilising the potential of groups such as specialist nurses as a solution to quality and efficiency issues in healthcare.

“I have worked with numerous collaborators over the last 10 years to establish this area of research, which has led to the building of evidence-based models for employers and funders to maximise the potential of the workforce. Recent research work has included analysis with colleagues at the University of Nottingham and the National Lung Cancer Audit funded by Dimpleby Cancer Care,” adds Professor Leary.

“We analysed the national lung cancer dataset for England, which revealed specialist nursing provision inequalities, and investigated the value of using specialist nurses to provide equitable access to treatment. We have also modelled the workforce for many specialist groups using an understanding of complex work and its benefits to organisations. This has included specialisms such as cancer, sickle cell and multiple sclerosis. We are currently working with the Crohn's & Colitis UK to model the inflammatory bowel disease workforce.”

As Professor Leary's work is international, she has contributed expertise to models of specialist advanced practice around the world in countries as diverse as Norway, the USA and Saudi Arabia. She is currently working on routinely collected data in the acute and community sectors looking at the relationship between aspects of care and other factors such as staffing and safety.

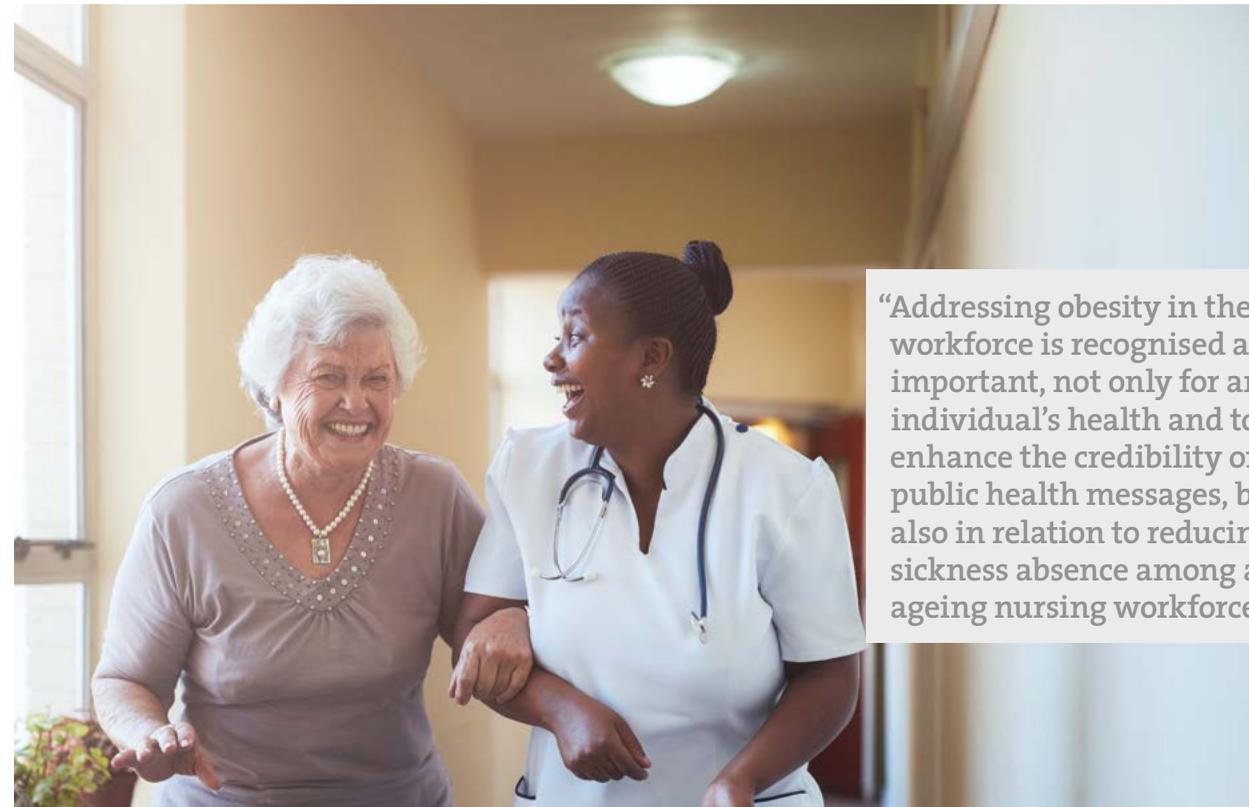
“Specialist nurses manage the care for patients with specific conditions, are usually expert in the field and practice at an advanced level. They can play a major role in not only delivering care but also in enabling patients to manage their own.”

The importance of healthy healthcare professionals

Despite the critical role they play in promoting healthy lifestyles among their patients, evidence shows that many nurses and other healthcare professionals currently do not meet recommendations for either physical activity or healthy weight. Indeed, a prevalence study by LSBU with Edinburgh Napier University shows that nurses in England are at least as likely as the general population to be obese and that those who smoke and are not physically active are less likely to promote healthy messages to patients.

In order to address this worrying situation, Dr Jane Wills, Professor of Health Promotion, and her team have been working with disease prevention charity C3 Collaborating for Health, with funding from the Burdett Trust for Nursing, the Royal College of Nursing (RCN) and RCN Foundation, on a series of innovative projects.

“We initially followed a cohort of LSBU pre-registration nursing students, assessing their health at three different time points over a two-year period,” says Professor Wills. The study involved issuing pedometers to the student nurses, developing a website containing personal goal-setting information and delivering education sessions on having healthy conversations with patients. The follow-on, larger-scale work then involved a systematic review on the impact of nurses’ personal health behaviour on promoting healthy lifestyles, a prevalence study, an effectiveness review of interventions that address obesity among nurses, and a survey of the views of nurses who are obese. A social marketing campaign was developed for NHS trusts titled First Impressions Count, which aimed to promote the importance for staff of adopting healthy behaviours.



“Addressing obesity in the workforce is recognised as important, not only for an individual’s health and to enhance the credibility of public health messages, but also in relation to reducing sickness absence among an ageing nursing workforce.”

Professor Wills says, “The policy discourse on the NHS and the importance of prevention has emphasised that staff should be role models and that this would enhance the credibility of the public health message. We found that, although NHS trusts have a commitment to the health of their staff, most health improvement strategies are unsuitable or unacceptable for frontline workers. We also found that nurses attribute their difficulties in maintaining a healthy weight to their working lives and the challenges of shift work and lack of breaks.”

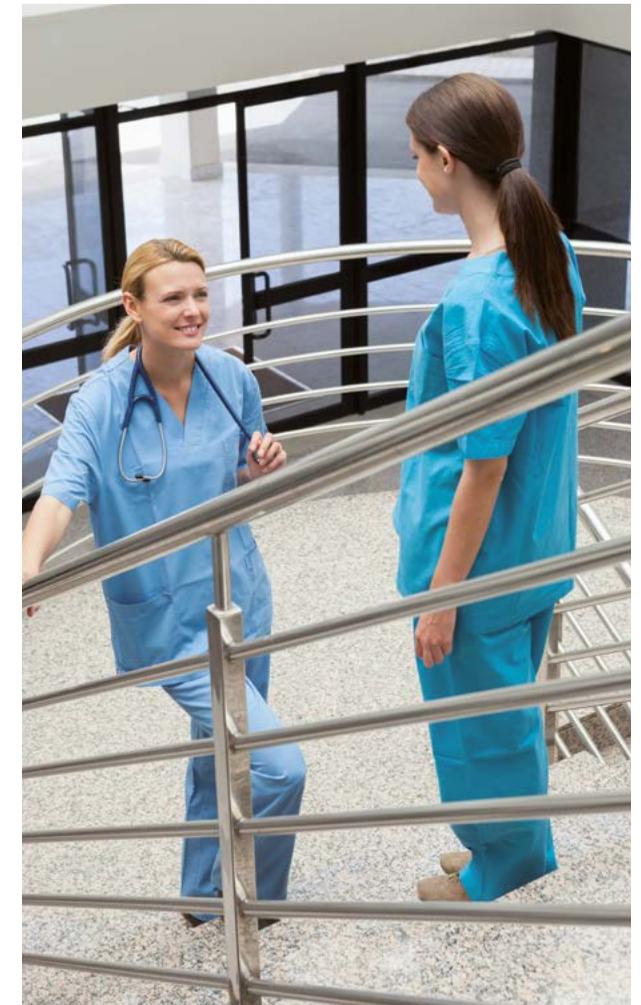
“Addressing obesity in the workforce is recognised as important, not only for an individual’s health and to enhance the credibility of public health messages, but also in relation to reducing sickness absence among an ageing nursing workforce,” adds Professor Wills. “So while our project is most definitely important, we have had to tread carefully throughout because it is perceived to be sensitive, potentially discriminatory and there is reluctance by organisations to raise and discuss obesity in the workforce.”

