A multidisciplinary team of Brunel academics have secured £676k of funding from the Engineering and Physical Sciences Research Council (EPSRC) for a three-year project in collaboration with the University of Surrey. Led by Mark Lycett, Professor of Intelligent Information Management, the project brings together a research team that includes experts in the fields of Computing (Mark Lycett, Sergio de Cesare) Economics (Francesco Moscone, Brunel Business School) and Law (Dr Jane Marriott, University of Surrey).

The project addresses the Digital Economy and Financial Services research challenge by researching Small and Medium Enterprises’ (SMEs) access to credit. Studies indicate that SMEs faced a more challenging environment for accessing credit following the financial crisis of 2008 and subsequent recession. The need to improve the flow of credit to UK-based businesses is important, as the economic ‘choking’ effect of a lack of credit is well-noted and detrimental to economic recovery and long-term growth (as recently highlighted by the European Community).

The practical issue addressed is that information in-and-around credit decision-making is generally limited to company and individual track record: It ignores the position and importance of a company in its business ecosystem (the network or web of companies within which it operates). Credit access is hindered by a lack of understanding of that network of relations and the (in)direct effects that such networks have – refusing or restricting credit on the basis of an individual understanding may detrimentally affect others in addition to the company concerned. That is, credit lending decisions by finance providers may have unseen network effects and limit growth in unseen ways.

To address this issue, SCRIBE (Semantic Credit Risk Assessment of Business Ecosystems) uses emerging network and semantic technologies to provide innovation in the form of more accurate real-time credit risk assessment based on a dynamic understanding of the position and value of a company in relation to its business ecosystem. The scientific contributions of SCRIBE are that it:

1. Fuses the state-of-the-art in network analytics and credit assessment techniques to develop its ecosystem-based understanding (and associated marketing opportunities).
2. Develops, as a technical foundation, a state-of-the-art method to ‘harmonise’ data drawn from multiple sources, improving the richness of that data and preserving context in so doing.

Enabling the integration of relevant but disparate data sources has the potential to enrich credit lending decisions. Contextual preservation is important not only for network-based decision-making, but also for audit and the legal issues considered by the project. In the latter case, interesting challenges arise in relation to legal frameworks for data sharing, and the harmonisation of privacy and conceptions of corporate personality across different jurisdictions, for example ecosystems often span national boundaries. Professor Lycett commented:

"In evolving the state-of-the-art in credit risk assessment, the project allows us to develop our research related to network modelling and semantic integration in a manner that enables tangible impact across a range of industry sectors."
Welcome to Leading Edge

Welcome to the 30th edition of Leading Edge. As usual, it contains numerous examples of the success we are having in securing funding for our ideas from public and private organisations. In particular, we have been doing exceptionally well with the EPSRC in the last few years, and this has recently been recognised by the EPSRC, through an invitation from them to become one of their strategic partners. This will give us access to the latest thinking at the EPSRC and advance notice of programmes and calls.

Economic Recovery, continued from page 1

Commercial Engagement

The research will be undertaken in collaboration with commercial partners who will provide the required commercial and technical expertise necessary to: (1) Fully understand the current nuances of lending decisions; (2) provide relevant data to help in the modelling of business ecosystems and more accurate credit risk models; and (3) provide assistance in networking with further SME partners to both gather more data and examine the commercial potential of the results of the project on completion.

Collaboration will combine understanding of credit risk and assessment at both the transaction-level (via collaboration with Lloyds) and firmographic-level (via collaboration with Creditsafe). The project maintains a focus on impact through the development of novel information products and applications from a lender perspective (via collaboration with Lloyds and Creditsafe) and potentially across the lender/borrower/consumer perspective (via collaboration with Botang Ltd). David Knowles, Managing Director – Creditsafe Group commented:

“Creditsafe is very pleased to be working with the team at Brunel on this exciting project. As the world’s most-used provider of company credit reports we are very aware of the limitations that exist with regard to available data on many smaller enterprises. We look forward to seeing how this project can help fill that knowledge gap and as a result build even more accurate assessments of businesses and thereby enhance their access to credit.”

Research Impact

In the short-term impact is focussed initially on the commercial partners involved. The initial development of the network-based credit model and semantic integration hub will influence the commercial partners’ businesses (e.g. via information products/services designed around more accurate and integrated data, credit decisions based on eco-system models etc.). In the medium term (5-10 years) the impact will be on financial institutions and credit rating agencies, specifically in the way businesses are assessed and money is loaned. Over the same timeframe the project team foresee the economic model proposed here for credit will inspire other researchers who will adopt theory to explore its application to other economic problems. In the long term (10–25 years) it is envisioned that the deliverables of this project will have affected and rippled throughout the U.K. economy and affect government in their policy-making by basing their economic and legal policies and modelling also in the network effects that business ecosystems produce. Project partner, James Dobree of Botang Ltd commented:

“The move to network based credit assessment will have a dramatic effect on the way the credit market assesses companies. For this project to contribute to that shift will be a major benefit to the UK economy. The data and the technology exist to make this possible, now what is required are catalysts, like this project, to make it happen.”

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This invitation is based on data from the last three years, when we have secured £19.8M of funding from the EPSRC and have achieved a success rate of 38.3%. As a consequence of this very impressive recent record, we now have the 32nd largest EPSRC portfolio. Congratulations to all those that have contributed to this achievement.

In the next few weeks many of you will be invited to join one of the three new autonomous research institutes, in Energy Futures, Environment, Health & Societies and Materials & Manufacturing. These institutes will co-ordinate research in these areas, and seek to build funded multi-disciplinary research programmes. I think this is an exciting and important initiative by the University, and I would urge you to take some time to find out what is going on, and consider the idea of joining an institute if you feel you have something to contribute.

