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UNIVERSITY OF
BIRMINGHAM

RESEARCH
special edition

Pro-Vice-Chancellor's *view*



Pro-Vice-Chancellor, Professor Malcolm Press



YOUR BUZZ

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Views expressed in the magazine are not necessarily those of the University or a statement of University policy. All submissions may be subject to editing. The Editor's decision is final.

Front cover image: Birmingham Fellows: Dr Sheelagh McGuinness and Dr Stephane De Brito

Knowledge is the essence of universities; it forms the basis of the education that we provide to our students and its generation and application are fundamental to our research.

This edition of *Buzz* features some of the highlights of our discovery research and its impact. I hope that the stories convey the passion and commitment to excellence by our academics as well as the importance of the work, with diverse societal benefits that enrich the lives of everyone.

Our research is characterised not only by its quality and significance but also by its breadth, reflecting the comprehensive range of disciplines in our university. A unifying feature of many of the projects is that they are collaborative endeavours with partners in the UK and further afield.

Some of these projects build on our strategic international relationships, for example with our US partner the University of Illinois at Urbana-Champaign, as well as in India, Brazil and China. Others involve businesses, libraries, museums, and world-renowned theatre companies, as well as research institutes. These partnerships demonstrate that research crosses national boundaries. The desire to create new knowledge and apply it to the grand challenges that we face across the world knows no boundaries and remains at the forefront of our ambition irrespective of geographical, political, religious or ethnic differences. This can only bring benefit for all.

Closer to home, we are proud of our collaborations in many sectors, including

health, engineering, food, security, diversity, infrastructure, energy, and the arts. In conversation with partners, I'm always struck by what attracts them to Birmingham, in particular the pull of our strong academic areas, our distinctive cultural and place-based assets, our connectivity, and our way of engaging and doing business with them.

It is clear from the career paths of our staff (such as the 'Research Pioneers' featured on pages 8–10) that outstanding academics have a choice about where they work. One of my responsibilities as Pro-Vice-Chancellor for Research and Knowledge Transfer is to create an enabling environment where everyone can achieve and then exceed their personal best. This means ensuring that we maximise support for research and remove obstacles that might impede progress, recognising that we are managing a creative endeavour. The support and expertise provided by the strong professional services staff at Birmingham is integral to creating this environment. Only by doing all this can we support and retain our excellent academics, encourage others to join them, and sustain a thriving community at Birmingham.

**Pro-Vice-Chancellor for
Research and Knowledge Transfer,
Professor Malcolm Press**



SUPPORTING RESEARCH ON A GLOBAL SCALE

International Relations (IR) facilitates and supports the University's engagement with global research partners, with a particular focus on the University's strategic priority regions. Where we are able to we advise academic colleagues on relevant collaborative opportunities and help them find appropriate partners. IR disseminates leads that come to us through our global network and formalises links in agreements and Memorandums of Understanding. The team also administers a number of institutional funds that are intended to foster further academic collaborations.

BRAZIL

Quantum technology collaboration

University physicists are working with the University of São Paulo's Institute of Physics São Carlos, to develop novel quantum sensors for precision positioning and underground mapping. These sensors rely on gases of atoms which have been laser-cooled to the coldest temperatures in the universe. At such low temperatures, matter behaves differently: a single atom can appear to be in multiple places at once, and different atoms can interfere with each other like ripples crossing on the surface of a pond. These unusual effects will allow us to build devices capable of hyper-sensitive timing and navigation, and the detection of underground objects.

CHINA

Plant diversity in China vital for global food security

With climate change threatening global food supplies, new research by University academics claims the rich flora of China could be crucial to underpin food security in the future. Conducting the first survey of its kind, with partners in China, University academics have identified 871 wild plant species native to China that have the potential to adapt and maintain 28 globally important crops, and have compiled a comprehensive database of these crop wild relatives. The next step is to systematically conserve their diversity in situ and via gene banks to ensure their wealth of resilient characteristics are available to plant breeders.

INDIA

Tackling tuberculosis in partnership

Researchers from the School of Biosciences have joined forces with the Indian Institute of Science, Bangalore in a partnership to combine the complementary strengths of both institutions. The research will study the biology of Mycobacterium tuberculosis, the bacterium that causes TB, with the aim of developing new treatments and diagnostics. Together the researchers are involved in deciphering how the 'bricks' of the cell wall of the tuberculosis bacillus are made.

USA

Building bridges between the West Midlands and the Midwest

Our strategic alliance with the University of Illinois at Urbana-Champaign (UIUC) continues to gain momentum. The BiRmington-Illinois Partnership for Discovery, EnGagement and Education (BRIDGE) aims to deepen wide-ranging connections spanning over 15 key academic disciplines to progress collaborative teaching, learning and research initiatives. Each College has a representative on the BRIDGE Working Group, which shapes the strategic direction of the alliance. Colleagues are encouraged to submit an application to the second call for BRIDGE Seed Funding, which closes on 28 February. Further details: <https://intranet.birmingham.ac.uk/external/international/relation/north-america/collaboration-with-north-america.aspx>

FUNDING OPPORTUNITIES

Newton Fund

The Newton Fund is a £375 million government funding scheme to encourage collaborative research with 15 developing countries, including Brazil, China and India. <https://intranet.birmingham.ac.uk/external/international/relation/fundingops/newton-funding.aspx>

Travel Funds

IR manages travel funds to allow the exploration of opportunities in our strategic regions, and coordinates jointly funded partnerships such as the forthcoming UIUC BRIDGE call, or the calls with Brazilian state funding council FAPESP and FAPERJ. <https://intranet.birmingham.ac.uk/external/international/relation/fundingops/index.aspx>

COMING UP . . .

