

# RESEARCH FORUM

The magazine for Oxford Brookes research | Spring 2017

## Witchcraft and magical beliefs

Exploring 19th and early  
20th century regional fiction



**PLUS** Tackling anorexia in ageing | Car emissions testing



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*Research Forum*, the research magazine of Oxford Brookes University, is published twice a year.

Contributions are welcome from all sections of the University and should be sent to [researchforum@brookes.ac.uk](mailto:researchforum@brookes.ac.uk)

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“In this edition we continue profiling recipients of our Research Excellence Awards 2016, launched last year they are part of our commitment to supporting research-active academics.”

## Hello & welcome...

...to the Spring 2017 edition of *Research Forum*, the magazine showcasing research excellence at Oxford Brookes University.

In this edition we continue profiling recipients of our Research Excellence Awards 2016, launched last year they are part of our commitment to supporting research-active academics. We take a look at another four recipients, and find out how the funding will enhance their research work.

The recipients of the Research Excellence Awards 2017 have just been announced, with 32 from across the University. Look out for more information about these in the Autumn edition of *Research Forum*.

Our lead story is on a new book which will explore witchcraft and magical beliefs in 19th and early 20th century Britain and how these were represented in regional fiction.

We find out about research into the testing of car emissions and what has happened since the Vauxhall emissions scandal in 2015. There is also a project to tackle the issue of anorexia in the elderly, as well as ongoing work assessing the impact of economic crisis on the volatility of banking shares.

On pages 8-9 you can read more about the new Oxford School of Nursing and Midwifery. Uniquely combining education, research and clinical practice it is a fantastic partnership between Oxford Brookes University, Oxford Health NHS Foundation Trust and Oxford University Hospitals NHS Foundation Trust, under the umbrella of the Oxford Academic Health Science Centre.

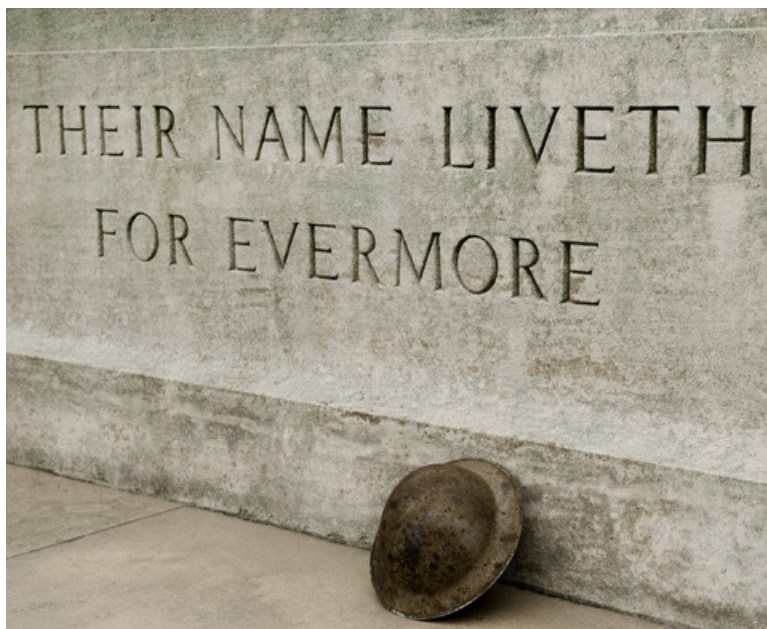
I hope that you enjoy reading this edition of *Research Forum*. As always we welcome your comments and suggestions, so please get in touch via [researchforum@brookes.ac.uk](mailto:researchforum@brookes.ac.uk)

**PROFESSOR LINDA KING**

*Pro Vice-Chancellor,*

*Research and Global Partnerships*

# RESEARCH NEWS



## How can we best commemorate war?

Academics at Oxford Brookes University and the University of Oxford will curate a new Mellon-Sawyer seminar series to bring together leading figures in the arts and politics to discuss how best we can commemorate war.