As we continue to improve our research culture, we will receive further external recognition of our progress.

With best wishes to you all

Professor Geoff Rodgers
VP (Research)
Transforming the Social Sciences through Dance

ESRC Funding Success for Dr Guido Orgs

Dr Guido Orgs (Department of Psychology) has been awarded a transformative research grant to the value of £200k from the Economic and Social Research Council (ESRC) to study how moving together makes us like each other.

The collaborative research project, led by Dr Orgs brings together scientists from Brunel University, UCL and Cambridge University and professional choreographers and dancers to conduct research on links between moving in synchronisation, group cooperation, and aesthetic perception in the performing arts.

Across all cultures, people dance, but little is known about what function dance and the performing arts fulfill in society. The research project addresses the idea that a core function of dance (and perhaps all performing arts) in society lies in promoting and communicating successful cooperation between people. Research in social psychology has shown that when two people meet, they become more like each other: They imitate each other's accent, adopt similar postures, gesture alike and gently sway together. Moving together can produce feelings of liking and affiliation between people.

Dr Orgs’ research team aim to use dance as a means to study how moving together is linked to liking each other. Similarly, observing other people move together may be enjoyable because it showcases successful social interactions. The research will involve “dance workshops” in which groups of people will be asked to learn short dance choreographies while cooperation and sympathy between performers and observers of the workshop will be measured. Motion sensors and neuroimaging methods will be used to identify brain mechanisms involved in movement synchronization and in watching other people dance together.

The research project aims to understand why we enjoy watching live performances or concerts, but can also lead to new movement-based treatments for psychological disorders such as obsessive-compulsive disorder and autism. In autism, for example, the ability to interpret other people’s actions can be impaired. Dancing in synchrony might help to improve such deficits in recognizing other people’s actions because it requires the performer to carefully monitor how movements are executed, improving both motor and perceptual skills at the same time.

On hearing of the success, Dr Orgs commented: “It is fantastic that we can bring together artists and scientists in this really exciting project to provide new insights into the role that dance and the performing arts play in society and to develop new therapeutical interventions.”

Dr Orgs’ proposal was selected for support and submission after an internal competition was held at Brunel. The research team includes Prof Johannes Birringer (Centre for Contemporary and Digital Performance, Brunel University), Co-Investigator Dr Daniel Richardson (Eye Think Lab, UCL), and Dr Annemieke Apergi-Schoute (Behavioural and Clinical Neuroscience Institute, Cambridge University). The research will be conducted in close collaboration with Choreographer/Dancer Matthias Sperling and Siobhan Davies Dance. The aim of the Transformative Research Call was to provide a stimulus for genuinely transformative research ideas at the frontiers of the social sciences, enabling research which challenges current thinking to be supported and developed.

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Politics and History at Brunel organises Pacific island international conference

Professor Matthew Hughes secured a US Marine Corps University Foundation grant of $5000 to fund his ‘Cultures in War: Combatants, Islanders and Settlers in the Pacific War and After’ conference that was held on the Pacific island of Saipan on 15 June 2014, the 70th anniversary of the American invasion of the island during the Second World War. The local Mariana island government provided the remainder of the funding, which covered speakers’ costs to come from other Pacific islands, Australia, Japan, Canada, the UK, and the USA. The event was a scholarly engagement with new ideas on the impact of the Pacific war on civilians and local peoples – hitherto left out of the accounts of the war – building on Matthew’s work on how armies treat civilians in times of war, and how race and culture affect combat. Teachers from local schools and colleges also attended the event, the aim being to use the conference also to help shape the local education curriculum.
Bi-lateral exchange grant forms collaborative links between Brunel and Hong Kong University

Dr Will Young (School of Sport and Education) has been awarded £5,990 by the Royal Society to develop collaborative links between Brunel University and Hong Kong University. The 12 month project is entitled “Examining how fear of falling can increase fall-risk in older adults”. Dr Will Young joined Brunel University in May 2013 as a Post-Doctoral Research Fellow in the School of Sport and Education. His research aims to find ways of improving mobility in older adults and people with neurological disorders (such as Parkinson’s disease).

Researchers at Hong Kong University have developed ways of using encephalography (a method of recording electrical activity in the brain) to determine if someone is self-conscious about the way they move. Older adults with fear of falling are more likely to consciously process their movements (a phenomenon termed ‘movement specific reinvestment’). This can disrupt the automaticity of well-practiced movements, leading to a fall. The current project looks to combine expertise in gerontology and motor control (Brunel) and Neuroscience (Hong Kong) to identify neural markers of fall-risk in older adults. Results will help develop future tools for falls prevention and rehabilitation. The project will also strengthen links between the universities and promote excellence in the field of healthy ageing.

Research into preventing falls in older adults

Continuing his research into improving mobility in older adults, the British Academy has awarded Dr Will Young £8,865 for a 12 month project entitled “Examining visual search behaviour as a function of movement specific reinvestment”.

FDAC to be rolled out nationally

On May 1st 2014 the final report of the Brunel University Family Drug and Alcohol Court (FDAC) Evaluation Project was launched at the Nuffield Foundation. It followed a five year two stage grant from the Nuffield Foundation (£504,393) with subsidiary funding from the Home Office.

The seminar was opened by the Children’s Minister, Edward Timpson, and the President of the Family Division, Sir James Munby. The evaluation found that FDAC was more effective than ordinary courts in tackling the widespread problem of parental substance misuse in care proceedings. Rates of substance misuse cessation were higher for FDAC than comparison parents. There was a higher rate of family reunification amongst FDAC parents who had stopped misusing and recurrence of neglect and abuse was lower in the FDAC sample at one year follow-up. The first stage evaluation had earlier demonstrated potential cost savings to courts and local authorities. However, in cases where reunification was not possible, FDAC was not quicker than ordinary courts in placing children in alternative permanent families.