Birmingham's Ironbridge International Institute for Cultural Heritage and the Collaborative for Cultural Heritage Management and Policy at UIUC will hold a conference in July 2015 with a theme of Trans-Atlantic Dialogues on Cultural Heritage: Heritage, Tourism and Traditions. The organisers are currently welcoming proposals from academics across a wide range of disciplines at ironbridge@contacts.bham.ac.uk.

CONTACT US

For further information on the work of IR, including contact details visit: <https://intranet.birmingham.ac.uk/external/international/relation/devandmob-team.aspx>

Fuel Efficient Car Lease Scheme launched



The University of Birmingham launched the Fuel Efficient Car Lease Scheme in October together with **sgfleet** who are providing the Novalease scheme. At the official launch, **sgfleet** held a series of presentations and also brought along a number of demonstration cars.

The scheme works by letting staff exchange a portion of their gross monthly salary for a car of their choice, thus saving on tax and national insurance. As well as

the car itself, other components are included in the cost such as insurance, road fund licence, servicing, tyres and maintenance. The scheme has thousands of cars to choose from, all under an emissions cap of 120 grams of CO₂, which supports the University's carbon reduction strategy. <https://intranet.birmingham.ac.uk/has/sustainable-travel/fuel-efficient-vehicle-lease-scheme.aspx>

Pro-Vice-Chancellor appointed as Vice President of the Royal Academy of Engineering



Professor Richard Williams, Head of College of Engineering and Physical Sciences, has been appointed as Vice President of the Royal Academy of Engineering, following his election in September as a Trustee of the Academy.

The Academy with its 1,400 Fellows is the premier leadership voice for engineering and offers advice to government and other policy bodies. Professor Williams commented: *'I am honoured and delighted to be able to act as a Vice President. Engineering is at the very heart of society*

and critical to the regeneration of the UK economy. The Fellowship is committed to proactive support for development of appropriate science education in schools, addressing diversity issues in engineering, driving innovation at a faster pace in UK companies and in our national infrastructure and related systems.'

The Academy hosts activities and events related to policy issues, industrial sectors and enterprises occurring across the UK and with other national Academies overseas.



Birmingham hosts charity football match

The annual Conservative Party versus the Lobby charity football match took place on Sunday 28 September. The match, organised by the FA, was supporting the Breast Cancer Awareness campaign.

The Conservative Party team consists of MPs and advisors, and the Lobby team is made up of political journalists. Jeremy Hunt MP, Secretary of State for Health acted as a linesman. The final score was 7–2 to the Lobby.

European research collaboration

The University has signed a bilateral collaboration agreement with the European Commission's Joint Research Centre (JRC), the in-house science service of the Commission. Working with the JRC will increase the University's research power and capacity to shape future research, policy and programmes at European and international level.



Merry Christmas from all at Buzz

Buzz would like to wish all at the University a Merry Christmas and a Happy New Year, we do hope you enjoy the festive period. Please note that the University is closed from Wednesday 24 December 2014 and reopens on Monday 5 January 2015.

University Carol Service
Monday 8 December, 6.15pm
Aston Webb Great Hall

The Carol Service is a Christmas celebration for all staff, students and families. There will be carols, festive readings and poems followed by mince pies. All are welcome, no tickets required.

Singaporean alumni donate £1 million to the University

Professor Kok Khoo Phua and Doreen Liu, founders of Asia's largest international scientific publishing company, have donated e-books worth over S\$2 million (approximately £1 million) for the new library. International Relations and DABE



held a reception for alumni and friends in Singapore to celebrate the donation and to highlight the University's engagement in Singapore. The event was hosted by Professor Richard Williams, Head of the College of Engineering and Physical Sciences, who said: *'We are truly grateful for this generous gift, which will allow us to deliver broader and more innovative ways to learn. Donations such as these are crucial if we are to continue to provide outstanding education and cutting-edge research that addresses global challenges and makes a real difference to people's lives.'*

Academic announced as Birmingham Poet Laureate

Adrian Blackledge, Professor of Bilingualism at the University's School of Education, was named as Birmingham's Poet Laureate for 2014–15 at a special event at the Library of Birmingham in October, marking National Poetry Day.



The Poet Laureate is an honorary position awarded annually to raise the profile of poetry across the city, and to inspire experienced and new poets to engage in writing and reading poetry.

Queen's Birthday Honours for University staff

Professor Sir David Eastwood was knighted by the Queen at Buckingham Palace on 9 October 2014 (pictured) for services to higher education.

Mrs Donna Willmetts, Facilities Manager for the College of Social Sciences, received her British Empire Medal (BEM) for services to higher education from Her Majesty's Lord-Lieutenant of West Midlands, Mr Paul Sabapathy CBE. The presentation took place in Muirhead Tower on 14 November 2014.



Dates for the diary

Vice-Chancellor's Open Forum
Wednesday 11 February, 12.30–1.30pm

**Elgar Concert Hall,
Bramall Music Building**

Join the Vice-Chancellor, Professor Sir David Eastwood, for his first staff address of 2015. All staff are encouraged to attend and further details will be circulated shortly.

Birmingham Professional Forum
Thursday 12 March, 2.00–3.00pm

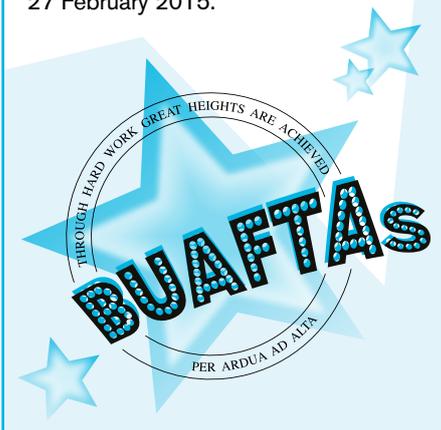
**Elgar Concert Hall,
Bramall Music Building**

This event is for all Professional Services colleagues (administrative, support and technical staff) from across the University. Introduced by the Registrar and Secretary, Lee Sanders, the forum is a great opportunity to hear from colleagues on a wide range of topical subjects for both staff and the University.

