

research forum

a newsletter for the **research** community

Volume 6 Issue 1 October 2009

OXFORD
BROOKES
UNIVERSITY



- Assessing the MINI E
- 'Seeing' computers improving lives
- WildKnowledge in the Maasai Mara

Welcome



Welcome to the first stage of the redesigned Research Forum. Since its inception, each edition of Research Forum has included articles from a range of disciplines and academic schools. The intention for the future is to focus on specific, but broad, research themes. The theme for this issue is external research collaboration. The articles included highlight how such collaboration can result in excellent research, which not only produces high quality outputs but also recognised impact. The university's aim is for teaching, research and knowledge transfer to form a virtuous circle, such that rather than pulling in opposite directions, the activities complement each other. The projects featured here demonstrate how this is possible with research and knowledge transfer.

Changing to a more focused Research Forum is the first stage of redesign. Stage two, from March 2010, will include a change in the publication's layout and design. In addition, to enable greater flexibility in length and presentation, Research Forum will mainly be available by e-magazine rather than in printed format, although some printed copies will still be available. This issue is therefore 'work in progress'; we hope you will like the final version when it appears in 2010.

Diana Woodhouse
Pro Vice-Chancellor, Research



inside...

3. **Zero-emissions MINI E** – how Brookes is helping to evaluate the electric mini
4. **Knowledge Transfer at the Institute of Public Care** – improving efficiency and effectiveness of care
5. **Wildknowlege in the Maasai Mara** – working with the Kenya Wildlife Service to evaluate impact of wildlife tourism
6. **Research profile** – Chris Cooper on building partnerships in tourism
8. **Computer vision** – how society benefits
10. **Perceptual-motor development in children** – producing the test manuals

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

Contributions are welcome from all sections of the university and should be sent to: The Editor, Research Forum, Research and Business Development Office, Oxford Brookes University, Buckley Building, Headington Campus, Gypsy Lane, Oxford, OX3 0BP, or by email to: researchforum@brookes.ac.uk.

The university accepts no responsibility for the content of any material in Research Forum. Readers should note in particular that the inclusion of news and editorial items does not imply endorsement by the university of the matters reported, or the views expressed. The Editor reserves the right to edit contributions before publication and to refuse editorial items.

Published by Oxford Brookes University
Corporate Affairs Directorate.

Front cover photo: Stewart Thompson

Zero-emissions MINI E

Brookes helps evaluate electric MINIs

The Sustainable Vehicle Engineering Centre (SVEC) will investigate the materials, design issues and drivetrain concepts that will allow the development of low mass, low emission, economical vehicles that satisfy functional and safety requirements, whilst being amenable to disassembly and recovery of materials at end-of-life. The work will be supported by the Psychology department which will be concerned with user reaction to the vehicle.



The UK government Technology Strategy Board (TSB) is taking the first step towards achieving its low carbon transport agenda, by funding vehicle trials across the UK. The common objective is to develop ultra-low carbon vehicles that customers want to buy – and bring them to market as rapidly as possible. The TSB announced the names of the eight vehicle consortia on 23 June 2009. The project represents a hugely exciting moment for the fledgling UK electric car industry. About 340 cars and vans built by different manufacturers will be involved in the trials up and down the country.

BMW Group is leading one of the two-year trials with a re-engineered battery electric MINI Cooper model – the MINI E. The Sustainable Vehicle Engineering Centre, led by Professor Allan Hutchinson, is the research partner in this project that also includes Scottish and Southern Energy (SSE) and the South East England Development Agency (SEEDA).

MINI E will go on a twelve-month field trial in Germany, the USA and the UK, to evaluate the technical and social aspects of living with an all-electric vehicle in a real world environment. Private individuals were invited to take part in the first six-month UK trial through a web-based invitation during September 2009. Following rigorous screening and assessment, about 20 individuals will take to the roads in December.

The MINI E project in the UK is focused on the Oxfordshire and South East area, with 40 vehicles being trialled by public and fleet users. The Sustainable Vehicle Engineering Centre's role is to collect and analyse all the technical data and subjective driver feedback, and to draw up potential future business models for electric cars both in the UK and mainland Europe. The information gleaned from the MINI E drivers will assist BMW with future Electric Vehicle (EV) product development and inform SSE regarding electrification infrastructure.