The FDAC model is radically different from ordinary care proceedings as it aims to treat parental problems as well as to adjudicate. The approach has gradually been gaining support. Last week marked a huge step forward. Sir James Munby wrote in his latest “View from the President’s Chambers (no.12)”, “FDAC works. FDAC is a vital component in the new Family Court. I want to see FDAC rolled out across the country in every Designated Family Judge (DFJ) area”. The significance of this shift in family justice cannot be over-estimated for parents and children.

Many challenges lie ahead. Implementation will be dependent on the full support of Children’s Services and closer working between adult social care and substance misuse services. Yet innovation is always difficult at times of austerity. There are challenges in making a treatment model fit with the shorter timescales for care proceedings introduced in the Children and Families Act 2014. But there are also new opportunities. The Department for Education (DfE) has committed funding to develop FDAC in different parts of the country and to consider widening its scope to address domestic violence and mental health problems. It is exciting to think that the FDAC evaluation has contributed to these developments by providing an evidence base to support a change in practice and policy.

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New archival publications in light metals research

Light-weight materials, including light metals, are among focus research areas of Brunel University and more specifically the dynamically developing Brunel Centre for Advanced Solidification Technology (BCAST). Active publishing is one of the priorities and important outputs of academic research. In addition to research papers in peer reviewed journals and conference presentations, archival publications like collection of papers and textbooks are a useful means of preserving, generalising and communicating the accumulated knowledge in selected areas.

Professor Dmitry Eskin (BCAST) joined Brunel University in 2011. A well-known author of 4 monographs on various subjects of aluminium alloy design and processing published by leading publishing houses, Professor Eskin has in the last two years added to this list.

In 2012 Professor John Grandfield of Grandfield Technologies (Australia) and Professor Dmitry Eskin were commissioned to select and edit a collection of best papers to have appeared over 40 years in Light Metals proceedings published annually by The Minerals, Metals and Materials Society of America (TMS). This work encompassed reading and critical assessment of 1160 papers published since 1971 (139 papers have been selected) and their arrangement in the 10-chapter layout of ‘Essential Readings in Light Metals’ that follows the technology from melting through melt processing to casting and safety issues. The result is a complete overview of cast shop technology that can serve as a long-lasting reference. One more unique feature of this publication is an accompanying CD with electronic versions of the selected papers, many of which have not been electronically available before.

Recent Publications

More recently, both authors have published a long-awaited monograph titled ‘Direct-Chill Casting of Light Alloys: Science and Technology’. This 410-page book does not have analogues in Western literature and is in great demand from casting industry and research centres. The book was published in 2013 by John Wiley and Sons and covers the entire technological chain of the main casting process in light-metal industry, from liquid metal preparation and alloying to casting and post-casting processing. The book also contains essential fundamentals on structure formation, grain refining, defect control, modelling and computer simulation, and economics. ‘Direct-Chill Casting of Light Alloys’ is written in scientific but practical language that enables technicians, engineers and researchers to apply the latest science and technology to solving current challenges, advancing the field, and creating safe and sustainable commercial operations. The book was presented to a wider audience at the TMS Annual Meeting in San Diego (USA) in February 2014. This is the second book by Professor Eskin on direct-chill casting - the previous one ‘Physical Metallurgy of Direct Chill Casting’ (CRS Press, 2008) was dedicated to the fundamentals of the process and material-science aspects, and proved to be the must-to-have for applied and academic researchers and engineers working in this area.

Future Publications

Further publication plans include a new title ‘Ultrasonic Treatment of Light Alloy Melts’ by Georgy Eskin and Dmitry Eskin. This book describes the fundamental and applied aspects of one of dynamically developing means of melt processing, i.e. ultrasonic cavitation. BCAST is very active in this field of research with four projects currently running under the leadership of Professor Eskin funded by FP7 (EU) and EPSRC (UK). The book is due in July 2014 (CRC Press).
BC.SHaW PhD Researcher Leads Workplace Physical Activity Trial with Macmillan Cancer Support, Ergotron and Public Health England

Jennifer Hall, BC.SHaW (Brunel Centre for Sport, Health and Wellbeing) PhD researcher, is set to examine how different workplace behaviours and behavioural contexts influence how, when and why people are physically active and inactive throughout the day, and potential strategies to improve peoples’ physical activity profiles. A sit-stand workstation (desk) study within the UK office at Macmillan Cancer Support and at Public Health England offices has been agreed for the implementation of a randomised controlled design for measuring the contribution of sit-stand workstations to daily physical activity. The proposed research also includes a substantial qualitative component to explore and understand the processes by which sit-stand workstations can be effectively implemented into working practices and to understand attitudes to, experiences of and long term compliance with such desks. The research team have been successful in securing a grant of £19,708 from Macmillan Cancer Support to conduct the research and Ergotron will supply and install all sit-stand workstations to the value of £21k. The research will take place between March 2014 and January 2016. Jennifer’s PhD is funded by a University bursary and is supervised by Dr Louise Mansfield, Professor Tess Kay and Professor Alison McConnell.