You have to be in it to win it!

This year, the Birmingham University Awards for Tremendous Achievement (BUAFTAs) chosen charity is the Birmingham Children's Hospital and we will be raising money for this valuable cause via the annual BUAFTA raffle.

More information on the raffle, the prizes on offer and how you can purchase tickets, is available at: <https://intranet.birmingham.ac.uk/staff/university/BUAFTAS/index.aspx>. The prize draw will take place on 27 February 2015.



transforming our campus

‘One of the most innovative investments in the country’

Your access to a wealth of knowledge – building your new library

Frequent visitors to the new library webcam page – www.birmingham.ac.uk/building/library.aspx – will have noticed that work on site is progressing well. The shape of the building is now clearly visible as the construction of the lower floors begins. However, you may not have realised that a quarter of the building has been already been constructed below ground level, including the Research Annexe.

The Research Annexe, which will be located on the lower ground floor, will bring together the University’s important heritage print collections, currently housed in several locations, many of them inaccessible to researchers. This area will be the realisation of a desire to bring more of the University’s collections into a single space and make them more accessible.

The Research Annexe will house and protect less frequently used items and there will be knowledgeable staff available to facilitate access to this research material. As well as providing a frequent retrieval service for requested items, there will also be a reading room. There will also be a dedicated research space on the first floor of the new library, which will include both a quiet reading room and a breakout space for improved researcher networking and collaboration.

Library Services staff are currently embarking on a project to define what material should be housed in the Research Annexe. There will be discussions co-ordinated through Heads of Schools to ensure the criteria adopted are appropriate to both the research and teaching needs of the Schools.

Items will be available for consultation or borrowing through a new request service offering frequent retrieval of material throughout the working day. Library Services staff are also considering how to enable researchers to directly access the Research Annexe shelves if they need to browse the stock. The scope of this service is still to be determined and agreed, and will depend on careful consideration of a number of practicalities including security, the arrangement of stock, staffing levels, and health and safety factors. Schools will be kept informed throughout the planning process.

Any comments or queries about the new library can be sent to newlibrary@contacts.bham.ac.uk.

CAMPUS CURIOSITIES



What is it?

Photograph of Hans Schwarz, 1954

Where is it?

Campus Collection of Fine and Decorative Art, Research and Cultural Collections

New research into the life and work of the artist Hans Schwarz has taken place at the Research and Cultural Collections (RCC) Study Centre over the summer. The outcome of this extensive research is the first published biography of the artist, *Hans Schwarz* by

Paul Upton. Schwarz was a painter, sculptor, illustrator and author, though he is best known for his portraiture. Drawing on the artist’s personal and professional archives and reproducing numerous works held by RCC, the author has pieced together the life of a man who was reticent about his life experiences and their influence on his practice.

The book was launched at the National Portrait Gallery in October with many of Schwarz’s sitters present.

Further information:

<http://rcc-redmarley.tumblr.com>

High Temperature Research Centre reaches the top

Construction of the new High Temperature Research Centre (HTRC) building at Ansty Park near Coventry reached a significant milestone recently, as key partners celebrated the 'topping out' of the building – the point at which a new building reaches its highest point.

Professor Jon Binner, Deputy Head of the College of Engineering and Physical Sciences (EPS), helped to mark the occasion by signing the final roof panel, which was then put into place on the roof of the development.

The Centre will be a unique casting, design, simulation and advanced manufacturing research facility, and will focus initially on the key aspects of investment casting relating to aerospace and other industrial sectors. It will enable production-scale research, closer technology readiness levels and experimentation to deliver rapid high-quality product and process innovation, and is scheduled for completion in spring 2015.

The HTRC will have a broad range

of casting and materials research and development themes. Businesses from a variety of sectors will be encouraged to explore the benefits of partnering with the University at the Centre in areas of expertise ranging from materials engineering to biomedical implants and manufacturing simulation and modelling.

Professor Binner, said: *'The new centre will build on the University of Birmingham's existing research base and bring a new capability to what we are able to do. Our experience in the fields of casting, materials, engineering and manufacturing research is held in very high regard already – and the dedicated facility will help us to build on this to benefit the manufacturing sector through research, collaboration and innovation. We are delighted to be able to celebrate this topping out milestone which brings us yet another large step closer to the Centre's opening and work beginning.'*

For more information visit www.birmingham.ac.uk/htrc or email htrc@contacts.bham.ac.uk.



The HTRC construction site at Ansty Park near Coventry



Nick Kay of Rolls-Royce, John Egerton of Mace and Richard Scarrott from Wates with (front) Professor Jon Binner, Deputy Head of EPS, signing a roof panel as the HTRC is topped out

Minister gets glimpse into the future at the Institute of Translational Medicine

A government minister recently paid tribute to the trailblazing Institute of Translational Medicine (ITM) during an official visit to see the construction site.

Greg Clark MP, Minister for Universities, Science and Cities, inspected the site after meeting senior representatives from Birmingham Health Partners (BHP) – Professor Sir David Eastwood, Vice-Chancellor of the University of Birmingham, Tim Jones, Executive Director of Delivery at University Hospitals Birmingham NHS Foundation Trust and Matthew Boazman, Director of Strategy at Birmingham Children's Hospital NHS Foundation Trust.

The ITM, located in the old Queen Elizabeth Hospital, will be delivered by BHP, bringing together clinical, scientific and academic excellence, and providing a world-class clinical research facility. Its vision is to use pioneering science to accelerate the delivery of personalised

health care. The Institute also aims to cure disease and save lives by applying transformative science and technology and by educating and training the healthcare workforce.