Impacts:

- > Three publications have resulted from this project, while a further three are in production.
- > The work has been presented at the RCN research conference in both 2015 and 2016, and also to NHS employers.
- > Professor Wills’ work on improving the health of student nurses is being considered by the Nursing & Midwifery Council for inclusion as a curriculum statement.
- > This work to improve the health of healthcare staff has been recognised by a health innovation award from the Health Innovation Network South London. Professor Wills used this award to develop a social marketing campaign and film called *First Impressions Count*.
- > The *First Impressions Count* short film was selected for screening at the Global Public Health Film Festival, held in November 2016 in Denver, Colorado.

“We found a strong view among nurses that their working lives need to be improved before they can be expected to adopt healthier lifestyles, and so this is obviously something that needs to be looked at.”

“Our ideas for future work include moving away from obesity being framed as a matter of individual lifestyle choices and interventions that focus on support and motivational offers such as free exercise classes, to those that fit with nurses’ working lives.”





Young women and girls living in Lambeth are often physically inactive. Since physical inactivity is the fourth leading cause of chronic non-communicable disease, increasing active living in this population is key to improving their long-term health.

As part of the *Active Lambeth, Lambeth Physical Activity and Sport Strategy 2015 to 2020* and the vision that “All people in Lambeth are physically active in their daily lives,” Lambeth Council submitted a joint bid to Sport England’s Community Sports Activation Fund to engage 14- to 25-year-old females in physical activity. This bid successfully resulted in the ‘This Girl Can Lambeth’ project, which aims to provide 12-week physical activity and sports programmes across the borough, to increase physical activity participation among young females to at least one 30-minute session per week.

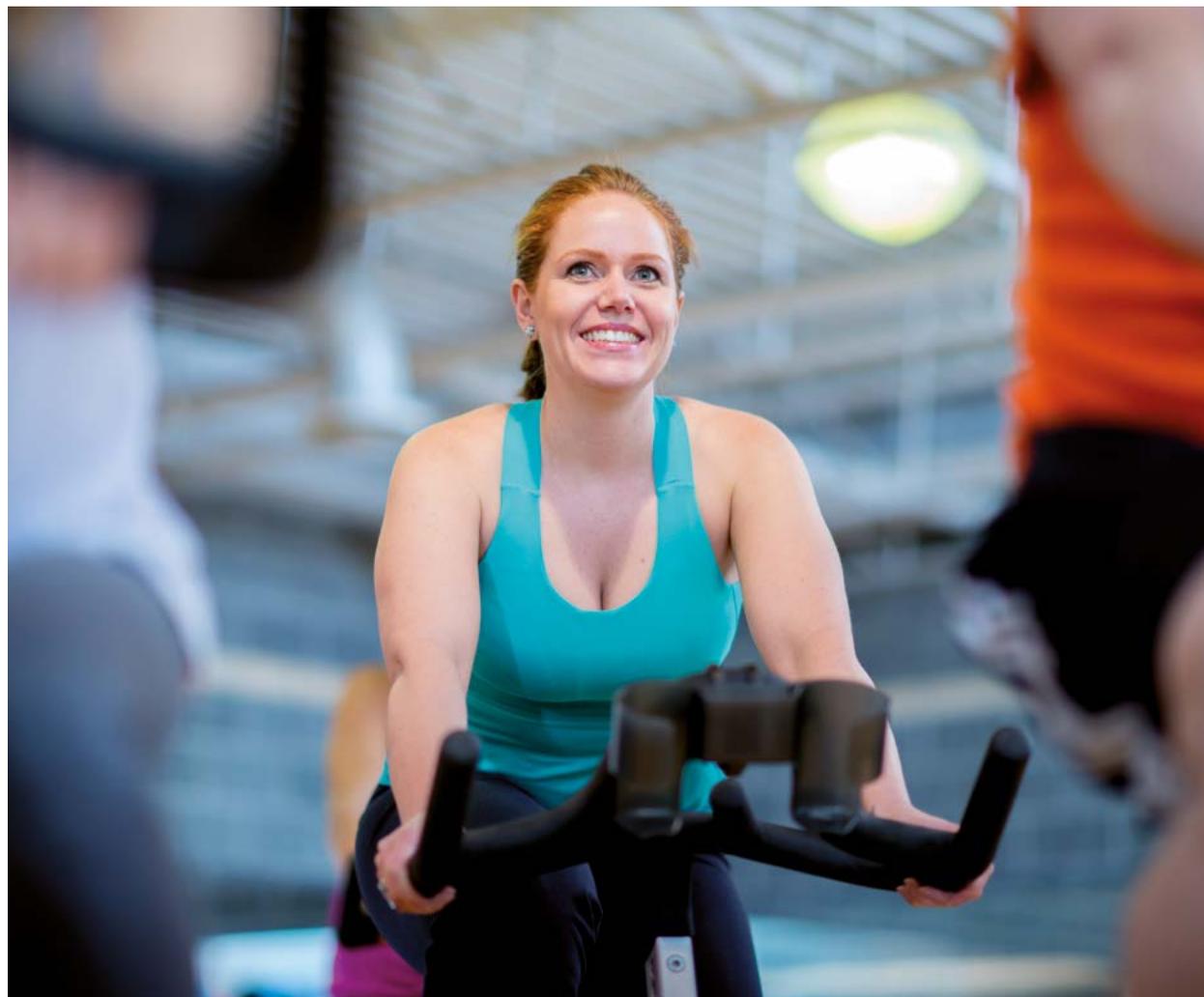
The three-year, multi-stakeholder project began in January 2016, and is supported by a £636,000 grant co-funded by Sport England and Lambeth Council.

This girl can

Getting Lambeth’s ladies active



“Health research is changing. Policy guidance advocates that physical activity services link with academia to demonstrate impact via robust evaluation. For academia, a lab-to-community approach to research with focus on practical interventions for real-world impact is recommended. For us here at LSBU it means we can work with local organisations and help to improve health within our local communities.”



“Our involvement sprang from a recommendation to Lambeth by Southwark Council, on the basis of LSBU’s successful track record for monitoring and evaluating council projects that aim to promote healthy lifestyles and enhance engagement of the local population in physical activity and sports,” says Dr Katya Mileva, Co-ordinator of the Sport and Exercise Science Research Centre (SESRC) at LSBU.

“LSBU’s Research team is set to evaluate the progress and the behaviour change resulting from the delivered sport activation programmes using an ecological (holistic) model. This model maps how the attitude to physical activity is influenced by the provision at individual, intra- and inter-personal, structural, organisational, regulatory and environmental levels. As a result, it combines and considers all factors, from engagement through to retention,” she adds.

“Based on our findings, we will identify the barriers to, and facilitators for, greater engagement in physical activity with the aim to inform changes in local government policy. We will also research the mitigation of these barriers and look at how deliverers can be engaged to provide improved physical activity outcomes and lasting health benefits.”

Where previous projects of this nature have looked at short-term benefits, LSBU’s team has initiated a step-change in the research methodology through using this holistic approach to survey multiple-level factors that influence engagement in physical activity. Thus, this approach, by looking beyond immediate factors, is specifically geared towards fostering long-term

behaviour changes that will be maintained through an individual’s life and not just in the short term.

The project’s innovative approach requires cross-disciplinary expert input from the fields of psychology and physiology whilst working alongside community-based physical activity providers – moving research out of the lab and into the real world.

“Health research is changing,” says Dr Lisa Zaidell, Senior Research Fellow. “Policy guidance advocates that physical activity services link with academia to demonstrate impact via robust evaluation. For academia, a lab-to-community approach to research with a focus on practical interventions for real-world impact is recommended. For us here at LSBU it means we can work with local organisations and help to improve health within our local communities.”

Key to the project’s success has been the involvement of individuals who are able to converse with and record information provided from people based in disparate disciplines and sectors. Notably, the appointment of Project Manager Rebecca Donnelly MBE and PhD student Reisha Hull (Director of Studies – Dr. Rita De Oliveira), who all come from competitive sports backgrounds, has helped ensure the project’s smooth running.

Beyond the project, the consortium aims to shape Lambeth Council’s local standards of evidence by adhering to the *Standard Evaluation Framework for physical activity interventions* (2012) and by reaching NESTA standard at level 5 (2013) for collected evidence on behavioural change, health and wellbeing benefits, which can then lead to the revision of local and national government policy.

Impacts:

- > To date 1,100 young females living in Lambeth have been engaged in the project, with in excess of 6,000 sessions delivered by the commissioned local physical activity providers.
- > Video testimonials from females who were previously inactive attest to the value of the project.
- > Young females spend 66% of their waking hours in a sedentary position, according to the collected baseline data. The LSBU Research team has identified that a strong contributory factor is the inactive behaviour of their peers: the perceived norm among their peer group is being inactive. This is despite the research finding that young females are aware of the health benefits of being active.

