

## Meet our postgraduate students

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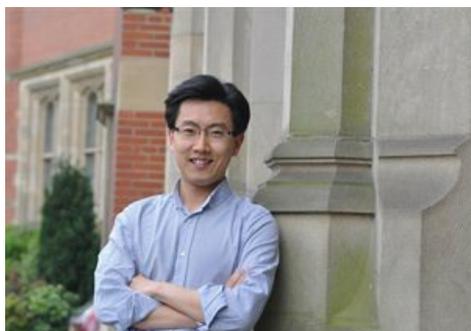
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### Adapting to climate change

#### Sen Du

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#### School of Geography, Earth and Environmental Sciences



I'm from China, and the reason I chose PG study at the University of Birmingham is because it offers just the right academics to supervise my PhD research. The university campus also offers the perfect environment for reflection, relaxation and discussion, something I have enjoyed throughout my undergraduate and postgraduate studies. My PG study has so far helped me develop knowledge in the area about which I feel passionate, as well as helping me to develop the analytical skills needed for my career. Away from campus, I enjoy reading, sketching, documentaries and wine.

#### Research Project: Understanding global climate change policies

Climate change is one of the most challenging problems faced by humanity. It is widely accepted that no solution to tackle climate change will succeed without China playing a meaningful and tangible role. China is now the second largest economy in the world, and is the world's largest carbon emitter measured annually. However, China is a still a developing country; its GDP per capita is only around a sixth of the UK and its annual emission per capita is

around a quarter of the US.

The mainstream 'Western' wisdom on when and how China should address climate change risks being characterised as combative, if not sanctimonious. My research focuses on understanding how Chinese climate policymakers in the central government perceive climate change and act to address the issue. This research aims to answer questions directly from a Chinese perspective. Are Chinese policymakers sceptical towards the science of climate change? How much global responsibility for reducing emissions are they willing to take? What priority do they give to climate change compared with other pressing issues such as economic growth, energy security and diplomatic power? How do they view their richer counterparts' performance on carbon reduction so far?

This research seeks to understand and engage constructively with China's climate policymakers, and demonstrate how certain material and ideological factors shape China's climate policymaking landscape.

#### Fabricio Marques

#### School of Chemical Engineering



I am an international student from Brazil. I chose to study at the University of Birmingham because I was immediately attracted to the amazing campus and welcoming atmosphere when I visited for an Open Day, where I found out about the excellent facilities available, as well as the excellent reputation in learning, teaching and research.

The dynamic and engaging curriculum taught by leading experts in the area, as well as state-of-the-art laboratory equipment and computing facilities available, not only significantly developed my technical and transferable skills, but also sparked my interest to continue in the School as a Doctoral researcher.

In addition, I have benefited from participating in various courses provided by the Graduate School, such as project management, entrepreneurship and presentation skills. I have also had fantastic times as a member of the Birmingham University Chemical Engineering Society (BUCES), which organizes many social, sporting and charity events. It is a great opportunity to meet people with similar interests and diverse backgrounds.

Overall, I would say that I have had an incredible and self-fulfilling experience at the University of Birmingham and I look forward to having lots more!

#### Research Project: Developing novel processes to tackle global warming

There is growing agreement that the major cause of current climate change is the emission of greenhouse gases like carbon dioxide (CO<sub>2</sub>), the majority of which come from burning fossil fuels. Higher levels of CO<sub>2</sub> in the atmosphere trap more heat from the sun, leading to global warming, which can have dire consequences for the Earth's ecosystem.

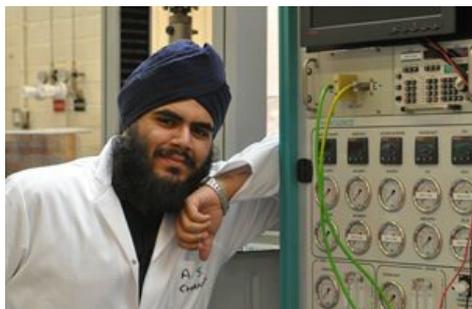
Fortunately there are many technologies that can capture CO<sub>2</sub>; nevertheless, most of these are very costly, energy-intensive, require large equipment and have many further limitations. Consequently, I am working on a novel process using eco-friendly plant fibres loaded with a special kind of solution that can capture the CO<sub>2</sub>, and then be mixed with a mineral to form a strong, lightweight composite material that locks the CO<sub>2</sub> permanently, thus avoiding the huge costs and logistics associated with storage underground.

In addition, the composite can be used in many applications, such as packaging, furniture, automobiles, construction, bone implants, etc. Therefore this new technology is very promising due to its effectiveness, ease of application, low energy consumption, low cost, economic benefits and mitigation of global climate change concerns, thus contributing to a more sustainable future.