This two-year project has a direct value of £6.3 million, with a contribution of £2.5 million from the Technology Strategy Board. The funding to Brookes is worth around £400k. The project consists of four work packages: MINI E production and operation; research; E-infrastructure; and project management.

The research work package involves the field trials and the development of business models. Engineers, mathematicians and statisticians from the School of Technology will collect and analyse all the technical data and subjective driver feedback, supported by Professor Margaret Harris and Dr Mark Burgess of the Psychology Department in the School of Social Sciences and Law. This project represents an excellent opportunity for two schools to work together on a high profile activity that brings together engineering and social psychology in the context of sustainable low carbon transport. It also allows access to our academic counterparts involved with MINI E trials at TU Chemnitz in Germany and UC Davis in California.

At the end of this two-year trial, a comprehensive report documenting the main findings of the MINI E research project will be published. This will help inform those organisations seeking to create the political, technical and commercial framework necessary to enable sustainable mobility in a low carbon future, to become reality.

To learn more about the Oxfordshire trials, visit www.electricmini.co.uk and register to receive regular updates on the MINI E project.

For more information contact:
Professor Allan Hutchinson, Head of SVEC, School of Technology.
e: arhutchinson@brookes.ac.uk

Knowledge Transfer improving efficiency and effectiveness of public care

by Keith Moultrie, Director of the Institute for Public Care

The Institute of Public Care (IPC) has been located in the School of Social Sciences and Law at Brookes, since it moved here from Bath University in 1999. Its 30 staff, who are based in offices at Bath and Botley, here in Oxford, work with managers and professionals in national government, local authorities, primary care trusts, voluntary and private providers and local health boards, throughout England and Wales. Their remit is to improve the efficiency and effectiveness of public care through knowledge transfer and practice support. They deliver this through an integrated suite of activities focusing on four key public care issues: commissioning, performance management, practice quality, and service transformation.

The IPC's work combines:

- Direct advice and consultancy to public care agencies to help them implement best practice.
- A learning network of local authority managers from across England and Wales to share best practice.
- Postgraduate short courses for public care managers.
- Work with national and regional government to undertake applied research, support policy development, implementation and advice on best practice.
- Production of guidance, guidelines and other publications to steer local practice.

Since joining Brookes, the IPC has expanded steadily in size, reach and influence. Its annual income, which funds all its activities, has increased from £450k to £2.2m. The IPC has founded its success on an innovative approach to knowledge transfer, which may be relevant elsewhere in Brookes. The distinctive features of the approach include:

- A strong emphasis on knowledge transfer as the primary task of the Institute and its entire staff. We are concerned less with primary research and more with the application of evidence to management practice in public care. We believe that all consultancy and development interventions should be informed by reference to a clear evidence base.
- Activities which evolve constantly to meet the specific needs of client organisations. At any one time we have a limited range of key areas of activity, chosen on the basis of market needs, but these change over time and we are always very conscious of

the need to adjust to ensure they apply to an ever-evolving public care environment.

- A strong institute-wide approach to building intellectual capital through shared intelligence and ideas. Clients do not contract the services of an individual; they contract with the IPC as a whole. Our publications reflect the views of the IPC rather than any one individual.
- A highly flexible and skilled staff group, each of whom is able to undertake a wide range of different activities, supported by a central system for allocating and monitoring projects. Although there are areas of individual specialism, our expectation is that all of our consultants are competent and knowledgeable in all of the areas we work in and comfortable in all of the different forms of activity we undertake. We actively encourage staff to acquire a range of experience across the whole public care sector and not to be limited to just one particular specialism.

The IPC's steady increase in income and staff, its low staff turnover, the strength of its current and planned portfolio and its reputation amongst key leaders in public care across England and Wales testify to its ongoing success. Some examples of our recent work include:

- A project for the Welsh Assembly Government to develop a national framework and guidance on commissioning for social care. This project was developed following many projects across Wales over the last eight years in the social care of children and adults. It involved applied research, analysis and consultation with a wide range of sectors to develop appropriate guidance for all local authorities and their partners across the country.
- A suite of seven publications in association with the Department of Health to support more effective market facilitation for adult health and wellbeing. The suite was based on projects undertaken by the IPC with local authorities, community health and the private and voluntary sectors to identify and codify good practice in this area of emerging practice across England.
- A national programme to support commissioning for children's services. The IPC is part of the consortium delivering the Commissioning Support Programme for the Department for Children, Schools and Families and the Department of Health.