New-build state of mind

A collaborative project between LSBU and others involved in mental health provision will play a key role in improving the lives of the thousands of people who live within the UK's psychiatric institutions.

Professor of Psychology, Paula Reavey, explains more: "Mental health-oriented institutions have historically been designed without much examination of how the built environment influences how mental health service users feel in those spaces. The research we are undertaking at MAPS builds on a major study I conducted with the Bethlem Royal psychiatric hospital and in my capacity as a Director for Design in Mental Health UK. The focus of the research is how inpatients live within confined and secure spaces, or psychiatric institutions."

With a colleague at the University of Leicester, Professor Reavey has developed a number of projects to examine design and space in institutions, and both are working as honorary research consultants for St Andrew's. A component of this work also involved mentoring a mental health and space PhD student project, which in turn sparked a follow-on study that looked at people now living outside of hospitals but who had previously been service users.

"Work of this nature is obviously very sensitive due to the need to gain access to secure forensic psychiatric provision, which is always a challenge, especially when using visual methods as we do," adds Professor Reavey. "There are also a number of ethical challenges, such as gaining NHS ethical approval for research and working through a variety of security measures in these types of settings, but we have managed to submit five papers relating to the mental health hospital project alongside a commissioned systematic literature review (by Design in Mental Health Network UK) and a book, *Mental Health and Space: Clinical and Community Practices*.

"I have now secured funding to continue this work and help inform the work of designers and architects, as well as hopefully influence other related areas such as prison design."



"Mental health-oriented institutions have historically been designed without much examination of how the built environment influences how service users feel in those spaces ... the focus of the research is how inpatients live within confined and secure spaces, or psychiatric institutions."

Improving spaces and places for mental health patients

Working with mental health charity St Andrew's, Bethlem Royal Hospital, Maudsley Hospital, the Institute of Psychiatry, Psychology & Neuroscience at Kings College London, the University of Leicester and Design in Mental Health UK, a research network called MAPS (Mental Health and the Psychology of Space) has been formed.

Impacts:

- > Professor Reavey will advise St Andrew's on the development of a new, multi-million-pound centre for mental health.
- > It is hoped that the work undertaken will also inform and influence "castle geography" – prison architecture.
- > Professor Reavey is a Director for Design in Mental Health UK and has been awarded funding to develop a research repository and brochure. Professor Reavey has also been awarded funding from St Andrew's to carry out a research project on memory and confinement in psychiatric institutions.



Doing the Southwark walk

Faced with pressure from online retail, competition from national chains and their proximity to central London, many high street traders in Southwark are looking for an effective response.

Southwark Council's Economic Wellbeing Strategy has been developed to promote employment, business investment, town centre vitality and financial independence across the borough. As part of the initiative, the council recently commissioned LSBU to conduct a comparative study of eight high street locations in Southwark.

"To take the temperature on Southwark's high streets, we worked with the council, local traders, LSBU data specialists and a cohort of marketing students to design and undertake the study, with findings then reported back to the council by our students," explains Senior Lecturer, Dr Charles Graham.

"Southwark has areas of extreme affluence and some areas of high economic deprivation where the effects of the recession are still strongly felt, so the competition to attract shoppers has become intense across the borough. Annual business closures have been running above a pre-recession average rate of 1,316 (2004-2008), reaching 1,730 in 2012. Our broad aims were to establish patterns of weekday and weekend footfall on eight high streets; to understand who was using the high streets; how they used them; what drew them there and how often; and what they felt about those retail centres."

Over two days of data collection across the borough, the team completed a total of 684 usable interviews, and made over 100,000 footfall observations. Reports were written up and made publicly available, particularly targeted towards the local traders who expressed a need to see marketing data, with an overview also created for the council's strategic planners.

"The focus was to establish initial pedestrian density benchmarks, identify some potential drivers of increased footfall, and develop insight that could inform discussion of routes to improved customer attraction and conversion in each location," adds Dr Graham.

"It is always a challenge to manage the quality of the data collection in a study like this, but our students remained engaged and keen to take part and rose to the assignment superbly. As a result, and thanks to Southwark Council, they have enjoyed a particularly valuable learning experience while contributing to the community.

"Most importantly though, our findings show that the high street may not be in quite as much trouble as people think. The feedback collected revealed that shopping online is an additional rather than a replacement activity; Southwark's local high streets are not that quiet, with footfall densities on the busiest days matching traffic levels in some bustling west end locations; and when asked which other high streets Southwark shoppers visit, the 10 most popular choices included four other destinations in the same borough. We found that the typical visitor comes to the high street frequently but briefly, and for a very wide variety of reasons, but all gave shopping as the primary or secondary purpose of the visit.

"A good strategy for independent businesses is therefore one that combines relationship marketing with efficient convenient service, to grow repeat custom from the plentiful available footfall."

The success of the study has prompted further academic research into predictable relationships between footfall, retail attraction and conversion rates, and data is currently being collected on high streets and malls in London and the Middle East.

"Our findings show that the high street may not be in as much trouble as people think... a good strategy for local retailers may therefore be to combine relationship marketing with efficient convenient service, to grow repeat business from the plentiful available footfall."

Southwark study shows there is still life in the local high street

Impacts:

- > Through qualitative studies, LSBU engaged with representatives of its local business communities, especially from Camberwell, the Latin Elephant (association of Latino-run businesses in Elephant and Castle) and Waterloo, to establish and then meet their data requirements.
- > Previously the council had little footfall or formal survey data from these locations, and so needed this data for central strategic planning, while independent traders knew little about the potential customers on the high street. The council now has an extensive collection of reports.
- > The insights should inform:
 - council decisions (for example, as a major employer in the borough, the location of council offices has the potential to have an impact on high street footfall significantly and positively)
 - local marketing decisions by individual traders (for example, in anticipating peaks and troughs of demand, and better identifying and then meeting local needs and wants)
 - local marketing decisions by location (for example, in identifying areas for improvement to the public realm to the benefit of the wider business community and consumers)
 - possible interventions designed to increase local footfall by attracting shoppers from wider catchment areas.
- > As an example of the wider impact of our student-driven learning from live briefs, Lambeth Council has now expressed interest in our research expertise to help them to improve the take-up of their online billing systems for payment for council services.

Energy management and analysis: exploiting existing Building Management System (BSM) infrastructure and data buildings



Development of smart building platform is certainly no waste of energy

With estimations revealing that non-domestic buildings are responsible for nearly one-fifth of the UK's carbon emissions, and non-domestic floor space predicted to rise by one-third by 2050, it is clear that their management and operation need urgent attention. This is backed by findings from the Low Carbon Innovation Co-ordination Group, which stated in 2012 that innovations in the management and operation of non-domestic buildings are capable of yielding annual savings of £3.1billion by 2050.

"Improving the energy efficiency of buildings is a key priority, especially if the UK is to meet its carbon reduction targets," says Dr Sandra Dudley, Director of Research and Enterprise in the School of Engineering.

"All non-domestic buildings at the point of construction, sale or rent require a non-domestic Energy Performance

Certificate (EPC), which is valid for 10 years. However, in 2014, for non-domestic buildings, 16 percent of EPCs were rated as the lowest energy efficiency category, which is clearly an issue that needs addressing."

The cause of poor building energy performance is often due to misaligned or malfunctioning heating, ventilation and air conditioning (HVAC) systems. As an example, a building may have an air conditioning system operating within the same room as a high-output heater, meaning both are caught in a loop of trying to compensate for the over-activity of the other. As a result, Dr Dudley, Professor Andy Ford and colleagues from the private sector are developing an innovative approach to diagnosing operational inefficiencies that involves analysing data collected from buildings' monitoring systems via a bespoke platform.

"At present, buildings' systems collect data to aid control of the services they operate, but the meaningful and useful analysis necessary to achieve a high level of optimised control is currently limited," adds Dr Dudley. "Our system converts these large volumes of data input into simple, user-friendly views, indicators, fault detection and diagnoses. It also draws upon data-mining techniques to increase the speed and scope of analysis; interface with modelling software to quantify the gap between theoretical design and actual performance; interlink with strategic carbon management software; enable dynamic demand control; and develop interfaces for a range of audiences, including education and training. Finally and most crucially, it will reduce complexity and information overload by directing attention to practical solutions for performance issues."

The platform is currently in use at 60 sites covering 100 buildings, with one – the *Financial Times* headquarters in London – reporting that comfort complaints have halved since the platform was installed. Alongside these here-and-now practicalities, Dr Dudley believes there are considerable benefits for the future too: "With the real need of large-scale buildings to reduce their carbon footprint, industry requires highly skilled graduates to

Impacts:

- > The innovations generated result in significant energy and, hence, carbon savings for buildings, providing major economic and environmental benefits.
- > By optimising building function, this system improves the human comfort level of buildings via the rapid detection of malfunctioning HVAC systems.
- > The project will yield a unique educational software package for LSBU engineering students (based on the commercial platform for real-world experience) on how to use energy management services to deliver improved building performance.

manage and improve property performance. With worries that there is a shortage of real-world experience amongst graduates, this project addresses industrial needs through smart energy fault-finding systems and will help to produce highly skilled graduates at the forefront of understanding and managing building energy performance."