## Developing fuels for the future

### Amrit Singh Chandan

School of Chemical Engineering



Coming to Birmingham has allowed me to gain access to world class training in entrepreneurship - which allowed me and my colleague Daniel Symes to win the Plan B business competition. It has also given me the opportunity to work on some of the most controversial topics that affect us enabling me to see a clear effect from my work.

#### **Research Project: Securing our energy for the future**

Climate change is one of the most serious threats to our planet with an average planetary increase of 0.74 oC during the 20th Century according to the Intergovernmental Panel on Climate Change (IPCC). A big contributor to Green House Gas (GHG) emissions is the transport sector with ca. 800 million vehicles in use worldwide. This sector has a value chain in excess of 3 trillion USD per annum. One way of reducing emissions is through the use of hydrogen fuel cells (HFCs). HFCs are electrochemical devices that are able to produce electricity through the combination of hydrogen and oxygen, with the sole byproduct being water. The aim of my project is to develop of new type of fuel

cell for use in the automotive sector.

### Rafael Orozco-Pulido

School of Biosciences



I am very satisfied with my field of research and with what the University has offered me, it has helped me a lot to acquire and develop knowledge and research methodology as well as to build a very interesting network of contacts through seminars, conferences, presentations and publications. I have also found life in Birmingham and UK very easy for me and my family with lots of things to do and enjoy around the city.

#### **Research Project: Using our food waste to create energy**

The fast exhaustion of our fossil fuel deposits along with the adverse effects in climate change are key drivers in the development of new energy technologies. Hydrogen is an environmentally benign source of energy that has 3 times more energy value than gasoline. Hydrogen can be effectively utilised for power generation and will play an important role in the emerging era of new energy technologies.

The recent advances in the use of hydrogen as a power source for vehicles is establishing the need for new technologies in hydrogen production based on non-fossil sources to meet future demand. Hydrogen can be produced in a sustainable and efficient way from organic wastes (biomass) such as sewage, food waste (potatoes, pasta, apples) and agricultural wastes (corn and wheat straw) by biological means through fermentation using bacteria. The bacteria produce hydrogen from sugars and organic acids from the biomass; however biomass is made of complex materials and needs to be pre-treated to produce such a fermentable feedstock.

My work consists in the development of a hydrogen production method from pretreated biomass. Pre-treatment involves 'hydrolysing' the biomass using hot compressed water at temperatures ranging from 180 to 260 °C and various pressures. The product is then detoxified and then fermented again using a two step fermentation process known as dark and photo fermentation which involves different bacteria which have the capacity to produce hydrogen from sugars and other molecules.

### Oliver Curnick

School of Chemical Engineering



I chose Birmingham for its strong links with industry, and I've really benefited from opportunities to gain knowledge and skills outside of my research area, whether essential (business skills and commercial awareness) or just for interest (Mandarin Chinese language). When I finish my PhD, I'll have gained more than just a qualification.

#### **Research Project: Developing new hydrogen fuel technologies**

Hydrogen fuel cells offer clean, efficient energy generation without the need for fossil fuels. They work by converting hydrogen gas directly into electricity, and produce only water as a by-product. Although they were invented over 150 years ago, so far fuel cells have always been too expensive for mass-market applications – mainly because they contain expensive platinum (Pt) catalysts and tend not to last as long as existing technologies, like petrol and diesel engines.

Our research aims to reduce the amount of platinum required by the fuel cell whilst making the catalyst more durable, in order to reduce their cost and extend their lifetime. We can reduce Pt loading by making better use of the precious metal, for instance by making sure that the catalyst particles are located in the right places so they will be most active, or by mixing Pt with other metals to form more catalytically-active alloys. To improve durability, we can form a protective coating on the particles to prevent them from dissolving or fusing together during use.

If we are successful in achieving targets for Pt loading and catalyst durability, this will represent a significant step towards enabling widespread adoption of this technology for power generation in homes and vehicles. In turn, the replacement of dirty, inefficient engines and turbines with clean, green fuel cells will help to achieve improvements in efficiency and reductions in harmful emissions needed for a sustainable energy future.

## Seyed Hani Elammahdi Mortazavi Najafabadi

School of Electronic, Electrical and Communication Engineering



**Research Project:**  
**Creating the next generation of wireless network**

The standard for wireless Internet access is currently the IEEE 802.11 Wireless Local Area Networking (WLAN) technology, also known to the general public as Wi-Fi. Wi-Fi connectivity is integrated in every modern portable computer, laptop, and palmtop. Wi-Fi networks for wireless Internet connectivity are available in most airports, university campuses, offices, and homes as well as in many restaurants and coffee shops. Wi-Fi is extensively integrated in dedicated devices such as electric utilities and parking meters and even exploited in specialised applications such as garden hose sprinklers. One of the key factors underlying the broad acceptance of Wi-Fi is the simplicity and robustness of the Medium Access Control (MAC) protocol.

