

OXFORD  
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UNIVERSITY

# RESEARCH FORUM

The magazine for Oxford Brookes research | Spring 2016



## *Being human*

Understanding human evolution  
and the origins of disease

**PLUS** Global research in Brazil | Easing multiple sclerosis symptoms



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

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“In this edition we lead with the fascinating research that is revolutionising how we think about human evolution and disease.”

# Hello and welcome...

...to the Spring 2016 edition of *Research Forum*, the magazine showcasing research excellence at Oxford Brookes University.

In this edition we lead with the fascinating research that is revolutionising how we think about human evolution and disease. By studying genetic data and ancient DNA we have been able to learn more about our links with Neanderthals and how exchange of disease, genes and even ideas have played a key role in shaping our evolution.

With the Rio 2016 Olympics taking place later this year, we look to Brazil and two research projects with a global reach; one comparing environmental policy development in the city of São Paulo with South Wales, and the other working with three Brazilian universities to develop new approaches to mobility planning to help address health inequalities within urban areas.

I also reveal more about my new role and the new direction the University is heading with its research, and finally we finish with something sweet. A quirky, new project investigating the benefits of dark chocolate in reducing the symptoms of multiple sclerosis.

I hope you enjoy reading this edition of *Research Forum* and 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



## England Rugby Union star becomes Ambassador for the CLEAR Trust

Oxford Brookes announced that international rugby player Mike Brown (Harlequins and England) has agreed to act as special Ambassador for the CLEAR Trust during the 2015/16 season and beyond.

Mike recently gave a generous donation to the CLEAR Unit after he raised the money by placing some of his old England training kit up for auction.

The CLEAR Trust raises funding for research education and care to support the work of Oxford Brookes' Clinical Exercise and Rehabilitation (CLEAR) Unit and to enable children and adults with brain / spinal injuries, learning difficulties and long-term neurological disabilities to participate in sports and exercise activities.

Mike developed an interest in brain and spinal injury after suffering concussion during the 6 Nations tournament in 2015. He has since made a complete recovery. He also has a personal interest in the work of CLEAR because his father is occasionally wheelchair dependent due to multiple sclerosis.

## Newton Funding for projects in developing countries

Four projects to be undertaken by researchers at Oxford Brookes in Brazil and Mexico have received funding from the Newton Fund.

The Newton Fund is part of the UK's aim to help with science and innovation partnerships that promote the economic development and welfare of targeted developing countries.

The four projects are; UK-Brazil Neglected Infectious Diseases Partnership (Dr Sue Vaughan), UK-Brazil Researcher Links scheme (Dr Dave Carter), UK-Mexico Royal Society Researcher Link scheme (Professor Robert Possee and Professor Linda King) and Brazil-UK Healthy Urban Mobility (Dr Tim Jones). You can read this last study in this issue of *Research Forum* on pages 10-11.



## EU funds energy efficient research

Researchers from The Low Carbon Building Group of the Oxford Institute for Sustainable Development have helped to secure a major research grant of nearly 960,000 EURO from the European Union's (EU) Horizon 2020 programme.

The project, titled HERON, aims to enable policy-makers of multi-level governance and market stakeholders in the EU to develop and implement effective energy efficiency policies in the building and

transport sectors by researching the impact of socio-economic factors on energy efficiency.

Eight academic and research organisations make up the project consortium which is coordinated by the University of Athens, Greece. The project will run until June 2017. Professor Rajat Gupta is the Principal Investigator from Oxford Brookes University.

For further details, please contact: rgupta@brookes.ac.uk

## Academic awarded funding to improve the lives of NHS patients

An Oxford Brookes academic has been awarded a Principal Fellowship by The National Institute for Health Research (NIHR) Oxford Biomedical Research Centre (BRC) and NIHR Oxford Biomedical Research Unit (BRU) in Musculoskeletal Disease.

Professor Debra Jackson, who is a professor of nursing in the Department of Nursing at Oxford Brookes and the Oxford University Hospitals and Director of the Oxford Institute of Nursing and Allied Health Research (OxINAHR), will receive £15,000 a year for three years to support research that will have a direct benefit on NHS care.

These competitive awards are aimed at attracting, recognising, developing and retaining outstanding researchers.