"Our system converts the large volumes of data input to the platform into simple, user-friendly views, indicators, fault detection and diagnoses... directing attention to practical solutions for performance issues."



Going underground

Waste heat recovery project keeps capital's commuters cool

A new partnership has been established between London Underground Ltd (LUL), Islington Council and LSBU that should make a vital contribution to cutting carbon emissions while keeping the capital's commuters cool at the same time.

"We've been working on cooling London Underground for a number of years and one recent study involved working at York Road Station near Islington. The heat removed by cooling the Underground is usually exhausted to the outside air and wasted," explains Dr Gareth Davies, Senior Research Fellow in the Centre for Refrigeration and Air Conditioning.

Nick Boot Handford of LUL expands on this: "During these discussions, we realised that there was both a big heat demand in the area and a means of distributing heat via Islington's district heating scheme. Therefore, in collaboration with Islington Council and LSBU, we decided to investigate linking the Underground's cooling system with Islington's district heating scheme to provide cooling and heating from one system."

There are two key issues affecting London's Underground tube system: the fact that it generates a lot of heat that is currently not recovered; and the fact that this waste heat can contribute to the overheating of tube carriages, making travel uncomfortable for passengers. The existing partnership with LUL and the idea for reusing the heat from York Road Station led to a project called Metropolitan Integrated Cooling and Heating (MICAH).

MICAH was established to determine the feasibility of transferring waste heat from London Underground to Islington Borough Council's district heating network, thereby providing a low carbon heating and cooling solution. It involves the transfer of the heat generated in the Underground to where there is demand for heat, and in doing so provides cooling for LUL.

"MICAH is definitely an important, low carbon, environmentally friendly way of providing heat," says Dr Graeme Maidment, Professor of Refrigeration and Air Conditioning. "Currently, heat constitutes 47 percent of all end use energy demand, while cooling accounts for 19 percent of all electricity use. Alongside other global environmental challenges, reducing heating and cooling energy use is therefore a high priority.

"The government has agreed via the Climate Change Act to reduce CO₂ emissions by at least 80 percent by 2050, and some of the gases used in cooling have a high Global Warming Potential. As a result, any initiative that reduces their use has to be worth investigating."

The feasibility study funded by Innovate UK will investigate the technical viability and business case of utilising LUL's heat exchanger at York Road Station to transfer heat to Islington Borough Council's district heating network. Combining the two systems should reduce the energy required by both parties.

"As well as looking at how it might work technically, there are also some key non technical barriers for this project," says Professor Maidment. "Issues such as how a scheme might work commercially, who is commercially responsible for what and how commercial transactions might take place need to be assessed. We also need to see whether the scheme is eligible for Renewable Heat Incentive funding and, if so, who the recipient of the grant would be. As a result, the project is about working through many of the technical, commercial and behavioural questions involved, not only to identify its feasibility for LUL and Islington Council, but also to explore the potential for utilising other sources of waste heat in the future, such as data centres and supermarkets."

With this in mind, the partnership is currently applying for funding for a demonstration project, alongside a funding stream via Innovate UK to progress initial feasibility studies.

Impacts:

- > The project is pioneering the repurposing of waste heat generated by the underground tube system as a potent resource for improving London's energy efficiency and cutting carbon emissions.
- > Although a new project (it started in 2016), the partnership has already had two papers accepted for conference, and the team has also been invited to run a workshop on the concept in Ireland.
- > A breakfast briefing with London Underground was presented at the Houses of Parliament.

Check out those labels: the psychology of precision

“The impact of mistakes on business reputation is great, to say nothing of the fines and costs associated with repackaging or replacing the produce involved. Setting up labels for printing is typically a manual task, but the reason for the failures that arise were still not understood prior to the development of our research.”

The mis-labelling of food in the UK costs around £8million to £10million each year, with tons of food wasted and the accompanying impact on the environment that brings.

To combat this, LSBU received funding from Innovate UK to undertake research into the causes of mis-labelling and develop a solution to this challenging issue.

“Quality control checks on supermarket packaging are conducted to ensure that food is correctly labelled. However, despite these multiple checks and various levels of quality control in the labelling of fresh food and vegetables at packing and distribution centres, mistakes do occur,” says Senior Lecturer Jamie Smith-Spark. “Whilst these mistakes are infrequent, their impact on business reputation is great, to say nothing of the fines and costs associated with repackaging or replacing the produce involved. Setting up labels for printing is typically a manual task, but the reason for the failures that arise were still not understood prior to the development of our research.”

Working with Sainsbury’s, software developer Muddy Boots and food packaging company MACK, a Research team led by Jamie and Dr Hillary Katz (Senior Lecturer in the Department of Psychology) conducted a two-year laboratory-condition study of label checking in packaging sites. The resulting data was analysed to determine the principal causes for mis-labelling.

Check this out: research reduces supermarket label errors and makes big savings

“We used an eye-tracker to record eye movements during label checking. We found that the best checkers were those that checked one field of information at a time when moving between a specification sheet and the printed label. Other checkers tried to remember several fields of information at a time and check these on one visual pass of the label. Others had no discernible strategy. The most accurate performers were those that used a serial, one-piece-of-information-at-a-time approach,” reveals Jamie.

“We are hoping that lessons learned can now inform research in other areas, as this form of perceptual blindness is not unique to mistakes in labelling. As an example, medical staff can possibly miss the patently obvious when looking at x-rays. As a result, another grant application to apply this technique to other domains is in development, while a separate study will look at the development of professional label checkers. There is also particular interest in working with people with an Autism spectrum disorder, which Dr Katz has begun to lead work on.”

Impacts:

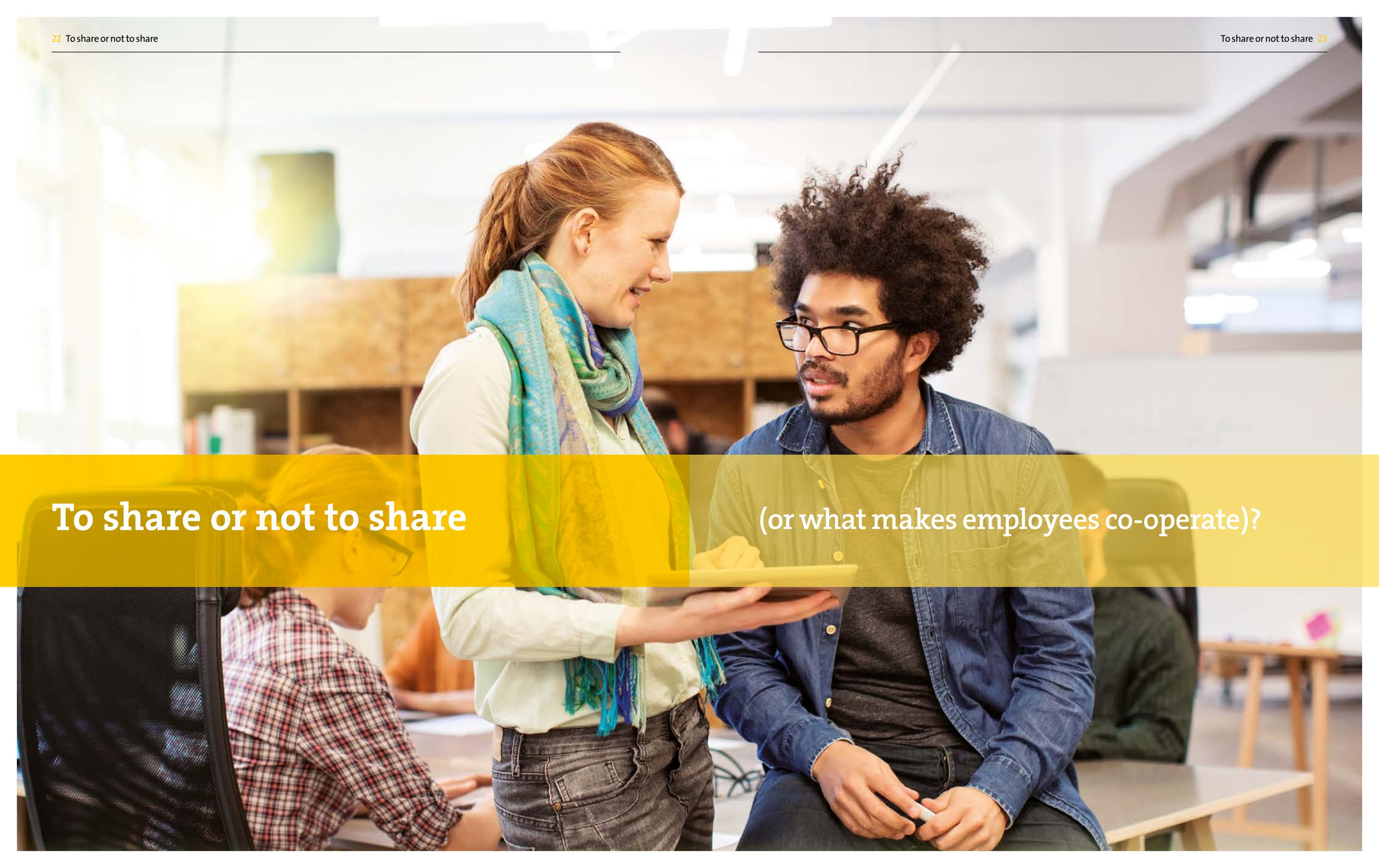
- > A label-checking app created by project partner Muddy Boots has been commercially released as part of the Greenlight software package series.
- > The app was tested by the packaging company MACK: in a three-month, on-site trial it reduced errors to zero.