The series will be called Post-War: Commemoration, Reconstruction, Reconciliation and is led by Dr Niall Munro, Senior Lecturer in American Literature at Oxford Brookes and Professor Kate McLoughlin, Professor of English Literature at the University of Oxford.

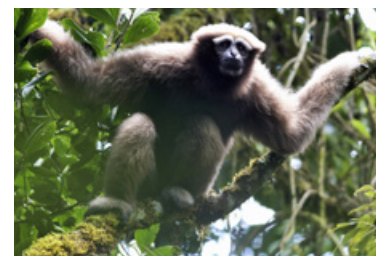
Over 2017/18, seminars and public events will feature academics from many different fields, politicians, diplomats and others who have played a role in peace negotiations and commemoration events. They will be joined by novelists, poets, artists and musicians whose work has marked war. For more details, visit [www.torch.ox.ac.uk/themes/post-war-commemoration-reconstruction-reconciliation](http://www.torch.ox.ac.uk/themes/post-war-commemoration-reconstruction-reconciliation)

## 60% of primates are threatened with extinction

An article co-authored by 31 internationally recognised experts on primate conservation, including Professors Anna Nekaris and Vincent Nijman from Oxford Brookes University, has called for urgent action to protect the world's dwindling primate populations.

The study, entitled *Impending extinction crisis of the world's primates: why primates matter*, is the most comprehensive review of the extinction crisis facing primates to date. It found that 60 per cent of the more than 500 currently recognised primate species worldwide are threatened with extinction and 75 per cent have declining population.

This is due to the escalating and unsustainable pressures humans are exerting on primates and their habitats.



## Tackling the hotel industry's role in human trafficking

A major project involving Oxford School of Hospitality Management, known as COMBAT, has revealed the extent to which Europe's hotel industry is vulnerable to trafficking in human beings.

It has displayed the shocking reality that a significant proportion of human trafficking occurs within hotels which, by their very nature, can

involuntarily facilitate movement and accommodation of perpetrators and their victims.

The project provides a practical toolkit designed for hotel businesses to help them prevent their premises being used by human traffickers. More information can be found at [www.brookes.ac.uk/microsites/ combat-human-trafficking](http://www.brookes.ac.uk/microsites/combat-human-trafficking)



This project has received funding from the European Union's Horizon 2020 research and innovation programme under the Marie Skłodowska-Curi grant agreement No 734770.

## Addressing stigmatisation in disadvantaged neighbourhoods

A four-year project which aims to address urban disadvantage and territorial stigmatisation has been launched by the School of Built Environment. The £500,000, EU-funded project will bring together researchers, policy makers, residents and artists to 'co-create' understanding about marginalised neighbourhoods.

The partner organisations include 3 NGOs in the EU: European Alternatives (Paris), City Mine(d) (Brussels), and Tesseræ (Berlin); and three universities: University of Bath (Bath), PUC-Rio University (Rio de Janeiro, Brazil) and the National Autonomous University of Mexico (UNAM, Mexico City).

## How acceptable is eating insects as part of a normal diet?

Academics in the Oxford Brookes Business School have embarked on a study to find out how acceptable it is to British consumers, to eat insects as part of a normal diet.

The study will increase academic understanding of consumer acceptance of entomophagy, or the practice of eating insects, in order to inform the market development and marketing of entomophagy to boost its acceptance by Western consumers

This stems from a wider agenda which is exploring the feasibility of insects for human consumption in response to developing a global, sustainable food source.

Associate Lecturer and PhD researcher Indroneel Chatterjee and Professor Janine Dermody will explore two primary emotions underlying acceptance of insect eating; novel food-related fear, or neophobia, and disgust.

## UK-Mexico collaboration tackles type 1 diabetes

Oxford Brookes' Pro Vice-Chancellor for Research and Global Partnerships, Professor Linda King visited Mexico to be part of the official launch of a UK-Mexico collaboration to tackle type 1 diabetes.