Wi-Fi can be configured to meet the needs of specific applications and installations. Configurations are easily changed and range from 'peer-to-peer networks' suitable for a small number of users, to full 'infrastructure networks' suitable for a large number of users, these larger networks allow 'roaming' over a broad area. In 'infrastructure

networks' each access point only has access to a limited number of the channels, this is to avoid interference with neighbouring access points. Now consider the situation where the number of neighbour access points exceeds the number of available channels, this means the neighbour access point occupies all available channels. This scenario will result in use not being able to use WiFi anymore.

To solve this problem we need to change the way we share medium from a centralised to decentralised fashion. Our research group is trying to design a solid MAC protocol using the optimization methods such as game theory, fuzzy logic and etc. before this issue becomes a big challenge in wireless network technology.

## Doga Istanbuluoglu

School of Business



I'm second year PhD researcher in the Birmingham Business School, Marketing Department, with my research being supervised by Prof. Isabelle Szmigin and Dr. Sheena Leek.

As an international student, I believe the University of Birmingham is great place to study. Birmingham is one of the most exciting cities in the UK with a great variety of cultures, opportunities and attractions. It is a 24 hour city and there is always something for everyone. UoB is also one of the most exciting universities in the UK; it offers not only

a wide range of educational opportunities, but also sport facilities, variety of student clubs and societies and a lovely campus.

**Research Project:**  
**Helping to understand how we behave online**

In recent years, online Social Networking Sites have proved to be remarkably popular. Facebook in particular claims to have more than 500 million active users, and it is the second most visited site on the Internet. Right now, millions of people from all around the world use Facebook to interact with each other. As they do so, they engage in more and more activities related to the purchase and consumption of products. They update their status messages with positive or negative comments about brands, share photos of themselves using products, create groups to protest against unethical corporate activities and seek service support or advice on discussion pages. This novel and underexplored area of how today's consumers behave on Social Networking Sites needs a careful investigation to understand how our online lives will be shaped in the future.

My research is particularly trying to understand how and why consumers complain on Facebook by exploring the themes and features of online complaining behaviours. When consumers are unhappy, they take public action on Facebook through their status updates, companies' official pages and user-created groups. Until a few years ago, damage of consumer's negative comments was limited to their social circle of friends and family, but now, negative feedback can be read online by millions of people. Answering the crucial question as to how companies and organisations can and should react to these negative comments in order to preserve their business will only be possible if we carefully try to understand these behaviours.

## Ensuring food sustainability

### Stuart Hands

School of Biosciences



I came to study at the University of Birmingham to work with and meet world leaders in my field; I have not been disappointed.

**Research project:**  
**Developing natural alternatives to chemical pesticides**

Research project: Since the 1960's there has been a rapid rise in the number of insect pests which are resistant to conventional chemical pesticides, like hospital super-bugs which developed from inappropriate use of antibiotics, so resistant insects have evolved due to the over use of pesticides. For this reason and because of public concern about the health and environmental effects of chemicals on crops there has recently been pressure within the E.U. to look for alternatives.

One such alternative is Biological Control, which uses natural predators and parasites to reduce pest populations to a level below that which is economically damaging. Biological control is seen as a natural alternative to chemical pesticides however it is not always as effective as might be expected.

My research has focus on identifying environmental and biological factors which limit the use of biological control agents, specifically parasitoid wasps, in European glasshouse agriculture with a longer term aim of mitigating against these limiting factors.

## Laura Vickers

School of Biosciences



Studying a PhD at the University of Birmingham is more than just molding yourself into an effective researcher. It is about becoming an independent innovative individual, with the confidence and ability to perform in any environment.

**Research project:**  
**Investigating aphid genes to develop novel organic pesticides**

Greenfly (aka aphids) cause global crop losses worth billions of pounds every year: as a result, they are classified as global pests. The damage they cause can be direct, such as simply eating crops, or indirect, through spreading lethal plant viruses.

Greenfly are very different to many insects as they feed on plants in much the same way mosquitoes feed on humans. To do this they have special 'sword like' mouthparts which they use to pierce into the plant flesh to locate and feed from the plant 'blood vessel', called the phloem. The phloem is the main vessel of the plant, transporting high amounts of sugars and small amounts of protein around the plant. The high sugar concentration in the phloem would be dangerous to many other animals, but greenfly appear to have special enzymes that help them cope with this as their sole food source.