Typical values	100ml contains	250ml contains	%GDA*	typical adult
Energy	199kJ	500kJ	6%	2000kcal
Protein	47kcal	120kcal		
Carbohydrate	0.5g	1.3g		90g
of which sugars	10.5g	26.3g	29%	70g
Fat	trace	trace		
of which saturates	trace	trace		
Fibre	trace	trace		
Sodium	trace	trace		
Salt equivalent	trace	trace		

*Guideline daily amounts

vitamins/Minerals 100ml contains (42% RDA) 62.5mg (100% RDA)

A woman with reddish-brown hair in a ponytail, wearing a white long-sleeved shirt and a blue and green patterned scarf, is holding a tablet and talking to a man. The man has a large afro, glasses, a beard, and is wearing a blue denim jacket over a dark t-shirt. They are in a bright, modern office or meeting space. In the background, there are wooden shelves, a whiteboard, and other people sitting at tables.

To share or not to share

(or what makes employees co-operate)?



During the late 1990s knowledge management became the latest management hype, spurred along by new developments in IT and a firm belief that intangible assets – the knowledge of employees – could be made productive in a heartbeat. Companies worldwide invested billions into new groupware and database systems to manage knowledge, which then failed miserably.

“Why was this?” asks Dr Karin Moser, Director of Research and Enterprise and Associate Professor of Organisational Behaviour in the Business School. “Because they overlooked the simple but important fact that any technology is only as good as the people who use it, and that these people not only need to be trained on the new systems, but also motivated to use them.”

Key areas such as this are where Dr Moser’s research as a psychologist and computer scientist comes in. She addresses these gaps and has devised experimental studies that simulate knowledge sharing at work to understand the underlying motivations of individuals to share or withhold their knowledge. She has also conducted surveys and interviews with many companies and stakeholders, and advised both private and public sector organisations in different countries on knowledge management strategies and how to assess and monitor their employees’ knowledge and motivations.

“The reason why managing knowledge is very challenging is that knowledge sharing constitutes a social dilemma. While it is in the collective interest of a company that employees share their knowledge, this is not necessarily in the interest of the individual,” adds Dr Moser.

“If we look at knowledge as the currency in an exchange relationship between employee and employer, we have two stakeholders with very different cost-benefit matrices. Why? Because knowledge is power and acquiring expertise takes a lot of time and effort, and people don’t want to just give up this advantage. Another reason is that knowledge sharing is what is called ‘extra-role behaviour’ in psychology. Experts don’t just know ‘more’, they are able to contextualise problems differently and can make connections faster and at a higher level of complexity, which leads to better quality decisions and higher creativity in thinking. Much of this is very difficult and sometimes impossible to explicate; it is tacit knowledge and simply what highly skilled and experienced people do rather than what they say.

“Because of the nature of knowledge, employers cannot just order employees to divulge their knowledge and to write it all down. This simply won’t work and tacit knowledge can be easily withheld without breaking an employment contract. Knowledge transfer takes a lot of effort and time, and only works if people are really motivated to share, because it makes sense to them and they stand to gain from it in some way.”

“Knowledge transfer takes a lot of effort and time, and only works if people are really motivated to share, because it makes sense to them and they stand to gain from it in some way.”

Dr Moser’s idea to understand knowledge as a common good and knowledge sharing from a social dilemma perspective is new, whereas previously the social dilemma approach had only been applied to physical and monetary resources but not to intangible assets. “My studies have shown how structural aspects of work organisation impact on knowledge sharing, such as how projects are allocated to departments, how mental models of

knowledge management implicitly guide senior managers’ decisions and leadership behaviour, or how highly skilled experts can be motivated to work in teams even if they could easily outperform most members or even whole teams. This is all critical information that has major impacts on the knowledge management approach of organisations worldwide.”

Impacts:

- › Dr Moser has worked with approximately 20 companies and government organisations over recent years.
- › This includes a five-year project with Sulzer Ltd, an international high-tech company that wanted support in improving their knowledge transfer and knowledge development in their Research and Development (R&D) intensive engineering and IT departments.
- › As a result of Dr Moser’s work, Sulzer completely changed their organisational structure to reduce barriers to share knowledge across disciplines, which required changing the entire project management and accounting system of the firm. They put in place new meeting structures, and introduced good practice workshops and micro-reports as a consequence, and new group-based, non-financial rewards for successful R&D projects. They also introduced communities of practice for employees to increase and diversify their knowledge with peers, and allowed up to 10% of working time to be used on knowledge-related activities that were not related to customer accounts.
- › Sulzer also reconsidered the roles in their R&D teams to reduce role conflicts that had had a negative impact on team co-operation and productivity. When the effectiveness of the measures taken was evaluated, there was clear positive impact on satisfaction of employees and on the productivity of the interdisciplinary teams.
- › Another recent project was with Swiss Olympic, which wanted support in developing a knowledge management strategy that would allow the organisation to include their many stakeholders to promote top athletes and teams. The stakeholders are hugely diverse and include the individual athletes, coaches, sports clubs and their representatives, schools and the families of young, promising athletes,

the volunteers working for clubs and schools, the Ministry of Sports, the sports facilities and their owners, and the universities and companies developing and improving the sports materials and mental and physical training methods.

› All of these stakeholders have different interests and agendas, but all hold a wealth of knowledge in their respective areas that should be shared across clubs and athletes in the interest of sports promotion. The majority of them, however, are only loosely connected, with little formal obligation to collaborate. Swiss Olympics (as a non-profit organisation) has limited direct power and influence. Dr Moser’s work included a detailed analysis of the cost-benefit matrices for all stakeholders to establish where there was a common ground for knowledge sharing, identifying joint goals and incentives for collaboration and where the major conflicts of interest were. Based on this analysis and Dr Moser’s recommendations, Swiss Olympic defined a new knowledge management strategy, introduced a new electronic platform for all partners to share information about new training methods and technological innovations in sports materials, and a new meeting structure for experts to share knowledge and experiences between athletes, coaches and clubs. This also included re-evaluating the roles of, and the relationships with, different types of sports clubs, from the big organisations with lots of money such as successful football clubs, to the small players, such as community-based clubs for less popular sports that depend heavily on volunteers.

› The analysis highlighted the importance of the non-professional stakeholders in sports promotion, such as the club volunteers, and the families of young athletes. The implementation and evaluation of the measures are ongoing.

The big picture

CSNI seeking solutions to problems of visual communication in our time



Outcomes:

- > The work of Professor Dewdney and his team at the CSNI has been showcased in conferences and forums held in an array of countries, including Brazil, Sweden, USA and Germany, and this has led to a number of invited, online blogs.
- > CSNI and The Photographers' Gallery (TPG) are research partners, involved in collaborative PhD Research on the computational image and run a related annual public programme of workshops and talks.
- > Andrew's work with Katrina Sluis, lecturer at LSBU and Curator of Digital Programmes at TPG has recently led to 'Unthinking Photography', a new online resource for exploring, mapping and responding to photography's digital, networked life.

The Centre for the Study of the Networked Image (CSNI) brings together a group of researchers seeking new knowledge and understanding of how network and computational culture has, and is, changing the production and reception of the visual arts, including photography.

In particular, it is looking at the automation of visual culture through computing, and seeking answers to contemporary questions such as: How are computer's being 'trained' to see? How will the application of algorithms of vision influence how we receive and understand images, and how do those images relate to external events and realities? What are the new forms of deciding the cultural value of the circulation of images online?

Professor of Educational Development, Andrew Dewdney, reveals more: "Looking at the emergent media of the internet from the perspective of when old (pre digital) media was new reminds us that our current definitions of the digital equivalents of analogue media are far from settled. What defines network media is precisely the sense that it is permanently under construction, ephemeral, if not fugitive by nature. For us the term 'networked image' is a temporary placeholder for a set of contemporary practices, platforms, software and computer programs that are reconfiguring the visual and sonic in culture and shifting settled notions of temporality (time), movement and space."