## Poetry helps to improve work-life balance

A study by Dr Louise Grisoni, Associate Dean Research and Knowledge Exchange in the Faculty of Business, has found that poetry can help ease stress and anxiety in employees.

Poetry workshops can help stressed employees 'voice' their anxieties over work-life balance because it clarifies the questions and dilemmas each of us have, bringing emotions such as fear, anger, and guilt to the surface and helps resolve issues around prioritising between work and home responsibilities.

Participants have included business managers, consultants and masters' students mainly working in the public sector in the UK and Europe. Through a facilitated process participants create collective poems to be shared and analysed within the group. The study has identified that people come away from the workshops feeling more in control of their lives and how they allocate their time between work, family and hobbies.

If you are interested in finding out more about this work please contact Dr Grisoni at lgrisoni@brookes.ac.uk

## Satisfaction on the rise for research students

The Postgraduate Research Experience Survey, carried out by the Higher Education Academy, found that 86 per cent of Oxford Brookes' postgraduate research students were satisfied with the quality of their research programme.

This represents an increase of seven percentage points since the last survey was carried out in 2013 and compares with a sector average of 82 per cent. With the University's Research and Knowledge Exchange Strategy setting out the basis for "an excellent research student experience", there were further encouraging results with 92 per cent of those surveyed feeling that their supervisors had the skills and knowledge to support their research. This represents a five percentage point increase from 2013.

The survey of 189 postgraduate research students found that nine out of ten understood their responsibilities as a research degree student (93 per cent).





## Primary science education study to 'go-large'

Oxford Brookes University and Science Oxford have got the go-ahead to carry out a large scale trial of its ground-breaking science learning programme.

Thinking, Doing, Talking Science (TDS), funded by the Education Endowment Foundation, aims to make science lessons in primary schools more practical, creative and challenging by training teachers in a number of strategies to encourage pupils to use higher order thinking skills.

An earlier study found overall, pupils showed an additional three months progress with their science knowledge through TDS, with less advantaged pupils benefitting from five additional months' progress.

From September 2016, it will be trialled with a further 180 schools. The findings published in 2018 could inform policy on the teaching of science in primary schools in the future.



## Japan's role in the illegal pet trade of the slow loris

Oxford Brookes researchers and the Japan Wildlife Conservation Society have published two major studies documenting Japan's role in the illegal pet trade of slow lorises.

The studies provide a strong scientific basis that the typical way in which the animals are kept as pets, violates international standards of animal welfare, constituting animal cruelty.

The first study found 114 slow lorises in 93 Japanese online videos and discovered 74 slow lorises for sale in 20 Japanese pet shops, both in-store and online, during a two month investigation. Analysis of the Convention on International Trade of Endangered Species of Wild Fauna and Flora (CITES) trade data revealed Japan to be most significant importer of slow lorises.

In the second study, 100 online videos were examined, a third of which were uploaded in Japan, to investigate whether or not the 'five freedoms' of animal welfare were violated in the videos. The researchers found that every video violated at least one freedom.



## Illegal pangolin trade may have been underestimated

Pangolins, also known as scaly anteaters, are little-known mammals that despite being legally protected are traded in large volumes to meet the demand for traditional Asian medicine.

Professor Vincent Nijman of Oxford Brookes University, who studied the illegal trafficking of pangolins in Indonesia, found that 45 previously largely unrecorded seizures took place in the last two and a half years. As many as 12,000 individual pangolins were confiscated, with most animals coming from the islands of Java and Sumatra bound for China.

Despite these seemingly large findings, it is thought that numbers may be even higher because many previous assessments of pangolin trade have relied on English-language reports in societies where English is not widely used.

Levels of the trade, or at least the volume of seizures may have therefore been underestimated by some conservationists in the past; justifying a reassessment of the levels of pangolin trade in other Asian societies in which English is not widely used.

## Innovative partnership will research how to make Nepali homes earthquake resistant

An innovative partnership between Oxford Brookes' Centre for Development and Emergency Practice (CENDEP) and the Architectural Engineering Research Group will research how to make self-rebuilt homes in Nepal more earthquake resistant by strengthening the earth mortar used in local constructions.

The partnership is working with Catholic Relief Services who will take the results and apply them in Nepal. It is hoped that the impact of this research will be significant on Nepali building regulations, where there is currently no guidance on strengthening earth mortar.