Public Health England commissions BC.SHaW and HERG researchers to inform the National Implementation Framework on Physical Activity for Health

Two rapid response reviews - funded by Public Health England (PHE) to the value of £10k - will inform the development of Public Health England’s National Implementation Framework on Physical Activity for Health. Dr Louise Mansfield (School of Sport and Education), Professor Tess Kay (School of Sport and Education), Dr Catherine Meads (HERG), and Dr Jayne Caudwell (University of Brighton) reviewed evidence on physical activity participation among lesbian, gay, bisexual and transgender (LGB&T) communities in England. The report found an absence of good quality evidence on physical activity participation rates of LGB&T communities or on the most effective interventions for increasing physical activity amongst LGB&T groups. The review concludes that a question on sexual identity and gender identity needs to be included on all large scale population surveys as well as in local monitoring and evaluation of physical activity services. Professor Ian Rivers (School of Sport and Education) reviewed evidence on homophobic and transphobic bullying in the UK. His report emphasises that while there has been a great deal of research focusing on the ways in which LGB&T young people are victimised at school, there remains a dearth of independent evidence to show the effectiveness of interventions and training programmes currently on offer in the UK.

Architectural Atmospheres: the impact of digital visualising technologies on architects

The two year ESRC funded project Architectural Atmospheres, has recently come to a close. The project, led by Gillian Rose (Open University) and Monica Degen (Brunel University), focused on analysing the ways in which computer generated images are used by architects today to design, visualise and sell their buildings in a competitive global market as they have become increasingly concerned with creating recognizable, ‘branded’ products in the form of buildings and public spaces. The fieldwork took place in the offices of several architects and two visualising studios who were involved in a large urban redevelopment project in Doha, Qatar. The research team explored, through ethnographic observations, interviews and visual archives, the role of digital visualisations in relation to both the design process and to what sorts of urban places are pictured.

It was found that these digital visualisations are understood by architects and visualisers to be a powerful means to generate certain types of atmosphere and mood to convey who will use these buildings and how and what it will feel like to be in a building or urban space once it has been built. Thus a good deal of attention is paid to what sort of place these images evoke, especially in terms of the sensory experience of place.

Architects and visualisers thus had to engage with each other, and with the client’s wishes, to an unusual degree, and the visualisations were the means by which they did this. This entailed some change to their design practice; more significantly, it entailed engaging with a complex and extensive system of storage, versioning and commenting on different versions of these highly malleable and mobile digital visualisations.

The key findings of the project were made available to the general public at an exhibition entitled ‘Architectural Atmospheres: Digital Placemaking in the Twentyfirst Century’ in August 2013 at the Building Centre, London; and further shared in a workshop which brought together architects, visualisers, placemakers and planning advocates. Since then the research team has also been invited to contribute to the event Future City: Doha, organised by Doha by Qatar Museums Authority in conjunction with Liverpool Biennial, as part of a panel exploring the different ways in which urban transformations can be imagined and realised.
Dr Astrid Swenson’s first book shortlisted for prestigious prize

‘The Rise of Heritage: Preserving the Past in France, Germany and England, 1789-1914’ authored by Dr Astrid Swenson (School of Social Sciences) and published by Cambridge University Press in 2013 - has been shortlisted for the Royal Historical Society Gladstone Prize for best first book on a historical subject which is not primarily related to British history. The Royal Historical Society awards a number of prizes each year to recognize outstanding historical scholarship and achievement. In the book, Dr Swenson investigates the origins of our fascination with heritage. She follows the ‘heritage-makers’ from the French Revolution to the First World War, revealing the importance of global networks driving developments in each country. The book connects high politics and daily life and uncovers how, through travel, correspondence, world fairs and international congresses, the preservationists exchanged ideas, helped each other campaign and dreamed of establishing international institutions for the protection of heritage.

Lively Debate on Surveillance Society and ‘the State vs Media’

Investigative journalist Duncan Campbell joined Michael Smith (former army intelligence officer and author) at a public seminar on 5th March at Brunel. Organiser, Dr Lesley Henderson, Co-Director of the Centre for Culture, Media and Regulation commented ‘This was a thought provoking event on a contentious issue. Revelations about mass surveillance raise important questions of privacy and security. There was great public interest with a large audience of students, staff and members of the general public including local school students’.

‘Culture Clashes: Communication Challenges in a Changing World’ is funded by Brunel’s Research & Knowledge Transfer initiative. The final seminar ‘Margaret Thatcher’s Legacy for Broadcasting’ will be held in Autumn term. Speakers include David Eistune (Channel 5, BskyB, OpenDemocracy.net, Broadcasting Policy Group); Professor Steven Barnett (House of Lords Select Committee on Communications) and television and public services (AHRC funded) writer/researcher Patricia Holland.

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Changing the game - again! Brunel research breaking down barriers to girls being active

Once again sport researchers from Brunel University are helping to remove barriers to girls being active in sport and are challenging restrictive views about girls’ capabilities. Recent research by Laura Hills and Amanda Croston from the Brunel Centre for Sport, Health and Well-being (BCSHaW) and Sara Horne and Bill Baltzopoulos from the Centre for Sports Medicine and Human Performance (CSMHP) has led to national policy change in football, with the FA raising the age limit at which boys and girls can play competitive football together to U16. This is the latest in a series of incremental rises since Brunel researchers first worked with the FA on their national mixed gender sport policy in 2008 when the age limit for mixed football was U11. Brunel’s research has consistently highlighted the benefits that both boys and girls experience and ensured that girls can play their full part in the country’s largest sport.

Psychologist contributes to post-Fukushima training

Robin Goodwin (Psychology) was one of two UK representatives nominated by the Foreign & Commonwealth Office to attend the International Atomic Energy Authority Technical Meeting on strengthening research in radiation disaster medicine (Fukushima Japan, May). His presentation focused on his ongoing research on psychological responses to radiation risks following the Great East Japan earthquake.
Evaluating the Impact and Outcomes of EU SSH Research

IMPACT-EV (Evaluating the Impact and Outcomes of EU SSH Research) is a four-year project funded by a €2.3 million grant under the European Union’s 7th Framework Programme, and HERG’s Dr Claire Donovan is Co-investigator in a consortium spanning eight European countries.