Professor Dewdney says that CSNI exists to seek answers to pressing problems of visual communication in our time. "The internet, computer networks and digital technologies have transformed the environment of knowledge and information as well as everyday life. Research into the uses and impact of computer visualisation systems and their effects upon society is still in its infancy. The centre provides a focus for both advancing and evaluating this research as well as for defining new questions for future investigations."

The centre has four related research topics: photography, performance, curation and archives, which are reflected in the projects undertaken. Research specialisms include art theory, art practice, art history, curation, performance,

photography, sociology of culture, and cultural and media studies. CSNI emphasises embedded, collaborative and co creation approaches to research, with empirical fieldwork, research approaches and methodologies to connect policy, practice and theory actively encouraged.

The centre is currently in partnerships with the Photographers' Gallery, London, and Rhizome, New York, based around collaborative PhD research that looks at public exhibition and curation of online content, as well as access to digital archives.

"At the moment we are using a range of research methods to identify our objects of study drawn from science and technology studies and Actor Network Theory," adds Professor Dewdney. "Our approaches include practice led research in working with new media artists, with our contribution to transdisciplinary research being to bring researchers together across the fields of art, science and technology.

"As with most projects of this nature, the challenges include convincing funders that our outlook and approach are worthy, seeking technology partners and striking the right balance between critical understanding and real world applications. However, with what has been achieved so far, I am convinced that the centre will go from strength to strength. Exciting future plans include a collaboration with the Royal College of Art and University of Amsterdam on a new project, looking at online archiving, with a case study of the Google Art Project and Google gigapixel camera."

"Research into the uses and impact of computer visualisation systems and their effects upon society is still in its infancy. CSNI provides a focus for both advancing and evaluating this research as well as for defining new questions for future investigations."

Enable gaming

Impacts:

- › Enable Gaming won the Best Educational Initiative and Talent Development award at the prestigious The Independent Game Developers' Association (TIGA) Awards 2016. Nominees included industry heavyweight Sony's PlayStation First initiative, as well as fellow higher education institutes Staffordshire University and University of the West of England.
- › The success of Enable Gaming helps Lifelites – a charity which donates specialist technology to children in hospices – in their bid for funding from game industry charity GamesAid. This helps Lifelites to provide equipment and services for terminally ill and disabled children that wouldn't be possible otherwise.
- › The project improves quality of life for people with life-threatening disabilities and can help to foster their independence through providing employment opportunities as testers.
- › These employment opportunities could, in turn, potentially reduce healthcare costs.
- › The testers are gaining valuable skills, as are the LSBU students working with them.

“Enable Gaming is providing students with life lessons that are impossible to replicate in a classroom, which also makes them incredibly employable as graduates. The most important thing though is that Enable Gaming truly has the power to change the lives of children in hospices.”

Using video games to truly transform children's lives



The lives of children throughout the UK are being transformed thanks to a groundbreaking project spearheaded by an LSBU games researcher.

Enable Gaming is an award-winning action research project set up and led by Siobhán Thomas. The project is a unique games education initiative that advances innovation, knowledge and research in accessible game development. Now in its fifth year, the initiative sees charity Lifelites (www.lifelites.org) commission game development students to make accessible games and games hardware for 9,000 terminally ill children in 54 hospices.

Lifelites provides specialist technology for young people at children's hospices across Britain. The project develops video games that are accessible to youngsters with disabilities and that can be played on the specialist equipment that Lifelites supplies for children in those hospices.

“It is a project that is amazing on so many fronts,” says Siobhán. “Students get the chance to work with a professional client on a real-life brief, are under pressure to deliver quality games, and they know what they're doing has genuine consequences. It is providing students with life lessons that are impossible to replicate in a classroom, which also makes them incredibly employable as graduates. The most important thing though is that Enable Gaming truly has the power to change the lives of children in hospices.”

When initially commissioned, the students were tasked with developing computer games for children at all 54 baby and children's hospices in the UK. Due to the range of disabilities experienced by the children, all games had to be designed with accessibility and specialised equipment needs in mind. The project incorporates technology, creativity and diversity and now encompasses a number of additional aspects.

Alongside the original development of video games accessible to youngsters with disabilities, there is now a key study being undertaken to examine how participating in video game development can improve the employability of people with disabilities.

“People with severe disabilities have limited employment opportunities and, as a consequence, are often excluded from society,” explains Siobhán. Because the games are now developed with, and tested by, people with disabilities such as Duchenne muscular dystrophy, the project is opening up new avenues that weren't possible before. Work is also taking place with the charity DMD Pathfinders, which helps teenagers and adults with Duchenne get into employment. Siobhán's research therefore playing a vital role in raising workforce diversity in the fast growing games industry. This aspect of the project has been recognised by special needs employment groups, and its innovative nature was profiled in 2016 by GamesAid.

Siobhán, who was named one of the Top 30 Women in Games in 2016, adds: “Recognition such as our recent The Independent Game Developers' Association (TIGA) award shows the immense value the industry is placing on the work we are doing with this project. We're at the forefront of tech advances, constantly pushing the boundaries of what games education is. For us, innovation involves prioritising accessibility and diversity in all the work developed across the course and it is just so rewarding to be able to say that the games we make truly change people's lives for the better.”

Inspired by the success of Enable Gaming, plans for the future involve developing an international games accessibility curriculum training program, and also a groundbreaking project that sees people with disabilities advancing the UK as a global powerhouse in competitive e-sports, using video games to help them become more involved.

Big data, little energy

Changing behaviour to create low-impact data centres

There are currently six billion connected products in our networked world, a figure predicted to rise to 120 billion by 2020. These vast networks are supported by equally enormous data centres, with even bigger energy appetites. In 2015 alone, data centres consumed 416 terrawatt hours (TWh) of energy globally.

As the demand for data centres increases so will the demand for energy, which raises significant concerns over their sustainability. If nothing is done, data centres pose a direct threat to our efforts to reduce carbon emissions.

“One of my colleagues from the iSTUTE (interdisciplinary centre for Storage Transformation and Upgrading of Thermal Energy) management committee, Dr Robert Tozer, was working for Hewlett-Packard (HP) and recognised that the sustainability of data centres was, and is, an issue of concern. At that time BREEAM were developing some metrics on data centres and Robert realised that there were some shortcomings,” says Dr Deborah Andrews, Associate Professor of Design.

6bn

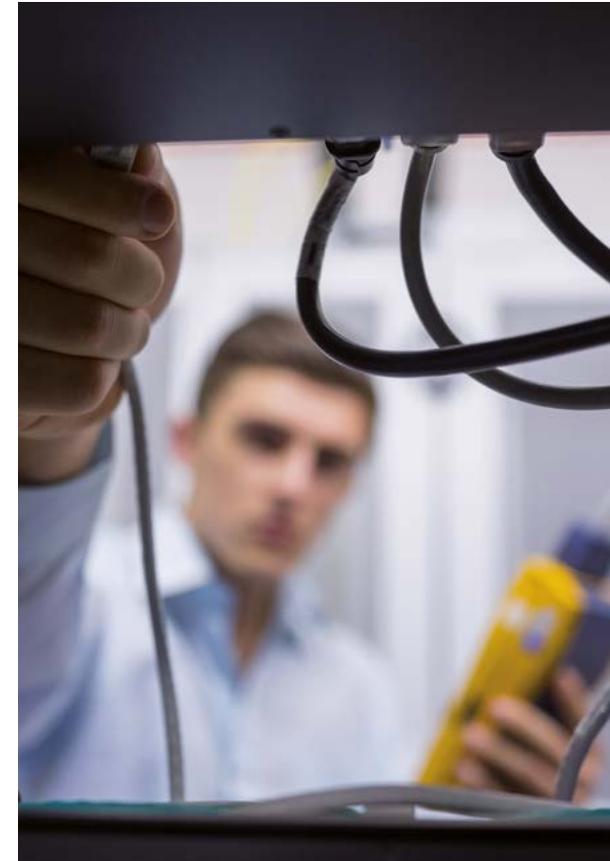
There are currently six billion products connected in our networked world, all supported by data centres, and predicted to rise to 120 billion by 2020.

“As a result, an Engineering and Physical Sciences Research Council (EPSRC) Cooperative Awards in Science & Technology (CASE) award was obtained by Robert and Professor Graeme Maidment to undertake research with PhD student Dr Beth Whitehead. I became involved as first supervisor and to lead the Life Cycle Assessment (LCA) aspects of the project.”

Dr Whitehead and Dr Andrews took the project forward by developing a tool for designers and engineers that helps to minimise the whole-life (combined operational and embodied) impact of data centres through smart design of the buildings and the equipment that they house. A number of factors affect the impact of the building, which can be designed to reduce operational energy inputs for air conditioning through use of fresh air and ‘free’ cooling. We have also considered the environmental impact of water-based cooling systems and the embodied impacts of this type of building as well as the electrical and electronic data processing equipment.