The TRANSDIA project aims to establish a clinical-grade human islet isolation facility as a precursor to delivering an islet transplant programme in Mexico to treat patients with type 1 diabetes. In addition, the project involves innovative pre-clinical research to evaluate the role of gene therapy in improving transplant outcomes, with the ultimate aim of enabling islet transplantation in children.





## UK could do more to support cycling among older population

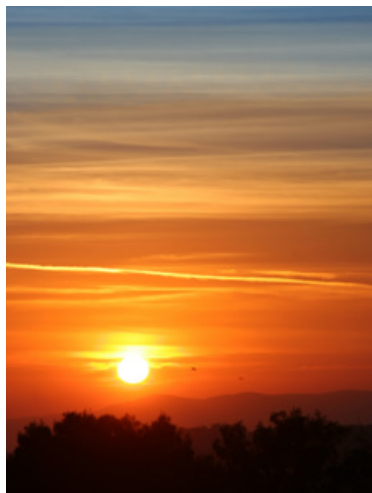
Cycling could play a significant role in promoting health and wellbeing among the older population but the UK is lagging behind other European countries.

This is one of the findings of a three-year cycling and wellbeing study which set out to investigate how older people in the UK experience cycling and how this affects independence, health and wellbeing. Results from the trial showed that cycling has the potential to improve physical and mental health in the older population, however, participants reported a number of factors including poor and unsupportive infrastructure and fear of injury from other traffic, had a negative impact on their experience.



## Mainstreaming social housing in India

The Low Carbon Building Group has launched an international research project on Mainstreaming sustainable social housing in India (MaS-SHIP), funded by the United Nations Environment Programme. The two-year project, worth \$181k USD seeks to promote sustainability in terms of environmental performance, affordability and social inclusion as an integrated part of social housing in India. The project builds on previous research led by Professor Rajat Gupta on greening social housing internationally for UN-Habitat. More information about the MaS-SHIP project can be found at [www.mainstreamingsustainablehousing.org](http://www.mainstreamingsustainablehousing.org)



## Fossil sunshine: Understanding the Sun and predicting future climate change

An international team of scientists led by Dr Wesley Fraser, Senior Lecturer in Physical Geography at Oxford Brookes, has reconstructed the longest ever record of past sunshine using fossil pollen grains collected from lake sediments in Ghana, Africa.

The study enables scientists to understand past changes in solar input to the global system over the past 140,000 years, where previously they have had to rely on computer models to mathematically determine past solar inputs to the Earth. Understanding more about how the Sun has behaved in the past, and the influence this had on Earth's environment, will help scientists predict future climate change.

## Can PE lessons help children do better at school?

Neuroscience evidence suggests that physical exercise can influence brain function. Researchers from Oxford Brookes and the University of Oxford will investigate whether the changing nature of PE lessons will help children do better at school.

The 'Fit to Study' project team at Oxford Brookes University, in collaboration with Oxfordshire Sport and Physical Activity, has developed a programme of study for PE lessons that aims to optimise the benefit of PE for brain function, and they aim to rigorously test the impact of this programme on fitness, wellbeing, cognitive function and academic attainment in Year 8 pupils, using a randomised controlled study in 100 secondary schools.



## Could sober raving change young attitudes towards alcohol?

Throughout 2017, Dr Emma Davies, Lecturer in Psychology, is working with colleagues from five other institutions who are researching attitudes and perceptions of alcohol-free music events as a means of reducing alcohol consumption in young people.

The team will explore whether sober-raving events could be incorporated into university social calendars such as Freshers' Week and if they offer a credible alternative socialising experience.

Recently, there has been an emerging interest in alcohol-free music and dancing events within the UK. While all the elements of traditional clubbing are present (other than alcohol and other drugs), events often include yoga, smoothies, coffee and glitter face painting.

## Scientist visits politicians in Westminster

Leading academic in Artificial Intelligence Professor Nigel Crook spent a week in Westminster as part of a unique pairing scheme run by the Royal Society – the UK's national academy of science. The visit provided Nigel with a behind-the-scenes insight into how policy is formed and how his research can be used to make evidence-based decisions, in particular, how research into the development of new robotic technologies might feature more strongly in government policy, and how policy can strengthen the UK's industry base in this area.