Our research is trying to understand exactly how greenfly adapt to a high sugar diet, by trying to understand the importance of each of these 'sugar' related enzymes unique to greenfly. Once we have identified which of these enzymes are the most important to the greenfly we may be able to inhibit the production of these enzymes. The technology we want to use to prevent the production of these enzymes is called RNAi, which uses the animals' own 'cell-based' machinery. Success would mean the ability to control greenfly numbers on crops without harming other species. The result of this would be revolutionized farming practices that increase crop

production globally, without the need for general pesticides that damage our environment.

## Jess Fannon

School of Biosciences



I have really enjoyed my time at Birmingham University and the MRes Molecular and Cellular Biology course has really allowed me to develop my research skills in a fun and challenging environment.

**Research project:**  
**Investigating what makes a rice plant resistant to pests**

Making sure food production keeps pace with the Earth's growing human population is a really important issue – and it's only getting more difficult as the limited land available for growing crops is put under more pressure. Agriculture needs to be more efficient and less harmful to the environment if we are to have any chance of avoiding major food shortages.

One way that crop production could be improved is by studying the ways in which some plants are able to naturally resist insect pests. It might be possible to create plants that are more resistant to pests, reducing crop losses and pesticide use. My research involves studying the functions of certain genes found in exceptional species of rice that

are able to survive attack by Brown Plant Hoppers, a major pest in Asia. Currently, Brown Plant Hoppers are very difficult to control with pesticides and they cause a lot of damage to the species of rice that are so important for food production in Asia - during 2005 the plant hopper outbreak in China affected about 7.53 million hectares of rice, accounting for 2.77 million tonnes of lost rice production.

I have been studying how these genes affect plants' ability to defend themselves against insect pests by looking at how 'mutant' plants without these key genes respond to aphids (green fly) – another major agricultural pest that feeds in a similar way as the Brown Plant Hopper. I have been collecting detailed information about how aphids behave on the different plants.

## Ensuring that equality is not just for the privileged

## Deborah Brewis

Gender and Sexuality Studies Centre



I chose to continue on to postgraduate study at the University of Birmingham in part due to the hugely positive experience that I had here as an undergraduate. I was attracted to the MPhil(B) course in Gender Studies as the half-taught, half-research structure of the course would allow me to gain an interdisciplinary introduction to the main theories and developments in the field and also to specialise in a particular area and gain the academic and personal skills necessary for a career in research.

**Research Project:**  
**Ensuring that our gender is not our destiny**

Significant advances have been made towards gender equality in the world of work since the first feminist movements of the 1950s and 60s, with more women entering the workforce and guarantees for equal pay being passed into law. However, in Britain today there continues to be a noticeable difference between the average earnings of men and of women, many industries are still heavily dominated by either men or women, and few women

are reaching the most senior positions in their places of work. Recent discussions in the media of voluntary quotas for women in boardrooms have again brought the issue of gender discrimination in employment to the fore.

This project examines the extent to which the challenges of gender discrimination have been met in the eyes of the University of Birmingham's final year undergraduates as they look towards their futures, and compares these visions with the realities of employment that our alumni are facing. By analysing the messages and images that surround us in television, advertising and policy, this project investigates the ways in which our students and alumni learn about the norms of being 'man' or 'woman' in terms of appearance, behaviour, success and equality in the world of work and asks what impact this has on their expectations of work and their careers.

## Ryan Bradley

### School of Education



I chose Birmingham for my PhD because of the national and international reputation of ACER as leaders in research related to Autism education.

Though I am part-time and non campus based I definitely feel part of the University and really enjoy meeting other students in the ACER postgrad group each term.

Outside of student life I play both football and the drums very badly and regularly confuse my children who think I will be a Medical Doctor at some point in the future.

**Research Project:  
Working towards building self esteem in Autistic students**

Autism (including Asperger Syndrome) affects the way a person communicates and relates to the people and the world around them. It is a spectrum condition, which means that while all people with autism share certain difficulties, their condition will also affect them in different ways. There are over half a million people in the UK with

autism—that's around 1 in 100—and there has been a significant increase in the number of students with autism attending mainstream schools over the past decade.

Previous research has indicated that young people with autism are at higher risk of negative outcomes during adolescence and early adulthood than their peers. Improving outcomes for these students is a complex and challenging issue given their specific and complex needs in the areas of social communication, social interaction and emotional well being. However, even moderate increases in educational provision could substantially improve the lives of people with autism and the lives of their families, reducing the economic cost for living support to society.