## Developing Braver Leaders

Dr Elaine Cox, lecturer in the Business School, and PhD student Mike McLaughlin have published a new book suggesting that leaders can develop the agency and direction they need in challenging times by using a leadership coach.

They highlight a distinct gap between where we are in terms of leadership capability, and where we need to be, both in relation to public expectation, and employee expectation.

*Leadership Coaching: Developing Braver Leaders* is published by Routledge, New York (2016).

## New research tackles diabetes

Oxford Brookes is leading a four million EURO collaborative research project which will help to improve the lifestyles of people with Type 1 diabetes.

Researchers working on the project, titled PEPPER (Patient Empowerment through Predictive Personalised decision support), will create a personalised decision support system that will make predictions based on real-time data in order to empower individuals to self-manage their condition.

The 36-month project will run until 31 January 2019 and has been funded by EU Horizon 2020 which brings together leading European universities and companies to research, develop and validate innovative technology for healthcare. Partner institutions include Imperial College London, University de Girona, Girona Biomedical Research Institute – Hospital Dr. Josep Trueta, Romsoft SRL and Cellnovo Ltd.

## Exploratory project studies views on waterbirth trials

Dr Ethel Burns has been awarded funding from the University's Central Research Fund (CRF) to explore the views of midwives, women using maternity services and maternity managers on the feasibility of undertaking a randomised controlled trial on waterbirth.

This research contributes to the work of the Oxford Brookes University Maternal and Women's Public Health (OxBUMP) group which undertakes research to understand factors that help people live longer in good health by reducing preventable disease and inform guidelines for best practice in labour and childbirth.

Another two waterbirth research studies are currently being undertaken by final year postgraduate, pre-registration midwifery students.



# Acting locally and thinking globally

**Professor Linda King**, Pro Vice Chancellor for Research and Global Partnerships at Oxford Brookes, talks about her new role and steering the University's research in a new direction.

In November last year I was honoured to be appointed as Pro Vice Chancellor for Research and Global Partnerships, an exciting new role for Oxford Brookes University.

Since March 2015, I had been the Interim Pro Vice Chancellor for Research and Knowledge Exchange; before that I was Associate Dean for Research and Knowledge Exchange for the Faculty of Health and Life Sciences for four years, and prior to that Dean of the School of Life Sciences for eight years.

It is really exciting to be leading on research and to take forward our plans for developing strategic academic and research partnerships. We have so much to be proud of here at Oxford Brookes.

This new role draws together two complementary agendas, building on our strong performance in 2014's Research Excellent Framework (REF) through further developing a world-class, focused and selective research portfolio and forging multi-dimensional, strategic international partnerships.

After working with colleagues across the University, we have now launched a newly revised Research and Knowledge Exchange Strategy for the period 2015-2020, which underpins the University's strategic goal of being "committed to international and world-leading research that is exploited and disseminated for the benefit of our communities".

The three strategic objectives are all closely linked to the development of the University's international outlook. These include increasing our world-leading research, further collaboration - which includes global partnerships - and ensuring our research has even greater impact with our communities whether local, national or international. Our strategy also highlights our commitment to further supporting and developing both staff and students over the coming years.

The full version of the Research and Knowledge Exchange Strategy is available to read on our website at [www.brookes.ac.uk/research/](http://www.brookes.ac.uk/research/)

Opposite you can read the key highlights of the new strategy.

## RESEARCH AND KNOWLEDGE EXCHANGE STRATEGY 2016-2020

We have strong foundations for our updated strategy which follows a strong performance in the REF 2014. It found that:

# 94%

of our submitted research was internationally-recognised or better (up from 78% in 2008)

# 59%

per cent was judged to be of 'world leading' quality or 'internationally excellent' (up from 36% in 2008)

# 41%

increase in quality-related research funding, compared to a sector average increase of 3%

## Our 3 strategic objectives:



1) To **pursue and support research of the highest quality** that is, or has the potential to become, recognised as **internationally excellent or world-leading**

We recognise that our staff are central to our success and we will continue to introduce and invest in programmes to support colleagues at all stages of their career.

We will continue to invest in research infrastructure and support colleagues in funding applications.

We recognise that research students are vital to our research ambitions and will invest in the delivery of high-quality doctoral training programmes.