## UK boards overlook academic talent

UK boards lag behind their US counterparts when it comes to professional and sector diversity, according to new research undertaken by the University's Centre for Diversity Policy Research and Practice.

Commissioned by the 30% Club and sponsored by KPMG, Changing Places: Women on Boards is the first major UK study into the exchange of board-level talent between business and academia.

It found that movement between these two sectors is far more frequent in the US, as academic Non-Executive Directors interact much more with businesses, government and other organisations outside academia than their UK peers.

In fact, US company boards are over seven times as likely to include a senior academic compared to boards in the UK, showing that British business is overlooking talent in higher education.

# The Oxford School of Nursing and Midwifery

*Integrating education, research and clinical practice*

In March this year the Oxford School of Nursing and Midwifery was launched, through a unique partnership between Oxford Brookes University, Oxford University Hospitals NHS Foundation Trust (OUHFT) and Oxford Health NHS Foundation Trust (OHFT) under the umbrella of the Oxford Academic Health Science Centre (OAHSC).

It has been developed in response to a unique period of change in the professions of nursing and midwifery including the changes to funding and bursaries related to nursing and midwifery education.

Against this backdrop Oxford Brookes, along with healthcare partners in Oxfordshire responsible for educating and employing nurses and midwives, wanted to maximise the opportunity to increase collaborative working and change the model of nursing education and research in Oxford.

The purpose of the School is to create a joint University and Trust environment that builds a sense of belonging. It will be founded on the highest quality educational and research experience, creating excellent clinical practice experience, lifelong learning and career development, and establishing an environment of strong clinical research in these disciplines.

Similar partnership models have been successful in the USA, for example at the University of Pennsylvania and Johns Hopkins University, who are ranked globally as the top two nursing schools.

The School will be unique because it will combine education, research and clinical practice in a

way that has not been developed across these professions, under the umbrella of an AHSC, in the UK so far to date.

The School will be formally launched in June this year and it will open its doors on 1 August.

The Oxford Institute of Nursing, Midwifery and Allied Health Research (OxINMAHR) launched in 2016 and led by Oxford Brookes, will be the research arm of the School and will be further developed to explicitly include midwifery and support and expand the much needed research endeavour in all of these professions.

Professor Linda King, Pro Vice-Chancellor for Research and Global Partnerships at Oxford Brookes University, said: "We are very excited about this new School; and it was great to launch it earlier this year and set out our vision.

"For students and our staff we will be creating an environment that reflects a feeling of a personalised journey of learning, initially as students and then through career development for qualified staff.

"Together we aim to be the exemplar model for nursing and midwifery education, research and clinical practice within the UK because it will take all three of these aspects to attract and retain our nurses and midwives."

## What is the Oxford Academic Health Science Centre?

The OAHSC coordinates clinical and academic excellence within the University of Oxford, Oxford Brookes, Oxford Health NHS Foundation Trust and Oxford University Hospitals NHS Foundation Trust.

Launched in 2014, it combines the institutions' individual strengths in world-class basic science, translational research, training and clinical expertise to address 21st century healthcare challenges.

It is one of only six centres of excellence in the UK accredited by the Department of Health.

It works in partnership with the Oxford Academic Health Science Network (Oxford AHSN) which provides links into a wider regional health system.

Visit [www.oxfordahsc.org.uk](http://www.oxfordahsc.org.uk) for further information.

*Pic opposite, bottom, left-right Jane Hervé, Head of Midwifery at OUHFT; Ros Alstead OBE, Director of Nursing and Clinical Standards at OHFT; Catherine Stoddart, Chief Nurse and Deputy Chief Executive OUHFT; Dr Bruno Holthof, Chief Executive, OUHFT; Professor Alistair Fitt, Vice-Chancellor, Oxford Brookes University; Professor Linda King, Pro Vice-Chancellor for Research and Global Partnerships, Oxford Brookes and Stuart Bell, Chief Executive, OHFT*



## OxINMAHR: research, patient care and education

Professor Debra Jackson, Director of OxINMAHR said: "OxINMAHR researchers recognise the crucial role and potential of nurses, midwives and allied health professionals in providing sustainable, cost effective solutions to the complex health and wellbeing related challenges facing individuals, families and communities.