My research will examine the impact of a peer mentoring programme on outcomes for students with autism in mainstream secondary schools. The aim of the programme is to raise self-esteem and levels of peer acceptance for students with autism. Previous research has indicated that increasing the levels of self-esteem for this group of young people could lower their risk for negative outcomes in early adulthood. The study will also evaluate the potential implications for peer mentoring as a suitable form of intervention for pupils with autism.

## Exploring political and cultural change

## Tihomir Topuzovski

### School of Geography, Earth and Environmental Sciences



After obtaining my bachelor degree and MA from the University Sts. Cyril and Methodius in Skopje, Republic of Macedonia, I chose the University of Birmingham (department at GEES) as it provided me with an opportunity to carry out doctoral research that will unite my central research interests (philosophy, culture, human geography, etc.) Throughout my academic education I have received various academic achievement awards and been successful in receiving research grants. I am convinced that my PhD project at University of Birmingham will contribute to the development and articulation of new scientific approaches and practices.

**Research Project:  
The Impact of Geographical Boundaries on Identities and Artistic Practices**

The purpose of my research is to explore the region of the Western Balkans, and the way this process is enmeshed within wider political and cultural dynamics. The recent history of this part of Europe has been marked by a change of the system, from socialism to neo-liberal capitalism, accompanied by radical reforms in every stratum of society.

The change of these societies resulted with a new geopolitical formation, including new models of agency, and new

forms of political and symbolic representation. Furthermore, within the process of change, culture reached the point at which it was transferred from one established system to another, because the version of the new politics in the region implicated and identified new cultural patterns.

Through this, I explore the relevance of several theoretical concepts within the context of the region, while examining the different ways in which the rearrangement of the state and regional borders has been implicated in the rise of new identities and artistic practices. Hence, the research will address the conditions after the fall of socialism, the role of aesthetics in the construction of new identities, thus contributing to the understandings of the manner in which political processes are interlinked with culture.

## Kieran Connell

### Department of Modern History



Postgraduate study at Birmingham has given me a wide range of opportunities to communicate my research findings to non-academic audiences. For example, to mark 25 years since the Handsworth riots in 2010, I curated an exhibition of photography and appeared in local newspapers and on BBC radio.

**Research Project:  
Black Handsworth in the 1980s**

My work explores the social and cultural background to the 1985 Handsworth riots. The riots were a watershed moment in the recent histories of Birmingham and Britain. Two people were killed, scores injured and many more were arrested, and the events were characterised by politicians and the media alike as 'race riots'.

By focusing on the context for what happened, my research offers a 'micro-history' of one of the most multicultural areas of Britain. It shows how immigrants from the Caribbean and south Asia, and their children who were born in Britain, came to terms with what was often a hostile British environment.

It explores the ways in which black communities formed political organisations in order to improve conditions in Handsworth, and how a diverse range of cultural practices – from a cricket club to reggae music, from photography to religious life – helped to establish a black identity that was firmly rooted in the Handsworth locale. By focusing on a key arena in a critical decade, my research therefore represents a snapshot of the development of multicultural life in Britain.

## Daisy Payling



I'm from London, but I chose the University of Birmingham for PG study because the history department has a strong and welcoming community of contemporary historians.

My PG study has been quite a steep learning curve but it has helped me develop my research skills considerably, and quickly!

**Research Project:  
The Anti-Poll Tax Campaign**

The Anti-Poll Tax Campaign of the early 1990s was one of the largest acts of civil disobedience in Britain in the twentieth century. Around 17 million people refused to pay what they considered to be harsh and unfair poll tax. Those who refused to pay can be divided into 'Can't Payers', who simply could not afford to pay, and 'Won't

Payers', who refused to pay out of solidarity with the 'Can't Payers'.

Historians and sociologists writing about the Anti-Poll Tax Campaign have often focused on the 'Won't Payers'. Some hail these as the initiators of a new wave of activism like that of the 1960s. Participation in the Anti-Poll Tax Campaign is sometimes seen as a badge of honour for activists who went on to be involved in other protest movements, such as 1990s radical environmentalism. I think this is too simple a way of looking at the campaign and its legacy.

My research explores the 'Can't Pay' side of the campaign. I will try to understand the links between 'Can't Payers' and 'Won't Payers' and to what extent one group drove the campaign more than the other. I also want to investigate whether 'Can't Payers' had links to Labour Party politics, or if student politics influenced their decisions.

In asking and answering these questions my research will place the Anti-Poll Tax Campaign into the wider history of political activism. David Cameron's talk of needing to encourage a Big Society presumes that Britain lacks social cohesion and has apathetic citizens. My MA research on the Anti-Poll Tax Campaign and my PhD research on British protest movements of the 1980s and 1990s aims to show that activism is alive and well. My research will explain how activism has changed in this period, but show that it is strong and involves many ordinary citizens, not just those we would conventionally label as 'activists'.