“The work we have conducted has been in parallel with LCA work on refrigerated retail display cabinets (RDCs), and further work is now ongoing regarding data centres, commercial refrigeration equipment and blinds and shutters, in particular with respect to introducing a Circular Economy (CE),” adds Dr Andrews. “I have also recently obtained a research sabbatical to help me continue my work, with a new focus on reducing the materials footprint of data centres, servers and other electrical and electronic equipment, because it is usually refreshed every three years. A CE for this equipment is vital to minimise its environmental impact.

“I am also engaged in research on drivers of change in user behaviour. We are already investigating the behaviour of supermarket procurement teams regarding perception and purchase of remanufactured as opposed to new RDCs, the use of blinds as passive energy-saving products and their impacts on thermal and visual comfort and related occupant productivity. We will also be investigating data centre managers’ behaviour as part of the drive to reduce their overall Life Cycle impact.”



416tw

In 2015 alone, energy-hungry data centres consumed 416 terawatt hours of energy globally.



Impacts:

- › The work demonstrated that it is important not just to look at the carbon footprint, but at the overall environmental footprint of data centres: land use, water use and water contamination, and waste treatment. This arose through the use of LCAs, which consider emissions to air, soil and water, and look beyond narrow climate impacts. Parameters include damage to health, disability affected life years (DALYs), impact on resource availability and ecosystem quality.
- › It is important to consider the impact of the physical constituent of data centres, and not just their operational energy consumption.
- › Dr Robert Tozer left HP and set up Operational Intelligence with several colleagues, with the aim of making data centres more sustainable. So far they have organised a number of knowledge exchange forums, and Dr Andrews has participated in two.
- › Dr Whitehead completed her PhD and is now working full-time for Operational Intelligence.
- › Dr Whitehead’s research is driving a more comprehensive assessment of data centres’ environmental assessment, including use of water.
- › The research yielded a bespoke LCA tool for measuring the potential impact of data centres, available to clients at Operational Intelligence. This tool measures the operational energy and associated impacts, alongside the effects of the physical elements of data centres.

The moving topic of migration: out of Eritrea

Impacts:

- > Professor Kibreab has given evidence to immigration officials from the EU member states, including UK, Denmark, Sweden, Norway, Austria, Switzerland, Holland, Belgium and Germany. The findings of his research have also been made available to the rest of the EU member states through publication on the European Country of Origin Information (ECOI) website.
- > He has contributed to a report on the Eritrean National Service for the Norwegian Country of Origin Information Centre – Landinfo, Swedish Migrationsverket, and Swiss State Secretariat for Migration, which are entrusted with providing information to policy-makers and adjudicators.
- > The UK Home Office is now required to change its guidance on Eritrean asylum-seekers due to the latest guidance issued by the UK Upper Tribunal in which Professor Kibreab was heavily involved as an expert witness. Eritrean asylum-seekers with legitimate claims can no longer be deported to Eritrea where they are likely to face risk of persecution.
- > Although the Danish Immigration Service and the government did not withdraw the report of the mission, the report is no longer used as a basis for determining Eritrean asylum cases.



Research makes governments take notice of the plight of Eritrea's 'modern slaves'

Following the 30-year war for independence against Ethiopia, hundreds of thousands of Eritreans fled their country in search of international protection. Many returned in 1991 when Eritrea was admitted into the world community of the United Nations, but then in 1998 a border war broke out with Ethiopia, prompting the government to extend the duration of the national service from 18 months to indefinite duration without remuneration. Further developments such as the introduction of the People's Militia in 2012 have seen Eritrea become the most militarised country in the world. As a result, hundreds of thousands of people living in Eritrea have fled the country to seek asylum worldwide, including to EU countries.

"Although far more Eritreans sought asylum in Sweden, Germany and Switzerland, it was Denmark, alarmed by the new waves of arrivals from Eritrea in summer 2014, that sent a mission to the country to allegedly document the conditions on the ground. The mission from the Danish Immigration Service visited London before they went to Eritrea and interviewed me twice," says Professor Gaim Kibreab, Course Director of Refugee Studies. "The mission visited Eritrea and produced a report that was subjected to scathing criticisms by Human Rights Watch, the United Nations High Commissioner for Refugees and Amnesty International, myself and many other human rights and civil society organisations. Two members of the Danish Immigration Service who were part of the three-person mission to Eritrea also resigned their positions on the grounds that the report was flawed."

In March 2015 the UK Home Office updated its country guidance for Eritrea, based on the Danish report, wrongly concluding that Eritreans were no longer at risk of persecution if they returned home, even when they left illegally. With UK decisions concerning asylum determined on the basis of such guidance, this new Home Office guidance was also subjected to criticism by various human rights organisations and Professor Kibreab.

As a result, in a landmark judgement, the Upper Tribunal relying on diverse sources, in which Professor Kibreab was also a key expert witness, issued a new country guidance

on Eritrea, based on the findings that Eritreans aged, or approaching, the draft age of 18, who have evaded national service, deserted or were likely to be suspected of doing so, faced a "real risk of persecution or serious harm" if returned to Eritrea. This will positively affect thousands of Eritreans in the UK.

"This was obviously a very pleasing outcome, as I worked with immigration lawyers representing Eritrean asylum seekers, and civil society organisations, lobbying on their behalf to influence government policy and practice, as well as immigration authorities. My initial research on the topic grew to encompass significant engagement with national officials and policy-makers," adds Professor Kibreab.

"There have certainly been challenges to overcome, as gaining permission for foreigners to carry out social-scientific research projects in Eritrea is next to impossible. Nevertheless, I succeeded in carrying out field research and published journal articles widely referred to by policy-makers and scholars. Also, my book, *The Eritrean National Service: Servitude for 'the common Good' and the Youth Exodus*, for which I interviewed hundreds of former conscripts who fled the country after serving in the national service against their will, will be published in June 2017.

"I hope that my work will continue to raise awareness and guide government thinking because there is no doubt that, over time, the Eritrean national service has degenerated into forced labour or, quite frankly, a modern form of slavery."

"I hope that my work will continue to raise awareness and guide government thinking because there is no doubt that, over time, the Eritrean national service has degenerated into forced labour or, quite frankly, a modern form of slavery."

Exiting prostitution

The wide-ranging debate about the harms of prostitution show that it generally involves women selling sex to men and that those involved frequently experience violence, coercion and control. Nearly 95 percent of those involved in prostitution report wanting to leave but feel they have no other option for survival. Among those who do leave, trauma rates are very high.

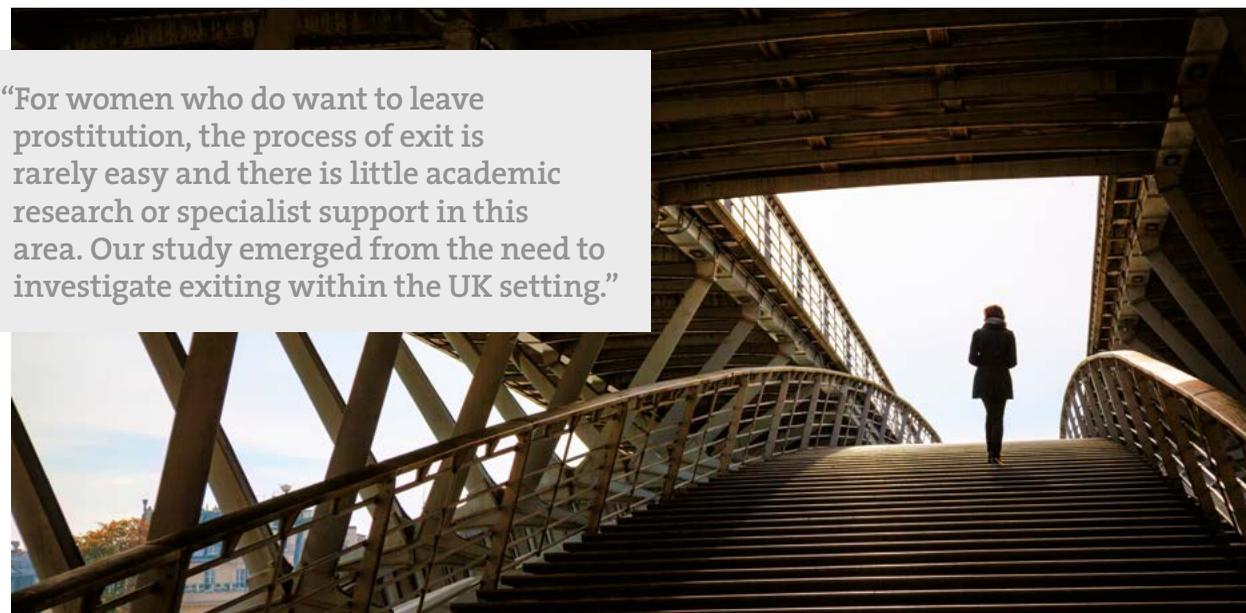
Using these shocking findings as a starting point, Senior Lecturer in Criminology, Helen Easton, has been working on a study to investigate exiting prostitution in the UK.