"We work alongside patients, carers and members of our communities to ensure our work reflects the concerns of our key stakeholders – the public. We have a commitment to diversity and actively seek input and involvement from all parts of our communities to ensure the voices of people from various cultural and social groups are included."

OxINMAHR is an Oxford Brookes led partnership between key stakeholders to lead and participate in world class research and evidence-based practice that will produce knowledge to enhance the health and wellbeing of the population of Oxford, the wider region and beyond.

Nested within the Oxford AHSC, OxINMAHR forms an essential component of the partners' vision of translating research to deliver evidence based care and innovation for patient benefit.

You can find out more about OxINMAHR and its research at

[www.oxinmahr.com](http://www.oxinmahr.com)

# Witchcraft and magical beliefs in 19<sup>th</sup> & early 20<sup>th</sup> century regional fiction

**Dr Simon White**, Reader in Romantic and 19th century literature, is one of the recipients of the University's Research Excellence Awards 2016/17. He is working on a new book exploring the mainstream magical beliefs and practices of British people during this era and how they were represented in fiction.

A considerable amount of work has been done on the representation of witchcraft and magic in early-modern England and Scotland; particularly on the infamous witch trials of the 16th and 17th centuries.

However, until recently little work has been done on witchcraft and magic after 1736, when the legislation making many magical practices capital offences in England and Scotland was repealed. Though the 1736 Witchcraft Act redefined magic as fraud, ordinary people continued to fear maleficium (harmful magic).

Since the year 2000, and led by the ground-breaking research of Professor Owen Davies at the University of Hertfordshire, historians have begun to explore this striking gap in our understanding of the mind-set of

ordinary people, and the social-dynamics of local communities throughout Britain during much of the last 300 years.

Only very recently have historians begun to study regional variations in magical beliefs and practices during the 19th and early 20th centuries. This new area of research is the starting point for my new book *Witchcraft and Magic in Regional Fiction, 1818-1926*, which will be informed by the growing body of work on regional variations and by new (historical) discoveries made during my own research.

Between 2010 and 2012 I led a British Academy project (with Professor Owen Davies as co-investigator) on witchcraft and magic in regional fiction. The grant funded a research assistant who searched local archives in Cornwall, Devon, Somerset, Essex, Shropshire, Lincolnshire

and Lancashire to identify a range of regional fictional texts in which magic and witchcraft are dominant themes. It is this work that inspired the ongoing research for my book.

In the book, I will consider the work of well-known authors, such as Emily Brontë, Thomas Hardy and Mary Webb, as well as highlighting the work of important, but neglected writers including William Harrison, Ainsworth, Arthur Morrison, Charlotte Yonge, William Bentinck Forfar, Sabine Baring-Gould, Edward Tylee, Walter Raymond and Sylvia Townsend Warner.

My book will begin by re-examining the representation of witchcraft and magic during the Romantic period, particularly the Ettrick Shepherd James Hogg's semi-autobiographical short stories about magical belief and practice in the Scottish Borders.

Next I will look at the representation of magical beliefs and practices in high Victorian regional fiction. This involved some complex narrative strategies, because the 'vulgar and ignorant' magical beliefs and practices of our ancestors were not seen as appropriate subject matter for serious literature.

As we move through the 19th century, varieties of magical belief and practice became bound-up in debates about the value of a plural as opposed to an amalgamated, hierarchical national culture.

The third and most important section of the book will consider the function of magical beliefs and practices, and the importance of the new disciplines of Folklore and anthropology, in the construction of distinctive regional and local identities in west-country fiction during this era.

The final section will focus on the representation of socially- and locally-embedded magical beliefs and practices as a critique of homogenised rural modernity in early 20th century fiction.