The European Commission invested €50 billion in funding academic research through its 7th Framework Programme (2007-13) and has invested a further €70 billion in its Horizon 2020 scheme (2014-20). It is vitally important for the Commission to demonstrate to EU citizens the impact of its research investment, and so it is seeking the most rigorous approaches to robustly evaluate the outcomes of individual grants and to rigorously select the most promising future research and researchers to fund.

The main objective of the IMPACT-EV project is to develop a permanent system of selection, monitoring, evaluation and comparison of the impact and outcomes from European social sciences and humanities (SSH) research taking into account the latest quantitative and qualitative evaluation techniques, identifying new ways of implementing them, and exploring new standards and indicators that complement existing impact assessment processes. The IMPACT-EV project will contribute to defining standards of quality for impact assessment, and seeks to promote the enhanced scientific, policy, and social impact of SSH research in Europe.


At the Heart of Government

Professor of Economics Nauro Campos (School of Social Sciences) is this summer returning to Brunel after spending valuable time in Whitehall, City Westminster, at the very heart of the government and in the heat of crucial policy discussions about the use and fostering of academic research. Professor Campos was seconded to the Office of the Chief Economists of the Department of International Development (DFID).

Professor Campos was responsible for a large number of important research projects. He led government teams and was responsible for the design and implementation of various research programmes such as: DFID-IZA GLM Research Programme on Labour Markets in Low Income Countries; DFID-CEPR PEDL Research Programme on Private Sector Development in Low Income Countries; DFID-IDRC (Canada)-William and Flora Hewlett Foundation Research Programme on Growth and Economic Opportunities for Women (GrOW); Emerging Powers Research Programme, Brazil in Africa; Research Programme on Growth and Institutions; DFID-MF Programme on Macro Research for Development and ESRC-DFID Economic Growth First and Third Calls. He also prepared a policy note on Investment Promotion Policies and Foreign Direct Investment, which was cited in the White Paper on “Trade and Investment for Growth,” Department of Business, Innovation and Skills (BIS) and authored the pilot review in the very successful Systematic Evidence Reviews Programme.

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Remembering the Greek Sovereign Debt Crisis

In the autumn of 2011, following a Brunel research fellowship, Nicolas Argenti of the department of Social Anthropology was awarded an ESRC grant for the project ‘Remembering Absence: Catastrophe, Displacement and Identity Among Chiots and the Chiot Diaspora’. The grant provided him with two years of leave during which he conducted research on the Aegean island of Chios, focussed on cultural memories of a massacre that took place there in the 19th century. It had hypostasised the possibility that social memories of political violence have the potential to transform our understanding of historical time, making of the massacres of 1822 a means of addressing much more recent experiences and social formations. So it was with no little consternation that Nicolas found himself on the island just as it was being thrown into the midst of the financial crisis, and that in trying to make sense of these new developments islanders were referring to past episodes of political violence that had befallen the island, including the massacres of 1822, the 1922 exchange of populations between Greece and Turkey, and the occupation of the island by the Germans in WW2. Nicolas Argenti is now writing a monograph to explore the effects of the sovereign debt crisis on collective memory in Chios.

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BEATS-2014

The 3rd international conference on Biomedical Engineering and Assistive Technologies (BEATS-2014) was held in Chandigarh, India, during 14-15 February 2014. Chandigarh is a city in northern India. It was the first planned city in post-independent India and was designed by the French architect Le Corbusier. Professor Asoke Nandi, Head of Electronic and Computer Engineering, was the Guest of Honour and was invited to deliver the keynote lecture, entitled “Analysis of EEG and fMRI data during naturalistic and continuous music listening.”
Brunel Research Initiative and Enterprise Fund for turbocharger research

Dr Apostolos Pesiridis from the School of Engineering and Design has been awarded a Brunel Research Initiative and Enterprise Fund (BRIEF) grant (£15,000) to research turbocharger aerodynamics and heat transfer effects on the performance of the modern turbocharger. The project will last for 12 months.

Air charging systems (with the vast majority of these being turbochargers) are widely used in both passenger and commercial vehicle applications to increase power density, improved fuel economy leading to significant emissions reductions. The development of turbochargers to the current state-of-the-art has been of primary importance in enabling the automotive industry to cope with the ever stringent emissions demands (moving from Euro 5 to Euro 6 by 2014). This is placing ever increasing demands on turbocharger manufacturers, in an effort to increase the specific power capacity and thus enable engine downsizing to be achieved. Although investment in turbocharger technology has made it possible to overcome issues related to reliability and cost, research is much needed in the area of design, testing methodologies and model development. Computational codes are used by engine manufacturers to predict its performance and size of its components; prediction accuracy is crucial in this process.

The project will deal with physical phenomena of primary interest in recent turbocharger research including pulsating flow turbocharger aerodynamics and the effects of heat transfer which cause a mismatch when fitting the turbocharger performance maps into engine codes which is detrimental to the overall engine performance prediction. The aim is to use the Centre of Advanced Powertrain and Fuels (CAPF) capability on engine testing to validate results of turbocharger performance under these conditions and to assist in the building of more accurate design methodologies so important to industry in rolling out new products at an accelerated pace without the need for the current extensive modelling and experimental optimisation processes.