The £20m programme runs from 2008 to 2011 and involves analysis of best practice, skills development and learning, direct advice and consultancy to the 150 children's trusts in England.

- A network partnership scheme involving in-depth work with six local authorities to help them to take an evidence-led approach to transforming their social care services. The IPC is working with each local authority for up to 60 days per year over three years, acting as their academic partner as they design and implement arrangements which will enable them to meet the demands of changing legislation and public expectations on social care. We are undertaking studies and evidence reviews, analysing the effectiveness of existing services, helping to design and implement changes in care management, care provision and commissioning in individual authorities. In addition, supported by the Brookes Higher Education Innovation Fund, we are able to provide networking and shared learning opportunities for all of the partners and publish materials from the projects which are of relevance to the wider public care community.

Public care is an extremely important part of the UK economy. Over the next few years, the economic recession, increased demand for care and welfare fuelled by an aging population, and continuing concern about the care and development of children, will require ever more effective and efficient public care. Central and local government and the NHS will continue to need high quality advice, guidance and implementation support. At the IPC we believe that university-based knowledge transfer organisations can offer this more effectively than traditional private and independent consultancies, particularly where they have:

- strong links in to the wider academic community
- consultants with practical experience of working in the public care sector
- a culture and value sets which complement those of public care organisations.

We are keen to continue to expand the work we are doing in collaboration with colleagues across Brookes.

For more information check out our website <http://ipc.brookes.ac.uk> or email [Quentin Edwards](mailto:Quentin.Edwards@brookes.ac.uk)



WildKnowledge in the Maasai Mara

by Dr Stewart Thompson, School of Life Sciences

WildKnowledge began in 2004 as a research project (WildKey) between the School of Life Sciences and a specialist software company. It was initially funded by the Royal Society, with a second tranche of funding from the Heritage Lottery Fund. The project examined whether mobile devices (in this case personal digital assistants) fitted with global positioning systems (GPS) and interactive identification keys, would provide a more engaging way of identifying and recording wildlife. After trialling the software with over 1,000 users, there were substantial increases in the ability and motivation of both teacher and student. These positive outcomes resulted in WildKey being 'spun out' in late 2006, since when, development has continued apace, with three new applications, all using the full functionality of today's mobile devices (GPS, text, camera, audio, video and internet), being launched to deliver 'on-location' understanding and to capture data at the point of inspiration.

But what are we doing in terms of exploring the research potential of the WildKnowledge software? The Spatial Ecology and Landuse Unit, based in the School of Life Sciences, has a long standing interest in landscape scale development projects which have impacts (positive and negative) on wildlife. Set against this backdrop, we have started to work with a range of interested parties, who are aware of the potential of our software, to further our understanding of species and habitats of conservation concern. Several of these projects have strong links to the rapidly increasing incidence of ecotourism in developing countries and the land-use management changes necessary to facilitate them. Our most 'advanced' project is taking place in the Maasai Mara Reserve in Kenya, where we are working closely with Dr Sam Andanje, who is in charge of ecological monitoring for the Kenya Wildlife Service (KWS). But why Kenya and what do we hope to achieve?

Kenya's South Rift region has a varied ecology, which sustains diverse and abundant wildlife, most notably the 'big five' (lion, leopard, buffalo, rhino and elephant), which attract hundreds of thousands of visitors per year. As a consequence, the promotion of wildlife tourism has become central to Kenya's planning. The Mara, which lies in this ecological zone, has been chosen as a study site because of its popularity with tourists and the associated increase in ecotourism ventures in and around the reserve, a consequence of which is that the ecosystem faces many adverse environmental impacts. One of the greatest challenges is, therefore, managing the increasing number of visitors in the reserve, without disturbing the ecosystems themselves.

The environmental impacts of wildlife tourism in the country are acknowledged. However, they are largely unquantified; most of the impacts of tourism on wildlife are descriptive, with little 'hard' data generated for subsequent scientific analysis. The research that does take place tends to focus on undisturbed behaviours, rather than real-world impacts, such as increased vulnerability to predation or disruption to feeding, breeding and migration behaviour. Ecological research therefore, needs to move beyond easily observable and measurable effects towards emphasis on the relationship between the physical and biological effects of recreational tourism. With this in mind, we are working with the KWS to investigate how and to what extent these developments are impacting upon aspects of the physical and natural ecology of the Mara ecosystem.