2) To promote and support **collaborations and partnerships across the institution** and with **external partners locally, nationally and globally**

We recognise that many of the world's challenges and priorities will require us to respond more effectively through multidisciplinary and interdisciplinary initiatives.

We will continue to support and develop our successful University Research Centres.

We will pursue opportunities for research and knowledge exchange with industrial, commercial, public sector partnerships.



3) To **enhance the impact of our research** in its broadest terms, and **widen dissemination** of our research for the **benefit of our communities**, whether local, regional, national or global, including our staff and students

We are committed to creating an inclusive and supportive research environment which also enhances the student experience.

We will focus our research to help improve the lives of people both worldwide and within our local community.

We will engage with our communities on the outputs and impacts of our research.





# How do we create the Healthy Cities of the future?

**Dr Tim Jones, Senior Research Fellow for Oxford Brookes' School of the Built Environment, is currently undertaking a research project funded by the Newton Fund. In collaboration with three universities in Brazil, Tim explains how the research will attempt to "develop new approaches to mobility planning that seek to address health inequalities within urban areas."**

Since the initiation of the World Health Organization's Healthy Cities movement over 30 years ago there have been increased efforts to understand how the urban environment affects health outcomes and can produce more equitable health benefits.

A key concern is the way in which the physical fabric of cities affects urban mobility and how this relates to health and wellbeing.

Built environmental design supportive of walking and cycling ('active mobility') could help to promote moderate physical activity as part of daily travel routines, delay biological ageing and age-related conditions and improve overall health and wellbeing.

In the developing countries of the Global South however, the rapid growth in private motorisation and the lack of value placed on walking and cycling means the association between environmental

attributes and active mobility are more complex. This is having a significant impact on the urban poor and low-income groups who already engage in, and rely on, walking and cycling (and public transport) to meet their daily travel needs.

The trend in the developed countries of the Global North meanwhile, and particularly in countries like the UK, is towards a decrease in physical activity and this is associated with more widespread private car use, environments which can lead to increased obesity and greater mechanisation in the home, workplace and public places. The implementation of healthy urban mobility as part of the broader Healthy Cities concept, therefore, presents serious challenges in both the Global South and Global North and requires different approaches towards its realisation.

The focus of the BRAZIL-UK Healthy Urban Mobility (HUM) research is on understanding the impact of personal (im)mobility on both individual and community health and wellbeing of different neighbourhoods in Brazil and in the UK. It also focuses on developing a participatory approach to support and develop healthy urban mobility and to address health inequalities and injustice.

The investigation will use a mixed method approach comprising five specific field research components. These are:

- 1) **spatial mapping to understand the physical and built environment context in which mobility takes place**
- 2) **a social survey to capture mobility and health and wellbeing profiles of selected communities**

- 3) **in-depth biographic interviews to understand role of past experiences of mobility and the rationale behind selected modes of mobility - 'mobile trajectories'**
- 4) **micro-ethnographies through mobile interviews to capture contemporary everyday experience of being (im)mobile**
- 5) **a participatory approach to involve the local community in identifying problems and solutions for healthy urban mobility and community wellbeing.**

The work will focus on three Brazilian cities and one UK city: Brasilia (Federal State), Florianopolis (State of Santa Catarina), Porto Alegre (State of Rio Grande do Sul) and Oxford.

## About the project:

The project (research grant ref: ES/N01314X/1) involves a collaboration between Oxford Brookes and three universities in Brazil (University of Santa Catarina; University of Rio Grande do Sul; University of Brasilia).

Find out more about the School of the Built Environment  
<http://be.brookes.ac.uk>

For information on the Oxford Institute for Sustainable Development visit  
<http://oisd.brookes.ac.uk>



# Being human

Oxford Brookes research into ancient DNA is revolutionising how we think about human evolution and disease. **Dr Simon Underdown**, Senior Lecturer in Biological Anthropology, reveals all.

The story of human evolution is a short and often brutal one. Our split with chimpanzees, the last common ancestor we shared, occurred only seven million years ago; the first emerging human like behaviours and body forms didn't appear until two million years ago and the first member of our own species can be dated to a mere 200,000 years ago.

If we assume an average human generation span as 30 years then just over 6,666 generations separate humans living today from the earliest members of our species. If one person from each generation held hands they would barely cover seven miles: the distance from Hyde Park to the Millennium Dome in London or from the northern corner of Central Park to the World Trade Centre memorial in New York.