## Providing justice for all

### Peter West-Oram

School of Philosophy, Theology and Religion



I am a PhD candidate in Philosophy, supervised by Heather Widdows, Professor of Global Ethics. My PhD is funded by the Arts and Humanities Research Council (AHRC), through the Block Grant Partnership Scheme.

In July 2011 I will have the opportunity to present conference papers at the University of Sussex and at the second Lisbon Conference on Global Justice at Universidade Nova, Lisbon, Portugal.

**Research Project:  
Providing aid to the global poor**

My PhD focuses on health care and global justice, with particular reference to the role of wealthy nations in providing aid to the global poor. The lack of access to basic health care is of huge importance to millions of people globally, the statistics are staggering; roughly 18 million people die every year from preventable or treatable diseases. This represents 50,000 deaths a day which could be prevented if the people affected had their basic health care needs met. Not only is this a disturbingly high number, but it also concerns the world's poorest people:

those who are most vulnerable and who are most affected by diseases which are easily treatable.

My research looks at countries' obligations to provide aid and the issue of having rights to health care, whilst seeking to define what exactly is meant by the term 'health'. Focusing on the nature of human rights, I intend to demonstrate that human beings have an entitlement to at least a basic level of health care: an entitlement which transcends national boundaries. I am also interested in the role of global organisations, such as the United Nations and World Health Organisation, in providing aid to the developing world.

## Understanding our language

### Dinesh Ramoo

Department of Psychology



**Research Project:  
Exploring the building blocks of language to assist in the treatment of brain damage patients**

Our research is on how we store words in our 'mental dictionary' and the ways in which this determines the manner in which brain damage leads to communication problems. A number of speech production models have tried to account for the speech errors produced by patients with brain damage, but they have usually discarded the mental representation of syllable structure. Recent work has since challenged this previous approach, and we are now trying to develop a speech production model that can account for patient errors by storing syllable structure.

One of the unique aspects of this work is the merging of psychological research methods with linguistics and computing. We have developed software based on linguistics principles to process speech transcriptions in an effort to identify word and sound frequencies which can then be used to design psychological experiments. One of our

aims is to create a computer model that can replicate the observed patient data.

One of our pioneering projects has been to conduct experiments in India with Hindi patients, and our future plan is to expand this further into other languages. As a result we have so far developed a variety of new methods for testing Hindi patients, and plan to develop software applications to analyse and identify particular problems in patients that may not be easily identifiable with existing tests. We consider this would be a valuable contribution to the study of human speech production.

## Teresa Ong

Department of English



The University of Birmingham is a wonderful place to conduct research as it is a very established university and is highly regarded for its research's standard. The course which I am doing is very flexible. It allows me to attend various lectures and talks in my department and at the same time to have supervision for my research. This has helped me to build up my independence and creativeness for my future career. I also work as a Postgraduate Student Ambassador which allows me to meet more people around the campus. The University Sports Centre is one of my favourite place for socializing as I enjoy swimming with my friends in there.

My advice: Follow your heart in any decision you need to make in order to lead you to a brighter future. Grab all opportunities when they are there for you before you regret it forever. Always remember, believe in yourself because all the dreams and hopes are made in your own eyes!

**Research Project:**  
**Exploring language change and the influence of American English**

The phenomenon of language change is universally recognized. There have been many popular debates from the media about the negative impact of language change but for linguists, they view these changes optimistically. English, a language which plays an important role in our life is highly influenced by the process of language change.

In today's World Englishes, American English is one of the national varieties that is widely spoken by native speakers of English and studied by foreign learners. With the increasing population in America and their universal connections, American English will soon become the power of English.

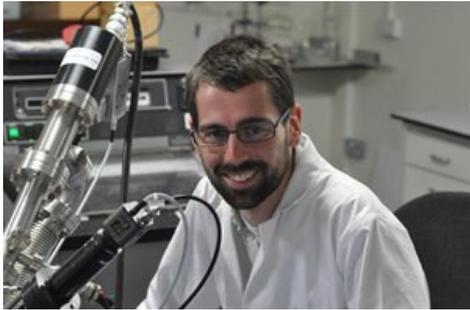
Since American English is commonly used as reference to World English(es), it creates an increasingly great impact on influencing other varieties around the globe. Studies have shown that the rapid global spread of American English as a leading form of English is the cause of language change.

Our research aims to find out how influential American English is in the process of language change. This process is probably motivated by linguistic factors. As our study of grammatical patterns has shown changes in their trends, this gives an insight that English is developing and changing continuously.