Initially we are using the WildKnowledge suite of software to record the distribution and activity types of focal wildlife species (including the big five), in relation to the different forms of accommodation currently

utilised by visitors to the Mara. Ground sampling and spatial data recording will be undertaken from static observation points in various sized game lodges and from a vehicle which we use to undertake systematic ground surveys, following the existing game trails, paths and roads used by the lodge field guides. The KWS has provided access to historical, remotely sensed data, such as vegetation cover and migration patterns from datasets of surveys conducted in the area since 1990. Current wildlife distribution and behavioural data will be collected during the next two years of field surveys and analysis of their temporal and spatial relationship with existing wildlife lodges will be evaluated using a bespoke Geographical Information System (GIS). The GIS will be used to create functional layers to store, analyse and visualise topographical data, including wildlife, vegetation, man-made and natural resources. Once this data is in place, the GIS will be used to model the impact of the wildlife to any new development proposals in the reserve, thus providing decision-makers with an indication of their acceptability.

We are aware that this is potentially a very large project and that to do it justice we need a team of researchers from a range of disciplines, working in tandem on key components. The project has, however, got off to a good start and we are confident that we can attract more attention to it – for example, the ecotourism industry itself could and should be a key player. Ultimately we and the Kenya Wildlife Service expect that the research will help influence policy direction in relation to wildlife tourism planning, in both existing wildlife areas and those being earmarked for further expansion, of what is one of Kenya's biggest dollar earners.

Research Profile

Chris Cooper: building partnerships in tourism



Professor Chris Cooper joined Oxford Brookes University in September as Dean of the Business School from the University of Nottingham Business School, where he was Director of the Christel DeHaan Tourism and Travel Research Institute.

Professor Cooper has over 25 years' experience in the tourism sector, beginning his career in market planning and research with the UK's largest tour operator, Thomson Travel. He has worked as a researcher and teacher in every region of the world and was awarded the Ulysses prize in May for academic services to tourism. He is only the fifth recipient of the prize, awarded by the World Tourism Organisation.

He has authored a number of leading textbooks on tourism, including *Worldwide Destinations - the geography of travel and tourism*, *Tourism Principles and Practice*, and *Contemporary Tourism*. He is the co-series editor of Channelview's influential book series *Aspects of Tourism* and series editor of *Contemporary Tourism Reviews* for Goodfellow Publishing. Here he describes the links between research and consultancy and collaborations with industry, business and the public sector:

The shifting research funding landscape - notes from the front line

'In today's global economy, investment in science and innovation is not an intellectual luxury for a developed country, but an economic and social necessity'.
Sainsbury Review of Science and Innovation.

Seismic shifts

The above quote from the government's Review of Science and Innovation demonstrates a seismic shift in the research funding landscape. This shift has driven the Economic and Social Research Council (ESRC)'s business engagement strategy, which itself marks a significant change in the priorities of the research councils. It is in turn driven by the Treasury's demands to see concrete evidence of the measurable economic impact of research to justify public investment in the science base.

In this new environment, the research councils are being asked to deliver not only 'new knowledge' but also a supply of 'people with the skills base to drive forward the economy'. This shift in priorities by the research councils coalesces around the need to encourage innovation through transformative research and is supportive of research that crosses traditional disciplinary boundaries. If we add to this the Higher Education Funding Council for England (HEFCE)'s commitment, through the Research Excellence Framework (REF), to move towards the use of metrics in research assessment for the distribution of research funds, then the stage is set for new opportunities: opportunities that open the door for universities to build significant research partnerships with industry, government, international agencies – and the charities.