*Witchcraft and Magic in Regional Fiction* will fill a significant gap in our knowledge of the fiction of the late-Romantic, Victorian and early 20th century periods. Work has been done on the representation of the supernatural in Victorian fiction-ghosts, fairies, mesmerism (viewed by some as the 'new witchcraft') and spiritualism more generally. But my book will be the first major study of how the magical beliefs and practices of most British people during this period were represented in regional fiction.

Generating interest in this subject outside of academia is also something I'm keen to do.

So in tandem with my book, I have developed an innovative Historypin Special Collection called Mapping Magic.

Mapping Magic allows anyone to go online and 'pin' a snippet of text, a historical photo, video, audio recording or personal recollection to an interactive map covering the whole of Great Britain. Communities can share local history through this forum; they can enjoy it, learn from it, discuss it and contribute to the development of a complete collection of stories about magical belief and practice from the Middle Ages right up to the present day.

Visit [www.historypin.org/en/mapping-magic](http://www.historypin.org/en/mapping-magic)



# How can faith in the testing of car emissions be restored?

**Dr Fabrizio Bonatesta**, Senior Lecturer in Thermofluids, is one of the recipients of the University's 2016/17 Research Excellence Awards. Dr Bonatesta explains how his research is playing an important role in understanding car emissions – an area which has become increasingly controversial in recent years.



Volkswagen found itself at the centre of an emissions scandal in 2015 leading to serious repercussions for the car making industry.

'Emissionsgate' or 'dieseltgate', as the press and social media often referred to the controversy, has an impact on a truly global scale.

The fallout has led to a series of prominent resignations by leading industry figures, dramatic plunges in the values of stock and many billions of pounds being committed to rectifying emissions issues and the ongoing task of recalling and retrofitting millions of cars. This is to say nothing about the huge pay-outs which have been set aside for compensation and in preparation for the ongoing filing of lawsuits.

Much of the press' focus was on the discrepancies between results in test environments and how cars actually perform in real-world settings. Importantly, the extensive media coverage gave the general public a glimpse into the significant issues around compliance of passenger diesel vehicles with nitrogen oxide and Particulate Matter (PM) emission regulations.

Modern, fuel efficient Gasoline Direct Injection (GDI) engines have been shown to actually emit more particulate than diesel engines. Worryingly, GDI engines emit

particulate matter mostly in the ultra-fine size range, where current tail-pipe gas filters show low filtration efficiency. This has serious environmental consequences and health implications for conditions such as heart diseases, cancer and pulmonary inflammation.

The realisation of the extent of the issue of PM emissions from modern GDI engines is relatively new and car manufacturers around the world are still researching suitable solutions. The gradual introduction of stringent Real Driving Emissions tests for regulation compliance from 2017 to 2022 affords very little time for development of new technology.

Over the past few years I, along with members of my research team at Oxford Brookes, have acquired significant expertise in the field of PM formation and 3D Computational Fluid Dynamics (CFD) modelling of GDI engines. Our ultimate goal is to accurately model the engine processes to help find effective approaches to reduce soot formed "at source", enabling lower ultra-fine PM yield and lesser reliance on Gasoline Particulate Filters.

This is an innovative area of investigation, regarded as necessary and instrumental in the identification of improved engine control strategies. The

significance and potential impact of this work at Oxford Brookes has been recognised by Ford Motor Company which is now supporting the CFD modelling work.

The Research Excellence Award funding is extremely timely for my team and I in being able to run a comprehensive engine testing campaign with newly acquired equipment in support of the modelling activities. It provides important support in carrying out experimental work and data analysis including development of:

- novel understanding regarding engine control approaches which minimise soot emissions
- chemical kinetics models for modern GDI engines in collaboration with Nottingham University Malaysia Campus (NUMC).

The engine research group at NUMC, where I have recently been appointed a Visiting Research Fellow, has a strong international reputation in the field of chemical kinetic modelling of fuels and CFD.