As a species we like to think of ourselves as pretty special. After all, you're reading these words which have no physical mass, don't really exist, and yet you can understand what I am writing.

As a product of the evolutionary process that is pretty much unique. It's an example of how humans use cultural adaptations, in this

case symbolism, to cope with the challenges posed by the world around us.

Traditionally human evolution has focussed on what makes us (*Homo sapiens*) unique. It was generally accepted that we evolved 200,000 years ago in Africa in isolation from other hominin species before leaving Africa around 100,000 years and replacing the Neanderthals in Europe with no interbreeding.

Then along came the geneticists who changed how we think about who we are and how we interacted with other species. In combination with archaeological and fossil data we can now build a much more sophisticated model of our evolutionary journey. Far from being the only 'human' species it's now clear that the Neanderthals, traditionally thought of as stupid and brutal, were in fact our equal in terms of language, symbolic thought and ultimately were just as 'human' as us. We now know that not only did we interbreed with the Neanderthals multiple times in Asia and Europe but that all non-African humans have up to four per cent Neanderthal DNA.



With my colleague, Dr Charlotte Houldcroft of Univerity College London, we are exploring how genetic data can answer questions about how we have co-evolved with diseases over hundreds of thousands of years and how this still impacts on our lives today.

We have been using ancient DNA from high quality Altai Neanderthal and Denisovan genomes to explore which regions of archaic hominin DNA have persisted in the modern human genome. A number of these regions are associated with response to infection and immunity, with a suggestion that derived Neanderthal gene variations found in modern Europeans and East Asians may be associated with autoimmunity – in other words how we can respond to infections. We analysed the evidence for infectious disease in Neanderthals, beginning with infection-related skeletal disorders in the archaeological record, and then considered the role of infection in hominin evolution. We also analysed the chronology of emergence of diseases, such as TB and Hepatitis, and produced epidemiological models of diseases transfer.

Next we used emerging data from studies of ancient Neanderthal geomes (palaeogenomics), and combined this with fossil and archaeological information to re-examine the impact of infectious diseases on human populations from an evolutionary context.

Through this research we were able to show that the origin of resistance to infectious disease



has a much deeper timeframe and is partly the result of ingression of Neanderthal DNA into modern human lineages – in other words interbreeding. The transfer of pathogens between human species may also have played a role in the extinction of the Neanderthals.

This research was presented in 2015 at the Royal Society and a paper is currently in press. A pre-print draft, entitled *Neanderthal Genomics Suggests a Pleistocene Time Frame for the First Epidemiologic Transition*, can be found online at bioRxiv <http://goo.gl/86Ybbk>.

Currently, our research is expanding the application of these techniques by exploring the relationship between disease and DNA in human evolution.

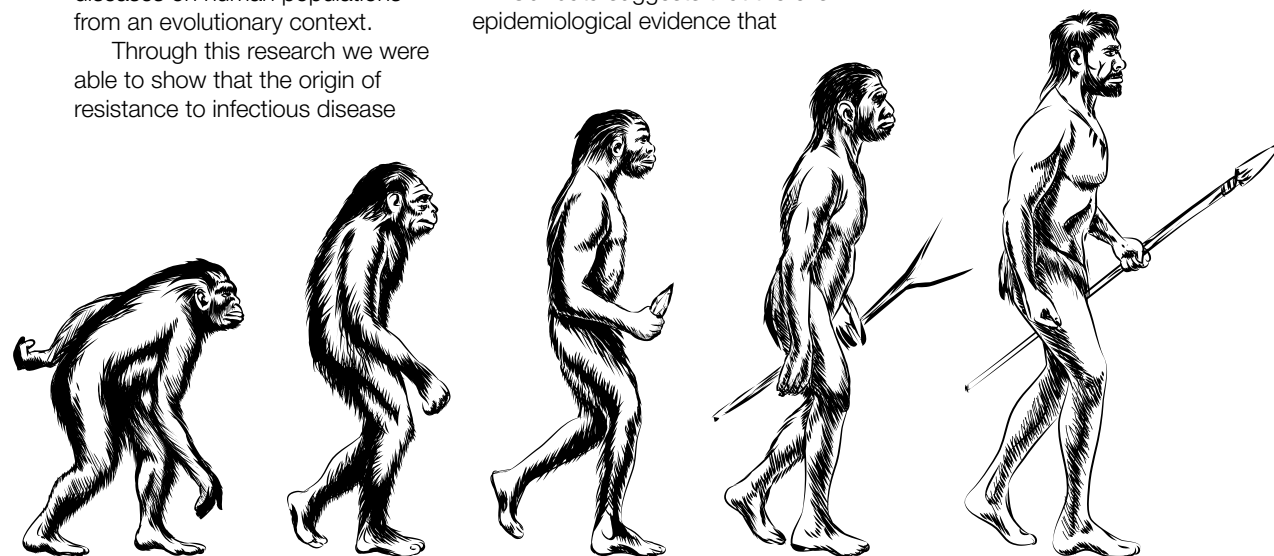
Our data suggests that there is epidemiological evidence that