Mr Clark, who visited the site after attending the Conservative Party Conference in Birmingham city centre, said: *'I signed the City Deal with Birmingham and Solihull Local Enterprise Partnership, so it is now wonderful to see it go from paper to reality. It is one of the most innovative investments in the country, building on the strength of the city, its hospitals, university, and the population to really reinforce the reputation of Birmingham.'*

The Minister agreed that the ITM set the future standard in terms of combining science research and health care, and said: *'What a trailblazer this is for showing what local business and civic funding, combined with university research, can deliver for*



Vice-Chancellor Professor Sir David Eastwood at the ITM site with Greg Clark MP

the good of the nation.'

The ITM will act as the single access point for industry with regard to clinical trials and device evaluation. It will provide office space, networking facilities and events which bring together clinicians, researchers and industry in an atmosphere of innovation and collaboration.

Meet the RESEARCH

Birmingham academics are continually seeking answers, exploring the materials around us, displaying original thinking and developing innovative research that inspires and influences us. The University's research covers a wide variety of disciplines, many of which intertwine to offer solutions and provide new perspectives on the world.

Buzz spoke to academics from across campus about their current projects and what makes Birmingham a research success story.



Professor Monder Ram is Director of the Centre for Research in Ethnic Minority Entrepreneurship (CREME), currently

celebrating its tenth anniversary.

When Monder began his academic career conducting ethnographical studies of small businesses there was very little research into ethnic minority businesses. As the momentum of policy makers to encourage ethnic minority entrepreneurship gathered Monder developed a twin track approach to fill the research gap combining analysis of small business

management and the engagement of ethnic minorities in business.

CREME initially formed in partnership with a regional development agency, connecting academics with policy makers, and continues to maintain links with stakeholders nationally and internationally today. Monder leads the Enterprise and Diversity Alliance (EDA), an innovative network dedicated to the promotion of minority entrepreneurship, which connects academic thought with corporate and professional associations.

'It's a very exciting time for the University with diversity and entrepreneurship at the centre of many research strands. It is clear the institution has a commitment to

high-quality research and to make it matter and make a difference to the world. I am proud to put something back into the city and that work conducted by CREME is feeding into policy debates on ethnic minority businesses around finance and business support.'

Monder's current research considers the impact of new migrants, from Eastern Europe and Africa, running their own businesses in the UK. This qualitative research has so far reinforced the idea of migrant business owners as resilient and entrepreneurial, making a contribution to the economy and society.



Professor Michael Dobson is Director of the Shakespeare Institute.

Michael's connection with Birmingham began when he was supervised at Oxford by Professor Stanley Wells, who was then visiting from the Shakespeare Institute. In 2011, after one decade working in the US and another in London, he brought his expertise and passion for Shakespeare to the University. Currently Michael is working on two major research projects that revolve around his interest in Shakespeare's presence in different cultures and how communities

invest in his works.

The first is a book, due in 2016, focusing on the Shakespeare canon's role in the creation of different national theatres worldwide. It explores how Shakespeare has been crucial to the making of different collective identities both locally and globally.

The second is a book about the digitally-animated film adaptation of *As You Like It*, using visuals based on South-East Asian shadow puppets, on which he is working with colleagues in Singapore. This film will open up Shakespeare to new Asian audiences and encourage engagement with his works.

'The Shakespeare Institute produces

an extraordinary collective momentum among its research community: it is a house full of people, close to a great theatre company, who are all thinking about Shakespeare and his place in the world. It has access to some of the best Shakespeare materials anywhere, including its own library, which among much else contains the entire archive of Kenneth Branagh's Renaissance Theatre Company. Having such resources at your fingertips and working within the region that gave Shakespeare to the world is part of what is so appealing about being at this University.'

PIONEERS



Professor Éva Valsami-Jones is Director of Research for the School of Geography, Earth and Environmental Sciences (GEES) and

Director of the National Environmental Research Council (NERC) funded Facility for Environmental Nanoscience Analysis and Characterisation (FENAC).

Éva's research looks at identifying mechanistic evidence for the toxicity of

nanomaterials; she has also developed methodologies to label such materials, so they can be traced initially in experimental systems, and, eventually, in the environment. She is currently coordinating the flagship European project NanoMILE, which aims to take a fundamental approach into understanding the mechanisms of toxicity by nanomaterials, to be able to inform industry and regulators. Through industrial collaborations Éva is also hoping to design safer nanomaterials for use in the future.

'I am fascinated by what makes material

surfaces reactive, and all the implications this may have to everyday life, from medicine to industrial applications and all the way to everyday products. When surfaces become smaller and smaller and eventually reach nano-dimensions there is the potential of quantum properties modifying surface reactivity and turning chemistry into "magic"; however if materials become toxic then magic turns into witchcraft.'



Professor Gavin Schaffer is Director of Postgraduate Studies.

Gavin specialises in the history of racism, discrimination and immigration in the UK.

His research on the Immigrants Programmes Unit, which was set up in 1965 by the BBC in Birmingham to provide television content for Asian immigrants, was recently published in the book *The Vision of a Nation: Making Multiculturalism on British Television*.

'Being based in Birmingham gives me

the ability to engage with diverse communities and access key resources in the city. I feel like I am situated at the centre of an ongoing discussion on the development of a multicultural Britain. The University itself has produced a wealth of historically significant work around multiculturalism such as that by Professors Stuart Hall and Paul Gilroy and I am lucky to be able to build on this research.'