## Understanding and treating disease

### Andrew Palmer

Department of Chemistry



**Research Project:**  
**Developing our understanding and diagnosis of a common form of age-related blindness**

Age related macular degeneration is the biggest cause of vision loss in elderly people. Often a problem is not noticed until there is some loss in the ability to see fine detail. This may be difficulty in reading small print; vision may have a small blurred area in the centre; straight lines may look distorted or wavy or seeing shapes or colours that aren't there. The disease usually starts at the center of your field of vision and, if untreated, can spread to become a large blind spot.

We are developing and testing an early warning imaging system that can detect changes in chemical levels in the eye due to macular degeneration before it has caused any sight defects. In addition, we are mapping the locations of important chemicals in the eye using a technique called imaging mass spectrometry. These maps can be compared with the results from the clinical imaging system and may be useful in discovering chemical changes caused by diseases of the eye.

The clinical imaging system is designed to provide opticians with a cheap, rapid and comfortable screening device for use on the elderly population. Early diagnosis means early treatment and a reduction or prevention of sight loss.

### Dan Roberts

Department of Immunity and Infection



I'm from London originally, and I did my undergraduate degree at Nottingham Uni. I'd say that UoB is a great place to study because not only is it recognised internationally as a leader in academic research, but it also an excellent place for personal development as well, by providing ample extracurricular training courses and networking opportunities.

**Research Project:**  
**Moving towards making breast cancer history**

Breast cancer is currently the most common cancer in the UK, with around 46,000 new cases being diagnosed every year. A molecule called PRH, which is present in normal breast tissue, has been shown to be deactivated in breast cancers. My research attempts to understand the role PRH plays in both normal and cancerous breast cells. PRH acts as a switch, by turning off genes within the cell that allow the cells to divide and migrate. Therefore, by manipulating PRH expression within these breast cancer cells, it is hoped that this could lead to a treatment which stops the growth and spread of breast cancer.

## Understanding how our past influences our present

### Emma Login

Institute of Archaeology and Antiquity



I chose to study at Birmingham because of the expert supervision that was in my field.



## Eve Davies

Institute of Archaeology and Antiquity

### Research Project: Investigating the significance of war memorials

War memorials are such a common sight in the UK that they often go unnoticed. There has however been a recent upsurge in interest in war memorials, sparked in part by current conflicts in Iraq and Afghanistan. Inappropriate behaviour towards war memorials such as graffiti and urination now warrants media attention, often at a national level. How relevant are these memorials to today's societies and why do some cultures continue to be fascinated by them when in others they rarely exist? My research explores and compares the trend of war memorialisation in Britain, France, Belgium and the USA.

I want to challenge the idea that memorials are only important to those with first-hand memories of the events which they commemorate. I also aim to demonstrate the many ways in which memorials are reused and given new meanings. I am especially interested in their relevance to present-day, particularly urban societies, in which few people have direct links to the individuals and events being commemorated.

By using theories from many different disciplines I will be investigating questions such as: What role do memorials have regarding the memory of a conflict? Are they reconciliatory? How and why are 'forgotten' memorials reinvigorated by communities? And finally: do memorials actually help us forget?



### Research Project: From Womb to the Tomb: the Life Course in Byzantium

A child born tomorrow can expect to live for five hours longer than one born today. Longer life expectancies are having an impact on both our familial relationships – at what age we choose to marry and reproduce, and our obligations towards aging relatives – and our working lives, such as retirement age. I look at the Byzantine Life Course (6<sup>th</sup>-12<sup>th</sup> century), drawing conclusions about the familial and societal roles and responsibilities of the Byzantines and prompting a comparison of our own Life Courses to those of bygone eras.

Byzantium may be seen as a very distant civilization, but my thesis shows us that some of our modern day concepts were pioneered in the Byzantine Empire and subsequently adopted by the West. For example, the Byzantines viewed childhood as a developmental period and they were one of the first empires to make provision for orphaned children when enrolling them at monasteries. As life expectancies were short and few people would have lived into old age, the Byzantines attached special significance to the elderly, sometimes seeing a person's old age as a symbol of their virtue.

This research enables us to see that our own experience of aging is not simply biological but subject to the society and culture that we live in.

## Rebecca Day

Institute of Archaeology and Antiquity



I chose PG study at Birmingham because of its international reputation for Byzantine studies. Also, for my fieldwork, the outstanding transport links are a huge bonus.

### Research Project: Understanding trade relations between West and East

Trade and contact between the Mediterranean and south India and Sri Lanka in the fourth to eighth centuries A.D. (Supervisors Prof. L. Brubaker, Dr A. Dunn)

My research uses the movement of money to demonstrate connections between the Mediterranean and the Indian Ocean in the Late Antique world. I collect information about Late Roman and Byzantine coins found in India and Sri Lanka, by looking at old publications and visiting museums and private collectors where these coins are kept. The information obtained from the coins includes their types, production dates, condition (worn, in pristine condition, pierced to be used in jewellery etc.), and whether they are genuine or forgeries produced at the time.