Collaborative project work to date has already led to grant success and a large, high-quality review article. Through the support of the Research Excellence Award, I am keen to strengthen this beneficial international partnership and the potential for publishing in further world-class research papers.

This pioneering work ties in with plans to establish an internationally recognised engine pollutant emissions research centre at Oxford Brookes. A growing, specialised expertise in the field of particulate matter formation in gasoline engines has already attracted the interest of major stakeholders resulting in strategic national and international collaborations within both academia and industry.

The introduction of stringent new compliance tests over the coming years will see emission controls continue to dominate the automotive industry and research at Oxford Brookes will be at its heart.

# Anorexia & the elderly

## Exploring appetite from another angle



**Dr Miriam Clegg**, Senior Lecturer in Nutrition at Oxford Brookes, is a recipient of the Research Excellence Awards 2016/17. The award is giving her greater research time to investigate the relationship between appetite, physical activity and ageing, with the aim of both understanding and tackling malnutrition in the elderly.





“My Research Excellence Award is providing me with the opportunity to explore appetite from another angle and ask a question that many wouldn’t expect us to ask given the current obesity issues: ‘How can we increase people’s appetite and make them want to eat more?’”

Insufficient food intake is one of the main reasons for malnutrition in older adults. In the UK, the National Diet and Nutrition Survey (2016) has shown that free-living men and women aged 75-84 years were consuming just 88 per cent and 77 per cent of estimated requirements for energy. This reduction in food intake is due to anorexia of ageing.

Despite the increase in body fat and obesity that can occur with ageing, there is a linear decrease in food intake over the life span. This conundrum is partially explained by decreased physical activity and altered metabolism with ageing. Thus, older people fail to adequately regulate their food intake.

Anorexia of ageing is a term used to describe a decrease in appetite that occurs in the elderly. The implications for it

are far reaching and can include decreases in fundamental activities such as dressing and eating as well as cognitive impairment, morbidity and eventual mortality.

To date my research has focused on appetite. Given the UK’s current issues with obesity and being overweight, this generally means researching ways we can stay fuller for longer. This can be achieved by altering the types of foods that we eat, or when and how we eat them.

My Research Excellence Award is providing me with the opportunity to explore appetite from another angle and ask a question that many wouldn’t expect us to ask given the current obesity issues: ‘How can we increase people’s appetite and make them want to eat more?’

It has been proposed that habitual physical activity improves appetite control. In adults of less

than 65 years of age, research has shown that those that were active were better at controlling the correct amount of food to consume. They were also able to adjust their food intake depending on the energy density of foods that were provided to them. This effect was improved further with increasing levels of physical activity.

One of the reasons for anorexia of ageing is delayed emptying of food from the stomach. This means that in the elderly food empties from the stomach at a slower rate. If emptying is delayed and food remains in the stomach, the individual continues to feel full as the stomach remains distended for longer. In younger individuals, gastric emptying has been shown to be accelerated in those that exercise regularly, which may mean that they will not stay full for as long.

The plan for my research is to complete a systematic review of any available studies looking at the relationship between appetite, physical activity and ageing. My initial findings so far are as I expected, in that the current research available on this is limited. However I will look forward to assessing the full findings of the review.

Next I will undertake a feasibility study aimed at examining the effect of an exercise intervention on appetite and food intake in the elderly. The project will examine gastric emptying, self-reported feelings of appetite and fatigue, food intake and physical activity. This will provide feasibility data for a longer duration intervention study.

The project will form part of collaboration with the University of Newcastle and provide valuable, hands-on research experience

for our students here at Oxford Brookes.

I expect the wider benefits of this research to help minimise the cost and burden to the healthcare system through simple and cost effective approaches to reduce malnutrition in the elderly. In turn this would also enable older adults to have an improved quality of life and greater engagement in society.

While this research is novel and at a preliminary stage, the findings from the research have the potential to inform policy and provide local information to patients and clinicians on the role of physical activity and appetite in the elderly.