Working with an Arts and Humanities Research Council (AHRC) training grant, Gavin led a team of 30 postgraduate students to link research with community

learning and development projects, and has forged partnerships with several regional arts organisations to create a variety of exciting ventures. For example, one group of Gavin's students recently connected with BBC West Midlands, designing a new WW1 exhibition in the Mailbox.

His next piece of research considers the social and cultural consequences of Irish immigration in post-war Birmingham, specifically in the context of post-war racial tensions; taking the form of a series of articles and a new archive of oral testimony.



Professor Uta Noppeney is Director of the Computational Neuroscience and Cognitive Robotics Research Centre.

Uta leads the University's Computational Cognitive Neuroimaging Group, which aims to unravel the neural mechanisms and computational operations that enable the human brain to acquire, represent and

retrieve knowledge about our multisensory environment. Current research by the group investigates how the human brain generates a coherent interpretation of the world from the sensory signals with which it is bombarded.

'The University has a large community of human systems, cognitive and computational neuroscientists that combine a variety of methodologies. This provides excellent opportunities for collaborations and interdisciplinary

exchange. In particular, the recently established Centre for Computational Neuroscience and Cognitive Robotics allows experimental neuroscientists to meet with computational neuroscientists.'

The group's most recent research is the first to suggest that the brain arbitrates between sensory integration and segregation optimally by computing multiple perceptual estimates simultaneously at distinct levels of the brain's nervous system.



Professor Hisham Mehanna is Director of the Institute of Head and Neck Studies and Education (InHANSE).

Hisham's research has a focus on translational medicine, which is the transfer of scientific knowledge to the treatment of patients, investigating drugs approved for other uses e.g. psychiatry or antibiotics

to treat infection that could be used to fight head and neck cancer. This is beneficial as the drugs are already approved for use so could quickly be made available for the treatment of patients. Clinical trials for five drugs will be set up next year, working with the Queen Elizabeth Hospital Birmingham and Get Ahead charities.

'Collaborating with colleagues in the NHS and working with partners across

Europe on multi-centre trials provides a greater opportunity for success in treating head and neck cancers.'

The human papilloma virus (HPV) is a leading cause of head and neck cancers and is fast increasing. The University is leading internationally on research into the virus and Hisham's involvement in a HPV super group is resulting in top researchers and clinicians sharing knowledge and expertise in this field.



Professor Lisa Bortolotti is based in the Department of Philosophy.

Lisa's research focuses on the philosophy of psychology and psychiatry; she sees the role of a philosopher as that of a rigorous thinker who plays a part in society's progress and as such wants her research outcomes to actively

contribute to making people's lives better. The European Research Council are funding her current project, PERFECT (Pragmatic and Epistemic Role of Factually Erroneous Cognitions and Thoughts), which will consider the possibility that irrational cognitions such as delusions, can have a positive function to play. Although a counterintuitive thesis, it could have important implications on existing theories and symptoms management in clinical settings, and be instrumental in

challenging the stigma associated with mental illness.

'The University is a very research-oriented, outward-looking institution that promotes interdisciplinary initiatives and encourages scholars to share their research as widely as possible. Because of that, I have always received excellent support in preparing grant applications, planning my research and organising public engagement events.'



Professor Nicholas Wheeler is Director of The Institute for Conflict, Cooperation and Security (ICCS).

Nick has developed an interest in the security dilemma and the challenge of building trust between adversaries, particularly those with nuclear capabilities. Recently he has begun to consider the psychological dimension, how trust, deception and empathy relate to the challenge of building trust and cooperation in international relations.

The relationships and the building of trust between Russia and the USA,

India and Pakistan, and the USA and Iran will feature in Nick's book *Trusting Enemies*, which will be published next year by Oxford University Press funded by an ESRC (Economic & Social Research Council) and ARHC (Arts and Humanities Research Council) grant. Nick has also recently worked within one of the University's strategic priority regions for collaborative research, Brazil. In 2012 he worked with Dr Matias Spektor of the Fundação Getulio Vargas Foundation in Rio on a joint project researching the transformation of Argentine-Brazilian nuclear relations in the late 1970s and early 1980s.

'The ICCS is a platform for research

into global cooperation, which is as relevant as ever, as we tread the line between utopia and dystopia for humanity. With the outstanding researchers based at the ICCS, who have a wealth of expertise in different disciplines, we can develop new ways of thinking about security and international relations.'

Nick is about to begin a new ESRC-funded research project on Nuclear Ethics and Global Nuclear Governance working with Professor Heather Widdows and Dr Scott Wisor, Centre for the Study of Global Ethics, and Professor Anthony Burke, University of New South Wales, Australia.



Dr Jonathan Radcliffe is a Senior Research Fellow focusing on energy storage.

Before joining the University Jonathan was employed in Westminster, working on science innovation policies; during this time energy storage emerged as a hot topic for stakeholders in government and the energy industry.

'Energy storage is important when deploying new technologies that provide variable generation, such as wind and solar. We need effective ways to store the electricity produced until it is required.'

Jonathan helped to secure funding for a new Centre for Cryogenic Energy Storage, which is currently being developed, with the aim of understanding how such technology can be integrated into the current energy system. In spring a pilot

plant will open on campus, looking at power, electricity and heat networks, to put the theories around energy systems and storage into practice.

'There is an appetite among research councils to look to meet the challenges of society; this relies on multi-disciplinary projects such as this, to find the answers to problems. Birmingham is leading the way with in this field, offering practical solutions to issues.'



Making an IMPACT

The University has been conducting research for more than a century, in fact our ethos as a research-intensive institution stretches back prior to the Royal Charter of 1900, to 1836 when the Birmingham Royal School of Medicine and Surgery was founded.



Professor Paul Cannon OBE

During this time the University has produced groundbreaking and pioneering research that has impacted on the region, the UK and the world. The transfer of knowledge generated from our research to wider society is at the forefront of our vision.