In combination with the coin finds, I analyse archaeological reports of fourth-eighth century trade sites and ports in the Mediterranean, the Red Sea and the Indian Ocean, and texts which mention long-distance trade. Roman poetic, political and religious texts, Tamil poetry and the historic chronicles of Sri Lanka all provide unique insights. The initial boom in trade between Rome and India in the first and second centuries is quite well-researched, but using these different categories of evidence my project focuses on understanding the volume, nature and importance of contact between West and East immediately after this. What were people trading, how often, how did trade change, and did contact between these regions affect their societies?

## Unravelling the interactions between religion and society

### Islam Issa

Department of English



### Research Project: Using literature to deepen our understanding between the Islamic and Western worlds

This research aims to contribute to knowledge of the history, development, and ways in which non-Islamic writings are read and understood by Muslims. The research breaks new ground as the first full-length study examining the response of Arab-Muslim readers to John Milton's (1608-1674) Biblically-based epic poem Paradise Lost which, due to its vivid portrayal of God, Adam and Jesus, is regarded a blasphemous and taboo text in the Islamic world.

Paradise Lost holds an important, if often misunderstood, place in Arab-Islamic culture; this research aims to map the consequences of the text being prohibited, distorted in translation, and truncated in publication, and to ask whether the poem could actually be edifying for Arab-Muslim readers.

Through primary research carried out in Egypt, analyses of the Arabic translations of Paradise Lost, and

comparisons between the poem's content and Islamic belief, this research presents a rich picture of the attitudes

and responses of contemporary Muslims to certain concepts in the poem, such as God, Satan, Heaven and Hell.

As recent world events have pushed relations between Islamic and non-Islamic cultures to the top of today's global political agenda, it has become important to look beyond the English-speaking world to evaluate the full extent of the cultural reach and influence of English literature. This research is therefore a case study which can potentially deepen intercultural and interfaith understanding, and build bridges between the Islamic and Western worlds. It can also lead to more culturally-specific methods of teaching literature.

## Daniel Reynolds

Centre for Byzantine, Ottoman and Modern Greek Studies



What encouraged me to continue at Birmingham, aside from the excellent training and facilities it offers (a prerequisite of any prospective postgraduate), is the academic culture which exists here. Birmingham maintains a strong dedication to innovation and the advancement of the discipline, whilst always maintaining its commitment to the highest standards of academic research. There is also a sense that that one is not just a student here but part of an academic community which both hones my key research skills whilst simultaneously encouraging me to develop as an independent critical thinker that can function as part of a wider international community of scholars: this is an experience I feel that not all universities can offer.

### **Research project: Assessing the impact of Islamic expansion**

Interest in the history of Christian-Muslim relations has boomed over the past decade with books becoming widely available for non-specialists. However, many overlook recent discoveries, repeating interpretations which are decades— sometime centuries— old. This has reinforced many stereotypes about Muslim/Christian contact in this

period. After the death of Muhammad in 632 AD, his followers launched a military campaign now known as the 'Islamic conquest,' taking most of the Middle East and North Africa: areas which had been ruled by the Christian Byzantines since the collapse of the Roman Empire in the 5th century.

An important area of Christian settlement in the Middle East was the so-called 'Holy Land', a region, now in modern Israel, Jordan and Syria, where biblical prophets— including Jesus— were believed to have lived and preached. After Christianity was legalised in the Roman Empire in 313AD, these sites became places of pilgrimage where monasteries flourished. It is often claimed that the Muslim conquerors devastated monasteries and that Christians and monks either fled to Byzantium, or converted to Islam. My research shows that neither of these assumptions are correct.

Archaeological material and manuscripts show that monks performed important social roles, working within the Islamic government whilst still continuing their religious function. Archaeology has identified monasteries built almost two hundred years after the 'Islamic conquest' and the presence of Muslim pilgrims at monasteries connected to Christian/Muslim prophets. But, this situation did not remain unchanged. Out of hundreds of monasteries that existed before 640AD, only a handful survived until the 11th century. The reasons for this are the focus of my research.

As with all minority groups, in medieval society, Christians in Islamic Palestine were increasingly restricted in their social freedoms. Monks in Palestine challenged this, launching a defence of Christian theology in Arabic; attempting to explain Christianity through the vocabulary of the Qur'an to bring it 'up to date' with changing trends of religious discussion. These have been recently studied, but not in relation to concurrent archaeological and social developments. My research aims to challenge this issue.

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