Dr Miriam Clegg works in the Functional Food Centre in the Department of Health and Sport Sciences. Find out more at [www.shs.brookes.ac.uk/research/functional-food](http://www.shs.brookes.ac.uk/research/functional-food)

If you would like more information about Dr Clegg’s study or her research get in touch by emailing [mclegg@brookes.ac.uk](mailto:mclegg@brookes.ac.uk)

# Understanding the performance of banking stocks returns during recessions

**Dr Dimitrios Asteriou**, Programme Lead for Economics in the Department of Accounting, Finance and Economics, is conducting research on the impact that crises and recessions have on the volatility of stock markets, and in particular on banking shares. A recipient of a Research Excellence Award, Dr Asteriou talks about his work which is particularly topical given the economic turmoil which persists in many countries and the effects of the last recession which are still being felt.

Crisis and economic recessions come in many shapes and sizes, varying both in causes and degree of severity. They can be caused by economic shocks, a crisis in the financial sector, currency shocks or external factors such as terrorism or natural disasters.

My research examines whether bank stocks perform better or worse than the general stock index during periods of recessions and crises and by what percentage difference. If they do indeed perform worse, then there is a reason for bank protection schemes, such as bail-ins, but if not the protectionism banks face is not easily justifiable.

Recessions and crises, whether caused by economic, financial or external factors, quickly impact upon financial markets. I use this premise to study the impact of recessions and crises on the banking sector, which is particularly sensitive to various shocks from around the world, in a quantified manner. Through the use of banking stock returns, it is possible to estimate the overall performance of the banking sector in both individual countries and groups of countries following a recession or crisis. From this, I apply a recently developed empirical methodology called the Differences-in-Differences (DID) estimator on quarterly data from 18 OECD (Organisation for Economic Co-Operation and Development) countries from 1993

to 2015. The DID approach has been widely used and applied in microeconomics and other social sciences to estimate the effect of an “intervention” (for example, a shock) in a specific time period.

However, it is the first time that it has been applied in a macroeconomic framework, and therefore it is interesting to see the results of this novel analysis. The periods of crises are defined in four different ways:

- The first definition deals with the date of the recent financial crisis. I obtain information from the National Bureau of Economic Research (NBER) and use the financial crisis as an exogenous shock on stock prices. This represents the effect of the sub prime crisis and covers the worst of the financial crisis as far as banking stocks and the general stock indices were concerned.
- The second definition identifies as recession periods the dates in which the countries show negative GDP growth for at least two consecutive quarters.
- The third definition relies on information that represents periods of expansions and recessions obtained from the economic database of the Federal Reserve Bank of St. Louis.

- Finally, the fourth definition is based on information on recession and financial crisis periods obtained from the research of Reinhart and Rogoff (2011) which documents dates of banking and inflation crises, currency and stock market crashes and sovereign domestic or external defaults for 70 different countries.

Most of the results, so far, are consistent with the hypothesis that banking performance, measured as stock indices returns, underperform after a financial crisis and during recession periods.

As a next step, I will be considering the extension of these econometric approaches on the estimation of the effect that crises and recessions have on other financial sectors by using their sector price indices such as automobile, pharmaceutical, food and beverages.

We know that many banks are continuing to face serious problems. I hope that my research will be able to assist policy makers in estimating the impact that crises and recessions have on the volatility of banks and provide a valuable tool in relation to the stress testing scenarios of bank equity during these periods.





# CURIOSITY CARNIVAL

**OXFORD, 29 SEPTEMBER 2017**

**Can you turn an orange into a grapefruit?  
What is digital wildfire? Is love real?**

The Curiosity Carnival on Friday 29 September is the chance to find out.

Oxford's first European Researchers' Night – run by the University of Oxford in partnership with Oxford Brookes University and MRC Harwell – the Carnival will showcase a diversity of inspirational research for the public to enjoy, with games, experiments, busking, debates, music and a pub-style quiz.

It will be one of more than 300 European Commission-funded events taking place on the same night across Europe to celebrate research.

So get curious – visit [www.curiositycarnival.org](http://www.curiositycarnival.org)



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 722615

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