The research conducted by the University has had a considerable influence on society from the developments of radar and microwaves, to progressions in health care such as the creation of pacemakers.

This significant contribution to the wider community is a trend that we aim to continue. Highlighted below are some of our recent projects that demonstrate the reach and impact of our research.

Advising governmental departments

Paul Cannon OBE, Professor of Radio Science in the School of Electronic, Electrical and Systems Engineering, became a member of the Defence Scientific Advisory Council (DSAC) in October 2014.

As a member of DSAC he provides independent advice to the Secretary of State for Defence. Combining his extensive industry experience, with specialist academic knowledge in radio propagation and radio environment problems, Professor Cannon is well positioned to inform policy.

Lifesaving health care

Professor Paul Moss, Head of the School of Cancer Sciences is the Chair of the Wellcome Trust's Ebola Trials Advisory Group. The group is tasked with making recommendations on applications received in response to the call for Ebola research proposals. The purpose of the research trials is to identify clinical interventions, including drugs and vaccines, with the potential to contribute to tackling the current epidemic in West Africa.



Professor Paul Moss



Professor Laura Piddock

The impact of drones

Academics from the College of Social Sciences, led by Professor Nicholas Wheeler, worked with a team of commissioners chaired by Professor Sir David Omand GCB, former Director of Government Communications Headquarters (GCHQ), on the University's sixth Policy Commission – *The Security Impact of Drones: Challenges and Opportunities for the UK*.

The Commission analysed evidence for the use of drone technologies, both civil and military, concluding that under proper regulation such technology can deliver significant benefits to the UK's national security policy and economy in the coming decades. The commissioners are working on an outreach project holding ongoing conversations with stakeholders in the UK and European parliaments.

National infrastructure

Leading experts from the University's Birmingham Centre for Railway Research and Education (BCRRE) will be supporting the new National College for High Speed Rail, which will have its headquarters in the city. The multidisciplinary team at BCRRE will offer training and development for the College's teachers, advising on best practice and providing access to high-quality facilities.

Action on antibiotic resistance

Laura Piddock, Professor of Microbiology at the University, was a part of a team that led the campaign for antibiotic resistance to be the focus of the Longitude Prize. Professor Piddock is also a Director at Antibiotic Action, an independent UK-led global initiative funded by the British Society for Antimicrobial Chemotherapy (BSAC), which works closely with the All Party Parliamentary Group on Antibiotics.

Focus on **The Institute of Advanced Studies**

The Institute of Advanced Studies (IAS) has transformed research collaborations between colleagues at the University since Professor Malcolm Press and Sue Gilligan began work on the Institute in June 2012. Through visiting fellows workshops and themes, IAS and addresses supports the urgent need to forge collaborations between disciplines, to raise our game in research and strengthen our external profile.



This month the IAS will host their 100th workshop, which will be organised by Sarah Jeffery. Events have attracted more than 300 external participants from universities, businesses, charities and government departments across the world. Each school in the University has led a workshop, which have ranged from 'Consent', 'Responding to Uprising: Urban Security Between Resilience and Resistance', 'Intelligent computation meets bio-medical research', to 'Hydrohazards', and 'Complaining about Medicine'.

DISTINGUISHED VISITING FELLOWS

IAS has hosted outstanding academics operating at the cutting edge of their disciplines; fellows have come from Europe, America, Brazil, New Zealand and Australia. Fellows inspire and work collaboratively with colleagues at the University; recent and forthcoming visits are highlighted below.

Dr Elizabeth Gardner from the Australian Centre for Blood Diseases, Monash University, visited earlier in 2014.

Professor Steve Watson, Cardiovascular and Respiratory Sciences said: *'It has been fantastic having Liz in the lab. Liz has made a number of significant contributions to both the Platelet and Translational Inflammation Groups, as well as establishing the basis of collaborations for grant applications with other groups in the in University. We are extremely fortunate to be able to host leading academics in this way.'*

Professor Becky Loo, University of Hong Kong will visit in June 2015. She has an established track record of leading and participating in cross-disciplinary research, which is ideal at a time when the University has collaborations between the Business School, Engineering and Physical Sciences and Geography.

Professor Jeff McMahan, Rutgers, New Jersey was a Distinguished Visiting Fellow for the Saving Humans Theme and is one of the most influential philosophers writing on the ethics of war today. Professor McMahan's style combines great philosophical rigour with clarity and accessibility. In May he gave a public lecture 'The Ethics of Humanitarian Intervention, with Comments on Syria.'

Professor Geoff Eley, Karl Pohrt Distinguished University Professor of Contemporary History, University of Michigan is an internationally renowned scholar who will be visiting in June 2015. Research interests includes German, British and global history, nations and nationalism and the relationship of history to theory and the social sciences.

THEMES OF RESEARCH

Thematic research generates collaborative research grant proposals, public lectures, seminars and joint publications, such as those outlined below.

Professor John Bryson and **Dr Lauren Andres'** theme 'Regeneration Economies' draws to a close in April 2015 marked by a policy workshop with our project partners in Chicago. There will also be a launch for two books, including *A Research Agenda for Regeneration Economies*, which will form part of a series linked into the outcomes of our themes.

'The Politics of Sport', led by **Dr Jonathan Grix** (pictured below), will launch in December and 'Trust', led by **Professor Jane Raymond** and **Professor Nicholas Wheeler**, in September 2015.



COLLABORATING WITH COLLEAGUES

At the announcement of the formation of the Birmingham Institute of Forest Research (BIFoR), IAS organised cross-institutional consultations led by Professor Rob MacKenzie. In 2015 we will welcome as an IAS Distinguished Visiting Fellow **Professor David Ellsworth**, University of Western Sydney, to develop our work on Free-Air Carbon Dioxide Enrichment (FACE) experiments.