human diseases have jumped the species barrier between multiple hominin species.

This shows that very close contact between hominin species in the past was common and that exchange of disease, genes and even ideas have played a key role in shaping our evolution and how we live in the world today.

Dr Simon Underdown is part of the Human Origins and Palaeo-Environments Research Group in the Department of Social Science at Oxford Brookes.

More information about the Department can be found at [www.social-sciences.brookes.ac.uk/Research/](http://www.social-sciences.brookes.ac.uk/Research/)



# Can dark chocolate show us the light?

Researchers in the Movement Science Group and the Functional Food Centre at Oxford Brookes are investigating the benefits of chocolate on reducing multiple sclerosis symptoms. **Dr Shelly Coe**, Post-doctoral Researcher, explains the unusual project.





Chocolate is generally seen as a food that's bad for you, but dark chocolate actually has many good things in it that people might not expect.

Dark cocoa containing 70-85 per cent cocoa solids is well known for its high antioxidant and flavonoid content. Acute dark cocoa consumption has been shown to actively improve fatigue in those with Chronic Fatigue Syndrome (CFS) and this was thought to be due to the flavonoid compounds. However, no studies to date have assessed the role of flavonoids or flavonoid-rich dark cocoa for improving fatigue in those with multiple sclerosis (MS). Previous studies have been mostly observational, cross-sectional studies with inconclusive results for determining the best nutritional interventions for symptom management in MS.

Together with Professor Helen

Dawes, who leads the Movement Science Group (MSG), we were delighted to receive nearly £75,000 from the MS Society in November 2015 to undertake a project looking specifically at whether cocoa flavonoids in dark chocolate can help to reduce fatigue in people with MS.

The MSG and the Functional Food Centre (FFC) have very similar research goals; to enable optimal wellbeing for individuals in both health and disease. However, collaboration between the two research groups has not taken place – until now.

One of the MS Society's top ten priorities is to understand which treatments are effective for fatigue in those with MS. There is currently no cure and no medication to treat fatigue, and it can be extremely severe and debilitating. However simple approaches such as diet can be used to reduce the severity.

A pilot trial similar to ours, funded by the University's Central Research Fund, is already taking place and includes two of our undergraduate final year students. A number of both BSc undergraduate and master's students have also gathered pilot data on the dietary patterns in those with MS. The results from these studies will feed into this larger project and be key for helping to plan it effectively.

Two thirds of MS diagnoses occur in young adults between the ages of 20 and 40 who are at the peak of their career and family development. For this project we are therefore recruiting those who are newly diagnosed with the disease and predict the majority of patients to be under the age of 35.

Forty patients with the relapsing form of MS will be given hot chocolate daily over six weeks – half will get a flavonoid-rich cocoa

drink and the others will get a cocoa drink with low levels.

We'll be measuring whether the flavonoid-rich cocoa drink is beneficial by asking the volunteers to complete questionnaires about their fatigue levels and taking part in a six-minute walking test; as well as looking for signs of inflammation and free radical damage in blood samples. The patients will also wear accelerometers-watches that will monitor their activity levels.

We will begin recruiting patients locally from the John Radcliffe Hospital in Oxford, and also through advertisement at Thames Valley MS community venues, clinics and support groups. We also have strong links with the MS doctors and nurses at the local hospital and with MS support groups. The MS Society will also be advertising it on their website.