Dr Pesiridis brings in expertise in the area of turbomachinery which was an element missing in the CAPF capability. Since Boosting and Exhaust Energy Recovery Systems are one of the two key technological areas addressing the pressing need for downsizing over the next 10-15 years the incorporation of such a project in CAPF`s portfolio is important in order to put CAPF on the map as a centre which is able to offer on-engine, forced induction and exhaust/waste heat energy recovery systems research on top of its well established combustion and fuels research.

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No time for waste in Brunel’s hydrogen economy

EngD student Tygue Doyle, from the Centre for Energy and Built Environment Research, has attended the International Discussion on Hydrogen Energy and Applications (IDHEA) conference in Nantes, France, where he presented his work on ‘The pivotal role of solid state hydrogen storage in advanced waste-to-energy systems’. The conference is used as a platform to present research and commercial advancements in the field of hydrogen energy, and was attended by students and commercial representatives from around the world. Research at the Centre for Energy and Built Environment Research at Brunel is investigating the performance of an eco-innovative waste-to-energy system using fuel cells and hydrogen storage to produce heat and power in a distributed generation network.

Gareth Dale awarded grants from The Daiwa Foundation and the Asia Pacific Network for Global Change Research


Putting it into Words

In April 2014 Dr Lindsey Nicholls, School of Health Sciences and Social Care, was invited to give a keynote address to the Occupational Therapy Association of South Africa, Cape Town. Her paper ‘Putting it into Words; reparation, racism and reciprocity’ was based on an ethnographic project that explored the psycho-social work of occupational therapists in two hospitals, London, United Kingdom (UK) and Cape Town, South Africa (SA). Dr Nicholls suggested that therapists, although busy ‘doing’ tasks with clients, were emotionally sensitive to communication and able to reflect on the reciprocal exchange (recognition) that occurred when working in intimate care situations. The emphasis of this relational work shifted from the ‘psycho’ to the ‘social’; UK data emphasised how therapists’ early family histories may have influenced their need to care and/or express their less conscious reparative desires. The SA study highlighted the importance of understanding, consciously and unconsciously, the social political context of therapists and clients’ lives. Her hypothesis was that authentic emotional work (i.e. care) moves beyond that of ‘reparation’ to one of intersubjective reciprocity.

Is GPS really that accurate?

Research that monitors important infrastructure is being undertaken by Chris Brown in the School of Engineering and Design, along with colleagues from The Universities of Nottingham (Dr Xiaolin Meng), and Nottingham Ningbo China (Prof Gethin Roberts). The aim is to use GPS sensors remotely to monitor both large and small movements (less than 1mm) and vibrations of structures, and to determine any changes that occur over time. There have been monitoring campaigns on the Severn, Forth, and Humber suspension bridges that were built nearly 50 years ago, and yes - the work was also trialled on the London Millennium Bridge, ‘the wobbly bridge’. Quite small changes in structural behaviour can be monitored using this technique. The work has received funding from EPSRC, and from stakeholders such as bridge owners and operators, and is currently focussed in China where almost all new major infrastructure is instrumented with GPS.
Professor Rui Baptista - Brunel Business School

Rui Baptista joined Brunel Business School in September 2013 as the Chair in International Entrepreneurship. Rui was previously with Instituto Superior Técnico, University of Lisbon, where he was president of the Centre for Management Studies (CEG-IST). Rui’s research focuses on the economics of entrepreneurship and innovation. His work has been cited over 2800 times in Google Scholar, and over 500 times in Web of Science. He is an associate editor and member of the Editorial Board of Small Business Economics – An Entrepreneurship Journal, and a referee for many other international journals.

Rui has a Ph.D. from London Business School and has held positions with the Department of Social and Decision Sciences of Carnegie Mellon University (where he remains part of the adjunct international faculty) and the School of Public and Environmental Affairs at Indiana University. From 1999-2001 he worked for the Portuguese government.

Over the last decade, Rui’s research has been dedicated to uncovering the role played by human capital in successful entrepreneurship. While entrepreneurship is recognized as an important driver of growth and competitiveness, only a relatively small number of fast-growing new firms account for the lion’s share of job creation, while most new firms are born small and remain small. Also, while anecdotal evidence highlights the success of entrepreneurial college dropouts, extensive research suggests that education and experience – the basic tenets of human capital – are strong drivers of entrepreneurial success, and indeed play a significant role in the development of entrepreneurial clusters.

Rui’s new research endeavours focus on the potential for entrepreneurship to foster more inclusive growth. Recent trends in policy and social debates have highlighted rising income dispersion. Factors such as technological change, de-unionization and international migration are often mentioned as reasons for rising inequality, but little attention has been devoted to how entrepreneurship might affect income distribution. While entrepreneurship may provide an upward path in the income distribution for those who are successful, increasing levels of entrepreneurship may augment inequality by increasing the share of top income earners in a society, or by increasing the share of small firms paying low wages. A way to uncover the dynamics of this relationship is to compare labor market inequality across regions and industries.

Professor Baptista is open to research collaborations within and across disciplines, focusing on issues associated with entrepreneurship and industry/labor dynamics, lending his experience in working with econometrics in large data sets.

New Lecturer in Power Systems Engineering

Dr Ioana Pisica was appointed as a Lecturer in Power Systems within the Brunel Institute of Power Systems (BIPS) in March 2014.

In the recent years Ioana has been actively researching modern optimization techniques for power systems with distributed generation and FACTS devices, machine learning for power systems control, power quality and smart metering. Her current research interests focus on smart grids, power system analysis and control, dynamic electricity tariffs, smart metering and ICT infrastructures for future power networks. Ioana was also involved in agent based modelling and analysis of large amounts of data from smart meters and Phasor Measurement Units (PMUs).