In March Andréa Edwards, Director of International Development and Mobility, introduced a public lecture, 'Higher Education in Brazil: Evolution and Challenges', from our IAS Distinguished Visiting Fellow **Professor Said Sidki**. Professor Sidki is one of the most prominent Brazilian algebraists, founder of the biannual Escola de Algebra and a Member of the Brazilian Academy of Sciences.

Birmingham Business School's **Centre for Research in Ethnic Minority Entrepreneurship (CRÈME)** has held workshops in Birmingham and Brussels. 'New Migrants, Entrepreneurs and Cities' facilitated discussions with small businesses, large corporations, academics and policy makers to plan the next phase of this timely, relevant and exciting research agenda.



Through our interaction with the global network the University Based Institute of Advanced Studies (UBIAS), the IAS is pleased to announce that **Dr David Gange**, School of History and Cultures, has been awarded a place on the first UBIAIS Intercontinental Academy. This is a unique opportunity to live and work with some of the most distinguished authorities on time who are eager to share their passion and expertise with the next generation.



ENGAGING WITH THE PUBLIC

The IAS regularly hosts academic events for public audiences; in the past year they have included:

In September researchers from across the University were joined by concussion experts for a discussion highlighting the problem of the damage done by repeated head trauma in sport and potential policy solutions. This was followed by a screening of Steve James' **Head Games: The Global Concussion Crisis**, a hard-hitting documentary about the devastating consequences of sports-related head injuries.



Invited by the Centre for Urban and Regional Studies, the distinguished planner, Professor Sir Peter Hall, who has sadly since passed away, delivered a keynote address, **HS2 or What? Transport Choices and West Midlands Regeneration**. Sir Peter drew on his long engagement with transport in urban development and discussed the challenges for the West Midlands with a panel of experts, chaired by Gisela Stuart MP for Birmingham-Edgbaston.

Marking the 75th Anniversary of the Kindertransport, colleagues from Theology, German Studies and Drama explored the academic study and representation of the Kindertransport in dialogue with practitioners and survivors in the workshop **The Kindertransport in History and Memory**. This moving and fascinating day culminated in a production of Diane Samuels' acclaimed play *Kindertransport* at the George Cadbury Hall by Drama and Theatre Arts students.

Dr Nadine Akkerman, IAS Distinguished Visiting Fellow and Professor Lisa Jardine presented **Challenges for Early Modern Women's History** at the Barber Institute. This lively event explored the development of archival research which offers new opportunities for excavating early modern women's history.



ENGAGING RESEARCH



ESRC
FESTIVAL
OF SOCIAL
SCIENCE



Academics from the University recently participated in the Economic and Social Research Council's (ESRC) 2014 Festival of Social Sciences. The Festival gave a fascinating insight into some of the country's – and University's – leading social science research. Through free workshops, lectures, debates, exhibitions, and seminars, academics demonstrated how social sciences research has a positive influence on society, the economy and politics. The events provided an opportunity to engage with the community from schoolchildren to politicians. **Danann Swanton** summarises the key events from the Festival below.

Religion and the city: conversations about Birmingham's religious diversity

Dr Chris Allen, School of Social Policy, led a conversation with the public on religion and the impact it has on the city. Topics included identity, education, gender, security and the media.

Shaping the 21st century public servant

Catherine Mangan, School of Government and Society, and Catherine Needham, School of Social Policy, discussed results of a year-long investigation, where certain skills, values and behaviours were identified as likely to be evident in effective public servants.

Taxing our wealth – do we have it right?

Aimed at 16–18 year olds, this event, hosted by Professor Andy Lymer, Birmingham Business School and Professor Karen Rowlingson, School of Social Policy, discussed whether we have the tax system right when it comes to taxing people's wealth.

Debunking myths about language and social media

Dr Caroline Tagg, Department of English Language and Applied Linguistics, explained how people communicate via social media and the impact of this on language, privacy and identity.

Superdiversity and recent immigration: pathways of settlement

Urban areas in the UK and beyond have seen significant changes in patterns of immigration, leading to profound diversification. Dr Susanne Wessendorf, Institute for Research into Superdiversity (IRiS), presented findings showing that diversity in this context has become commonplace. Rather than experiencing it as something particularly unusual, local residents see diversity as normal part of everyday life.

Reshoring Manufacturing: Energy, Skills & Competitiveness

Birmingham Business School's Dr Rachel Mulhall and Professor John Bryson identified and explored the drivers behind the reshoring of manufacturing production to the UK, with a particular focus on the West Midlands.

Birmingham Means Business

Birmingham Business School's academics showcased their work, giving attendees the opportunity to discuss and network on topics, such as entrepreneurship, regional development, effective marketing, reshoring, crisis management, resilience, innovation and sustainability.

The Birmingham Brain Challenge

Through an interactive display, Dr Suzanne Higgs, School of Psychology, encouraged debate about how people across the UK make decisions.

Social anchoring and settlement: adaptation and integration in Birmingham's new Polish community

Dr Aleksandra Grzymala-Kazlowska, IRiS, outlined the potential applications of a new way of thinking about 'social anchoring' in helping to both support adaptation and integration practice and shape research on this topic.

New Wave Social Science at the University of Birmingham

Birmingham Business School's Professor Fiona Carmichael and doctoral researchers in social policy, sociology, political science, economics, education, business studies and psychology presented their work to Birmingham's public via debates, presentations, posters and interactive displays.

Parliament and the Legislative Process

This workshop, designed for A level Government and Politics students and held by Dr Katherine Tonkiss, School of Government and Society, provided an in-depth exploration of the legislative process in the UK.