The project begins in May 2016 and if successful we expect

that it will lead to the development of approaches for fatigue management that enable adequate nutritional advice for managing symptoms safely, thus having a huge impact on symptoms and quality of life in general for people with MS.

More information about the Movement Science Group and the Functional Food Centre can be found on the University's Department of Health and Sport Sciences website [www.shs.brookes.ac.uk](http://www.shs.brookes.ac.uk)

For more information on the MS Society visit [www.mssociety.org.uk](http://www.mssociety.org.uk)

Dr Emma Gray,  
Head of Clinical  
Trials at the MS  
Society said:

*“We are really excited to fund this innovative work. More than 100,000 people are living with MS in the UK and many of them have to deal with the debilitating effects of fatigue on a daily basis.*

*“We are delighted to be supporting this project as it is quirky and unusual, but ultimately based on robust scientific evidence. At the MS Society we want to explore creative ways of helping people with MS cope with their condition and we look forward to seeing the study progress.”*





# From South Wales to São Paulo

## What can we learn from comparing environmental policy development across the globe?

In this issue of *Research Forum* we have highlighted new research projects which have received Newton Fund grants to help build understanding and partnerships in developing countries (pages 4,10-11). **Dr David Botterill**, Senior Research Fellow in the Oxford School of Hospitality Management at Oxford Brookes, explains his project and what we can learn from global research partnerships.

In recent years, the world's gaze has often focused on Brazil. Much of this attention has centred on global sporting events with the hosting of the FIFA World Cup in 2014 and the upcoming Olympic and Paralympic Games in 2016.

Commentators in developed nations have also put the spotlight on Brazil, alongside Russia, India and China, as one of the BRIC nations which are seen as emerging knowledge-based economic powerhouses.

It is within this context that an innovative research project I have been involved in contrasted environmental regulation on coastal areas in Brazil and the UK.

The study's findings are the

result of collaboration between the Oxford School of Hospitality Management and colleagues from the State University of Campinas in Brazil, the University of Reading and Cardiff University.

The project was supported by £40,000 from the Economic and Social Research Council as part of a Newton Fund grant and funding from the São Paulo Research Foundation.

Through this we explored best practice in transnational policy development relating to the governance of environmental quality and crime reduction. It involved comparative analysis of policy and practice in the North Coast region of São Paulo State and South Wales.

From the mid-20th century, both locations have seen rapid decline of previously thriving maritime ports serving traditional industries – fishing and agriculture in São Paulo State and coal and steel in South Wales. There has been particular pressure on steel production in the UK in 2016.

Consequently, the economic base of both has shifted towards consumption and service industries. Central to the service economy in both the UK and Brazil is an increasing dependence on tourism and leisure, and a consequent growth in the creation of new tourism spaces.

In Brazil, whilst there is an apparent commitment to protecting

the coastal environment – primarily through legislation - the project raised questions about the effectiveness of government-led enforcement initiatives. In the UK, it was highlighted that challenges of governance stem from public funding cuts restricting agencies' capacity to protect natural resources. The outcomes of our project focused on non-traditional and more effective means of alleviating poverty through tourism development, whilst protecting the environment and managing crime rates.

We are now disseminating our findings through journal articles and presentations to improve understanding both in the UK and

Brazil and any other territories which are affected by similar issues.

On my final trip to Brazil as part of this research project I paid a visit to the University of Brasilia to make new contacts at two research centres – the Centre for Excellence in Tourism and the Centre for Sustainable Development.

Following a lecture I delivered, and discussions with leaders from both Centres, an application was made by one of our UK collaborators as part of the call for British Council - Newton Fund Research Links workshops in Brazil.

This was successful and I will be working with my colleague Dr Rebecca Hawkins from the Oxford School of Hospitality Management

and Professor Trevor Jones of Cardiff University. Together, we will be taking a group of 12 UK early career researchers to meet with colleagues from the University of Brasilia and Brazilian early career researchers for a week of workshops in July 2016 with the intention of building further joint UK and Brazilian research collaboration. This highlights the international interest in our research findings and tallies with the Newton Fund's aims.

This ongoing research project also fits neatly with Oxford Brookes' International Strategic Objectives of "establishing the University's international strategic partnerships" and in "supporting the development of a worldwide presence."





For more information about Brookes research visit our website at  
**[www.brookes.ac.uk/research](http://www.brookes.ac.uk/research)**

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