She joined Brunel from University Politehnica of Bucharest, Romania in March 2011 as a research fellow within BIPS in order to work fulltime on the three year EPSRC funded project Advanced Dynamic Energy Pricing and Tariffs (ADEPT). The ADEPT project was led by Prof Gary Taylor as the director of BIPS and involved collaboration with the University of Oxford e-Research Centre and the Environmental Change Institute. The project aim was to investigate how the information potentially available from smart meters may be exploited to the advantage of both distribution network operators and the customers.

In the near future, Ioana plans to extend her research into digital substations by combining her expertise in artificial intelligence techniques with protection systems and communications standards for electric power networks.
Contracts Awarded Quarter 3
(1st February – 30th April 2014) £3,669,642

BCAST
Prof Dmitry ESKIN: European Commission - DOSHORMAT - Degasging machine for aluminium casting process based on ultrasound, £49,216
Prof Dmitry ESKIN: EPSRC - Ultra-Cast - Development of efficient and scalable ultrasound-assisted solidification technologies for manufacturing advanced metallic alloys, £238,610
Prof Zhongyun FAN (PI) Dr Ian STONE (Co-I): European Commission - RecyCIAl - High Shear Processing of Recycled Aluminium Scrap for Manufacturing High Performance Aluminium Alloys, £318,357
Dr Shouxun JI: Bronze Alu - Aluminium alloy - high pressure casting test, £50,191
Dr Hari-Babu NADENDLA: European Commission - AMS Copper - anti-microbial, self-cleaning copper composite coatings applied in metallic objects against infections transmission, £275,182

Brunel Business School
Prof Rui Baptista: British Academy - Entrepreneurial Clusters and Local Human Capital, £10,000

School of Arts
Dr Nicholas Attfield: British Academy - Revitalizing Twentieth-Century German Opera, £7,588
Ms Sarah Penny: Wellcome Trust - ‘Together We Refuge’: A fresh and international approach, using creative writing and dramatherapy to reduce female genital mutilation (FGM) in Kenya and the UK through maternal intervention, £5,000

School of Engineering & Design
Prof Wamadeva Balachandran (PI) Dr Nikolaos Bouglouris (Co-I): TWI Limited - Improved structural integrity through enhanced electron beam monitoring, £36,000
Prof Kai Cheng (PI) Dr Atanas Ivanov (Co-I) Dr Richard Bateman (Co-I): Korea Institute of Machinery & Materials (KIMM) (Additional Funds) - Development of the functional surface μ-texturing module with application to micromilling: design, analysis, performance testing and applications, £37,411
Dr Lu Gan (PI) Prof Wamadeva Balachandran (Co-I): TWI Limited - Signal processing, image analysis and feature recognition for long range ultrasonic testing (UT), £36,000
Prof Tat-Hean Gan: Technology Strategy Board (TSB) - UltraCleanGen - Ultrasonic prevention and removal of biofouling from marine electricity generators, £347,048
Prof Tat-Hean Gan: EPSRC - Qualinet: Automated in-line inspection and quality control of net shape powder metallurgy components using microfocus three dimensional x ray computed tomography imaging, £336,550
Prof Tat-Hean Gan: European Commission - HotPhasedArray (HitProbe) - High temperature pipe structural health monitoring system utilising phased array probes on TOFD configuration, £337,266
Dr Yunting GE (PI) Prof Savvas Tassou (Co-I): Mentor Graphics (UK) Limited - Design and Experimental Investigation of Organic/Steam Rankine Cycle using R245fa/Steam Working Fluid, £40,504
Prof Peter Hobson: Science & Technology Facilities Council (STFC) - Consolidated Grant Supplement, £1,371
Dr Zhaozhi Huang: The Royal Academy of Engineering (RAE) - Distinguished Visiting Fellowship Award - Hazard mitigation for steel & composite structures, £4,900
Dr Busayawan Lam: AHRC - Scaling up co-design research and practice: Building community-academic capacity and extending reach (phases 1&2), £9,825
Dr Valentina Stojceska: Technology Strategy Board (TSB) - KTP with Northumbrian Fine Technology Strategy - KTP with Northumbrian Fine Technology Strategy, £10,000

School of Health Sciences & Social Care
Dr Chris Parris: Barts and The London Charity - Construction of a cell library definitive in DNA repair pathways, £100,459

School of Info. Systems, Comp & Maths
Dr Elena Boguslavskaya: The Daphne Jackson Trust - Fellowship: A new integral transform to use for pricing American & European options, £45,744
Dr Laurence Brooks (PI) Dr Vishanth Weerakkody (Co-I) Dr Anastasia Papazafeiropoulou (Co-I): European Commission (Additional Funds) - eGovPoliNet - building a global multidisciplinary digital governance and policy modelling research and practice community, £4,420
Dr Andrea Capiluppi (PI) Prof Zidong Wang (Co-I) Prof Xiaohui LIU (Co-I): European Commission - EWATUS - Integrated Support System for Efficient Water Usage and Resources Management, £237,326
Prof Mark Lycett (PI) Dr Sergio De Cesare (Co-I) Dr Francesco Moscone (Co-I): EPSRC - SCRIBE: Semantic Credit Risk Assessment of Business Ecosystems, £676,567
Dr Arthur Money: The Royal Society - Supporting Patient-Practitioner Collaboration and Adherence via Mobile 3D Interior Design Technology, £8,570
Dr Arthur Money: The Association of Commonwealth Universities (ACU) - Travel Grant to Africa Health 2014 conference, £1,750
Dr Keming YU (PI) Dr Bin Wang (Co-I): TWI Limited - Data analysis and its interpretation for use in remaining life assessments, £36,000