“It is generally agreed that the best approach to the regulation of prostitution is to decriminalise those selling sex in order to avoid their criminalisation and further marginalisation. However, there is disagreement about the need to control the demand for prostitution,” says Helen. “Countries such as Sweden, Norway and Iceland have adopted a model of regulation that decriminalises those selling sex while criminalising those who buy it, central to which is the idea that commercial sexual transactions are unacceptable in a modern society that values gender equality.”

This approach has become known as the Nordic Model, and interest in it is spreading internationally. Campaigns in England, Scotland and Ireland are calling for the adoption of a similar approach.

“A key tenet of the approach is supporting women to exit prostitution, but little is known about this process of change, and how best to support women to leave,” adds Helen. “For women who do want to leave, the process of exit is rarely easy and there is little academic research or specialist support in this area. Our study emerged from the need to investigate exiting within the UK setting. Areas such as Glasgow and Ipswich have been grappling with the task of devising a solution to the societal challenges posed by prostitution, with a focus on helping those who sell sex to exit prostitution and transition into other roles. However, there has been little evaluation of exiting work and little academic investigation into the process of exiting as a form of gendered desistance. This project was designed with this in mind.”

“For women who do want to leave prostitution, the process of exit is rarely easy and there is little academic research or specialist support in this area. Our study emerged from the need to investigate exiting within the UK setting.”



How the Nordic Model could help those most in need



Working with Eaves Housing for Women, a charity that has undertaken work on human trafficking and women experiencing violence, and a number of services providing exiting support across the country, interviews were conducted with more than 100 women, with a further 50 repeat interviews with women to look at their post-change pathways.

“As the UK doesn’t have the social support being provided by Nordic countries, I have been working with Glasgow on how to develop good practice. Our research is producing evidence that supports the Nordic Model, where the buyer rather than the seller is prosecuted and women are supported to leave,” says Helen.

“With this in mind, going forward we plan to continue to inform the work of the Home Affairs Select Committee, which had planned to recommend the decriminalisation of those selling sex but not the prosecution of buyers. I am also a member of the campaign group CAST (Coalition Against The Sex Trade) and have set up a charity called Stand Against Sexual Exploitation, which is pushing to share good practice with practitioners and campaign for the adoption of the Nordic Model of prostitution regulation in the UK.”



Impacts:

- Helen Easton has been called to give evidence on women’s involvement in prostitution and exiting prostitution to the All Party Parliamentary Group (APPG) on Prostitution and the Global Sex Trade. She is cited in the 2014 report produced by the APPG on Prostitution: *Shifting the Burden*.
- Helen has provided written evidence in support of Lord Morrow’s Bill to criminalise the purchase of sex in Northern Ireland, which was adopted on 1 June 2015. Lord Morrow read the book *Exiting Prostitution* and Helen supported him by providing an academic critique of online research conducted on prostitution in Northern Ireland.
- In light of the recent Home Affairs Committee interim report on prostitution, which recommended the commissioning of an “in-depth research study to help develop a better understanding of the current extent and nature of prostitution in England and Wales”, Helen has been invited to help the Home Office develop their research in this area. Helen will provide guidance about the feasibility of researching prostitution and which methods are likely to yield the best results.
- Helen signed MEP Mary Honeyball’s recommendation made to the European Parliament in 2014 about prostitution regulation.
- Helen is part of an international group of academics and researchers called Nordic Model International.

Pardon Miss?

World-leading work on the acoustics of classrooms makes government listen



An LSBU Research Office lunch in 1998 sparked a conversation between acoustics specialist Professor Bridget Shield and psychology professor Julie Dockrell. A few days later a Department of Health (DoH) call for research proposals led to a joint bid to study the effects of noise on children in London primary schools.

Professors Shield and Dockrell were awarded a two-year research grant by the DoH. After Professor Dockrell moved to the Institute of Education (IoE) in 2001 they were awarded further funding by the EPSRC, including two large collaborative research grants, to look at the effects

of noise and acoustics of classroom design in primary and secondary schools around the country.

“A key driver of our work has been concern that poor classroom acoustics impede pupils’ ability to learn, affect their academic performance, cause annoyance to pupils and teachers and affect teachers’ health. The research has provided us with results that have been used to guide the development and revision of regulations concerning the acoustic design of schools,” says Professor Shield, Emerita Professor in the School of Built Environment and Architecture.

The continuing collaboration between LSBU and the Institute of Education established the research team as world leaders in the acoustics of classroom design. In 2009 they invited Professor Trevor Cox of the University of Salford to join the team in a three-way project on secondary schools, funded by the EPSRC. They also supervised a highly successful PhD project on open-plan classroom design.

“Key to the success of our research on this theme has been the engagement of multiple stakeholders,” adds Professor Shield. “For example, in 2000 the Department for Education and Skills decided that schools should come under the same building regulations as dwellings and so I was approached to edit *Building Bulletin 93 – Acoustic Design of Schools (BB93)*, which contained the required acoustic specifications and guidance on how to achieve them.

“The core of our research has entailed coupling the disciplines of psychology and acoustics. External and internal noise measurements were taken in schools, together with acoustic surveys of classrooms, whilst psychology-based studies were conducted of pupils’ and teachers’ perceptions of their acoustic environment, and of pupils’ performance in different tasks. Tests were conducted with pupils in different classroom conditions using artificially controlled noise, and internal and external noise levels in primary schools were compared with SATs results. Hence, the projects have included monitoring and evaluation, with noise measurements conducted at 142 London primary schools and in nearly 300 secondary school lessons.”

Results from the project on secondary schools are still being analysed and published but, following the findings on teachers’ voices, Professor Shield has liaised with organisations such as the Voice Care Network and the Nordic Voice Economic Group in publicising data on teachers’ voice problems and the influence of the acoustic design. Related to this she and long-term colleague Dr Stephen Dance, Reader in Acoustics at LSBU and another internationally recognised expert in acoustics research, are currently supervising a PhD project on the teacher’s voice.

Perhaps the biggest impact of the research has been in safeguarding *BB93*, which was at risk, in 2010, of being dropped as part of the government’s mission to reduce

the burden of regulation relating to school building. Professor Shield set up a lobbying group, involving stakeholders such as the Institute of Acoustics and the Association of Noise Consultants, which, together with the National Deaf Children’s Society, successfully secured the retention of building regulations for schools plus the endangered acoustics regulation in the School Premises Regulations, which cover school infrastructure. A central element of the success of this lobbying was the cost-benefit analysis that Professor Shield conducted on classroom acoustics. Meeting several politicians, she provided information from the research showing the impact of poor acoustics on pupils.

Impacts:

- The research has revealed that children’s academic performance declines with increased noise in classrooms in both primary and secondary schools. The sharpest decline in performance is seen in children with additional learning needs.
- Professor Shield has played a pivotal role in the development and the recent revision of *Building Bulletin 93 – Acoustic Design of Schools*. The revised form of *BB93* is more stringent: it applies to both new-build and existing schools, and includes recommendations relating to open-plan classrooms developed during the PhD project by Dr Emma Greenland, supervised by Professor Shield.
- Teachers are at risk of voice damage due to high noise levels in classrooms.
- Professor Shield received two awards in 2011 for her work: the Institute of Acoustics RWB Stephens medal, awarded for outstanding achievement in teaching and/or research; plus a Noise Abatement Society lifetime achievement award.
- In 2014 Professor Shield was elected as a Fellow of the Acoustical Society of America in recognition of her classroom acoustics work.

The coming year

I hope you've enjoyed reading these case studies as much as I have. The breadth of research being conducted across the University is breath-taking and it's pleasing to see that so much of our research is having a tangible, positive impact on people and society.

One of the aims of the Research, Enterprise & Innovation department is to support this incredible work. To help us do this even more effectively, we have created the Annual University Research Audit (AURA). AURA is an online system that enables us to: identify our research-active staff; count the number and quality of publications our researchers have both produced and are planning; and gauge our academics' engagement with the wider economy.

The results of AURA are helping us to shape the University's emerging Research Centres and Research Groups, allowing us to strategically invest to support and expand our excellent work in addressing the major, global challenges faced by society.



Gurpreet Jagpal
Director Research,
Enterprise and
Innovation

London South Bank University
Research, Enterprise & Innovation
6 St George's Circus
London SE1 6FE

T 020 7815 6923
E reibusiness@lsbu.ac.uk

<http://www.lsbu.ac.uk>