Crime, Policing and the Community

Crime is at the heart of policy debate and this event, hosted by academics from Birmingham Business School and the School of Psychology with guest speakers from West Midlands Police, focused on various aspects of crime and policing.



news+views

Our regular feature gives *Buzz* readers a quick tour of the latest University news hitting the headlines and activity among our online community.

in the news...

Many articles about Birmingham research and expertise appear in local, national and international press every day. Here are just a few examples of our recent highlights.

Vice-Chancellor Professor Sir David Eastwood was featured in *The Independent* about the future of higher education.

Lord Bilimoria was interviewed by the *Daily Mail* Online about his role as University Chancellor.

The University's new MOOC (Massive Open Online Course) 'Aviation Comes of Age' was discussed on BBC News Online.

Michael Roden, Principal of the University of Birmingham School and Professor Sir David Eastwood were featured in an article in *The Independent* about the about the new school. The school also featured in another *Independent* article about its aim to offer an enriched educational environment.

The University's work into reducing pollution in the river Danube in an attempt to save several rare species was featured in an article in *The Independent*.

Professor Nick Hawes featured on CNN with Bob the robot about Bob's work experience placement as a security guard at G4S.

Dr John Thomas was featured in *The Times* in an article concerning his research into the accuracy of weather forecasts.

The University's involvement in the drones policy commission report was widely covered. It featured on ITV News Online, *The Guardian*, BBC News Online, *Daily Mail* Online, *The Independent*, *The Telegraph*, the *Press Association*, *The Sun*, *The Daily Mirror*, BBC Radio 4, *The Birmingham Post*, *Russia Today* and *The Sydney News*.

Dr Raya Al-Dadah's research into metal-organic framework compounds was featured in an article on *The Guardian's* website.

Professor John Bryson was interviewed in *Forbes* about how 3D printers could transform the retail, supply and manufacturing sectors.

The University's partnership with Deltak Wiley to develop online Masters courses was featured in the *Times Higher Education*.

Dr Jackson Kirkman-Brown was interviewed in *The Times*, *The Times* Online and *The Times* (Ireland) about a study linking alcohol intake to the quality of a man's sperm.



feeling social...

The University is developing its digital content and utilising innovative ways to interact with the student population.

On A level results day in August a personalised video was sent to all students successful in gaining a place at the University. This generated a lot of interest and positive sentiment on social media. The email that was sent out with the personalised video was the most interacted email of the admissions cycle with 89.5% of receivers viewing the email. You can see a sample of what the A level results video looked like at: <http://myvideo.bham.ac.uk/?id=your-name> and view the feedback at: <https://storify.com/unibirmingham/personalised-video>.

The next personalised video is being emailed out to all offer holders to encourage attendance at an applicant visit day and put the University as their Conditional or Unconditional Firm Choice on their UCAS form.

Join the JoB online community

Follow us on Twitter at @unibirmingham.

If you use social media at work and would like to increase your visibility, find out more at: <http://intranet.birmingham.ac.uk/socialmediaguidelines>

If you would like to work with the press office, or find out more about how they can help you promote your research, email pressoffice@contacts.bham.ac.uk or call 0121 414 6029

Dr Sheelagh McGuinness and Dr Stephane De Brito Birmingham Fellows... in their own words



The Birmingham Fellows programme has appointed three cohorts of early career researchers since its inception in 2011. Birmingham Fellows are appointed to permanent academic posts with the first five years, having protected time to conduct high-quality research. Below two Birmingham Fellows from the first cohort tell *Buzz* their story...

Dr Sheelagh McGuinness is based at the Centre for Health Law, Science and Policy at Birmingham Law School.

I have a broad interest in health law, specifically the interplay between law and ethics in the regulation of health and reproduction, which can shape a person's ability to act in the world. I came to Birmingham as the University has a strong reputation in law and ethics, and there were a number of academics I was keen to work with.

Recently I completed a piece on the regulation of abortion and the interplay between different factions within the medical profession. I reviewed historical information but significantly also analysed the way that abortion services are currently being delivered.

Research of this kind is complex as it deals with such an intimate part of an individual's life. Yet it is significant to the ongoing debate around reproductive regulation in the UK. A woman's ability to control her own reproductive choices is a necessary feature of her ability to be a full citizen in any society.

I would like the next part of my research to develop our understanding of the emergence of abortion provision in the UK, specifically the independent sector, and what this can tell us about current models of abortion provision and the appropriate response to anti-abortion activities.

Being a Fellow facilitates the freedom for research, it is an excellent opportunity as an early career researcher to have the time to build up a research profile and have the space to think seriously about my research. Earlier this year I spent three months at the O'Neill Institute for National and Global Health in Georgetown, Washington to concentrate on specific research projects; something that would not have been possible if I was not a Fellow.]

Dr Stephane de Brito is based in the School of Psychology.

I am a co-investigator in a study funded by the European Commission looking at gender differences in antisocial behaviour. The research considers the environmental and neurobiological factors implicated in severe antisocial behaviour in young people, asking why there are more males than females displaying such behaviour. The project is multidisciplinary, using different techniques such as clinical interviews, neuropsychological assessments, neuroimaging, and examining genetic and epigenetic factors.

This research is conducted with a view to develop gender-specific prevention and intervention programmes. I would also like to continue to develop this programme of research into a longitudinal study, keeping the cohort of participants and following them up over a number of years. If you can understand the different factors present in those that desist from antisocial behaviour over time then you can identify factors that promote resilience and promote good outcomes.

The fellowship scheme gives you time to blossom as a researcher and the support offered is fantastic. When applying for funding I was provided with assistance from the University's EU office and funds from the School to travel to meet colleagues working on the project. I had the time and the room to focus on preparation for the grant application, which was an intense piece of work; this would have been more difficult to do if I had full administrative and teaching responsibilities.]