School of Social Sciences
Prof Matthew Hughes: Marine Corps University Foundation Inc - Travel grant to organise conference on Saipan, £9,068
Dr Andre Szameit: British Academy - Gender Effects in Multitasking, £9,980

School of Sport & Education
Dr Pascale Kippelen: European Hydration Institute (EHI) - The effect of whole-body dehydration on exercise-induced bronchoconstriction, £4,202
Dr Ayodele Mansaray: London South Bank University - Impact Study of Participation in Arts Award, £2,500
Dr Louise Mansfield (PI) Prof Tessa Kay (Co-I) Prof Alison McConnell (Co-I): Macmillan Cancer Support - Sit-stand desk research to enable better support for people living with cancer, £19,387
Dr Charlotte Waugh: The Royal Society - 3D muscle architecture and fascicle gearing during childhood, £2,700
Dr Will Young (PI) Prof Mark Williams (Co-I): The Royal Society - Examining how fear of falling can increase fall-risk in older adults, £5,990
Dr Will YOUNG (PI) Prof Mark Williams (Co-I): British Academy - Examining visual search behaviour as a function of movement specific reinvestment in older adults during adaptive walking tasks, £8,865

Wolfson Centre
Prof Karnik Tarverdi: The Benlian Trust - Armenian post-grad student visit, £2,500

O n 12 May 2014 the Centre of Advanced Powertrain and Fuels (CAPF) of the School of Engineering and Design (SED) hosted a seminar entitled “Internal Combustion Engines: Future Technologies and Fuels”. The IAA (Impact Acceleration Account) funded event consisted of presentations by leading industry experts on automotive engine and fuel technology and their counterpart academics at CAPF. In addition, BP’s High-Octane, VW Passat CC demonstrator was displayed for the first time on the day outside the venue at the Hamilton Centre fitted with a Mahle 50% downsized (2.0 litre, 4-cylinder into a 1.0 litre, 3-cylinder) engine.

The seminar was funded as part of EPSRC’s Impact Acceleration Account (IAA) managed by RSDO. CAPF’s Dr Apostolos Pesiridis, the centre’s turbomachinery expert, applied for and received £3,108 towards organisation of the event as part of IAA’s Engagement activities funding.

On the day, approximately 50 delegates from across the UK - as well as numerous CAPF and SED academic members of staff, PhD students and research staff - had the opportunity to attend presentations by leading industry experts from across the UK and abroad. The topics covered most areas of CAPF’s research and broadly included gasoline engines, diesel engines, fuels and automotive turbomachinery. The latter is an area in which CAPF has started to expand into in the last couple of years by the addition to the team of Dr Apostolos Pesiridis who also delivered a presentation on a current advanced variable geometry turbocharging project run in collaboration with Imperial College London and industrial partners in which he is the technical project manager. Other CAPF members presenting were Professors Hua Zhao (CAPF Director, who introduced the proceedings and at the end of the day took delegates through a tour of CAPF’s extensive test facilities) and Alasdair Cairns who presented a topic on lubricant-induced pre-ignition in SI engines.

Delegates included engineers from Ford, Jaguar Land Rover, BP, Ricardo, Mahle, Daimler and IAV. A number of important topics were discussed in current and future engine research including downsizing of engines with boosting, Miller cycles for higher fuel efficiency, high octane fuel developments, advanced turbomachinery (boosting) concepts and ignition minimisation. BP’s advanced concept car attracted significant interest, not least from a number of undergraduate students in automotive and motorsport engineering. In addition, CAPF showcased its work through numerous posters outside the main presentation room with PhD students answering questions from delegates.

To round off an interesting and rewarding day, a number of delegates were given the opportunity of a guided tour of CAPF’s research facilities, further showcasing Brunel’s significant strength in this area. Funding through IAA under the auspices of RSDO for Engagement activities has been particularly welcomed in this regard. As the recent “Automotive Technology Mapping Exercise” delivered by Beta Technology on behalf of Brunel University showed, there is considerable opportunity for funding from RCUK as well as the EU through such programmes as TSB’s Low Carbon Vehicle Innovation Platform or Horizon 2020’s “Mobility for Growth”. In either of those programs extensive OEM involvement is required which means that for Brunel’s CAPF increased visibility is continuously required both in order to allow diffusion of awareness of the expansion of capabilities within CAPF but to also strengthen traditional ties with existing industrial collaborators.

The latest member of staff to join the Research Support and Development Office (RSDO), Jon Ford spoke to Leading Edge about his new role at Brunel University.

When did you join RSDO?
Early in March (2014) this year.

What will you do in your new role at Brunel?
Most of my time will be spent reviewing contract terms and, where necessary, negotiating with other organisations to improve Brunel’s position.

What does your team do?
We (Contracts and IP Team) provide support to Brunel researchers working with external organisations, advising on contractual and intellectual property matters to optimise the benefits to Brunel. This typically includes preparing a variety of agreements from NDAs to collaboration agreements with partner organisations including companies, charities and other Universities.

Can you tell us a little bit about your background?
I worked in microbiological research for around 20 years, and then changed career after being made redundant about 10 years ago. Since then, I have worked in similar roles at the University of Birmingham and most recently at QinetiQ, a multi-national company in the defence and aerospace industries.

What experiences do you bring to Brunel?
I am experienced in negotiating research-related contracts on behalf of both the University and the Industrial side of the fence, and believe that this has given me an insight into the issues that affect both sides.

What aspect of working at Brunel do you most look forward to?
I am looking forward to being back in a University environment, and applying the experience which I have gained in industry over the last few years.

How can you be contacted and where can you be found?
My office is room 255 in the Michael Sterling building and I can be contacted on 01895 266 651 or at jon.ford@brunel.ac.uk.