Partnership approaches

This shifting landscape represents a significant opportunity for Oxford Brookes and the Business School, not only through developing outward-facing research agendas and true partnerships, but also to build upon the university's strengths of interdisciplinary work. We must remember though, that

partnership building and maintaining those partnerships can be costly in terms of time and resources. In my previous position as Head of the School of Tourism at the University of Queensland, Australia, I made a conscious decision to both develop partnerships with industry and government and to invest in those relationships. I was fortunate in being able to recruit an industry partnerships director with a small support team. Our strategy was a simple one – to identify around 30 key industry and government organisations regionally and nationally and to build strong, multilayered partnerships, which included executive shadowing opportunities for students, longer internships, research partnerships and mentoring opportunities for staff on both sides. Of course, these relationships took time to mature, but the successful ones led to research contracts and the school became the preferred research partner for a number of key organisations, with some organisations partnering with us to develop the Australian equivalent of Knowledge Transfer Partnerships (KTPs).

In a sense this is about the university helping to influence and 'write the script', whether it be public policy or business plans, for the private sector. In this respect, I have worked closely with the UN's tourism agency, the World Tourism Organisation, to develop their tourism education and training agenda and also their knowledge management strategies. Again, this is a partnership and relationship that has developed over time, needing constant attention, but one that has yielded significant projects, which have been converted into publications. Indeed, I would argue that it is always possible to spin off good academic publications from even the most applied of research projects – and that as academic researchers, we have a duty to do so.

This means that in disseminating research findings, we are often writing for different audiences, or communities of practice, and we have to be smart about this. Certainly, in the field of tourism there is a significant gap between industry and academics in terms of research. Yet this gap can be closed by developing appropriate communication strategies that recognise that we are two different 'communities of practice', with different languages and frames of reference.

Knowledge transfer

In any partnership, effective communication between academics and their partners is critical, not only in terms of dissemination, but right from the outset in terms of determining and managing expectations on both sides. One area where such communication plays a key role, is in knowledge transfer. Knowledge transfer is moving front of stage in government research funding, prioritising sectors such as small business, the creative arts, energy, finance, retail and sport, leisure and tourism. Here, the government is looking for researchers to enhance the competitiveness of UK PLC, responding to the knowledge needs of business through a range of knowledge transfer mechanisms.

The Business School

At Oxford Brookes, the Business School is in an excellent position to benefit from this changed funding landscape, building upon its considerable research strengths and strong industry and government links. The school will continue to aggressively seek out partnerships with industry, government and the charities, internationally as well as within the UK. I will be putting into place a research environment that is agile enough to respond to opportunities, whilst also developing a critical mass of valued researchers in targeted areas. This will enable the school to fulfill the brief set by the research councils that research should make a demonstrable contribution to society and the economy. Through our strong partnerships and by converting research outcomes into publications, we will demonstrate the wider impact of our work.



Helping computers see – a vision for our future

by Professor Philip Torr, School of Technology

A demonstrable contribution

From this year, all the UK research councils will require an impact summary and plan, detailing the wider impact of the proposed research on the UK/local economy and communities. To quote from the Engineering and Physical Sciences Research Council (EPSRC) website: 'The Research Councils describe impact as the demonstrable contribution that excellent research makes to society and the economy. This definition accords with the Royal Charters of the councils and with HM Treasury guidance on the appraisal of economic impact.'

The EPSRC goes on to state that it aims to do this by:

- fostering global economic performance, and specifically the economic competitiveness of the United Kingdom
- increasing the effectiveness of public services and policy
- enhancing quality of life, health and creative output.

Peer reviewers will be asked to consider whether, given the nature of the proposed research, the plans to increase impact are appropriate and justified.

I can highlight an interesting contrast that now exists between working in a university and my previous experience of six years working at an industrial research lab at Microsoft Research. Microsoft Research was well resourced and shielded from the real world, with an emphasis on pure research first. It is perhaps ironic that at universities we are more constrained (at least if we want research council money) to work on industrially useful problems than those in an industrial research lab.

Benefit to society

Personally, I do not find this a bad thing; those who work in public service, such as a university, should provide some benefit to society, otherwise we are being self indulgent. However, there is a more compelling scientific reason. Working on real problems, such as those thrown up by practical applications, can act as massive stimulus to research. It is only by solving a real problem, which others have failed to solve, or perhaps even failed to see, that one can measure progress.

My own research is in the area of computer vision. I was initially motivated by a strong desire to understand what might be human and artificial intelligence, in particular such questions as:

- How do we see what happens in the world?

- How do we make sense of the movement, colours, objects, and people in our environment?

As I matured from a young DPhil student to a research director, I began to realise that by choosing carefully which problem to solve, my research might also be useful to the world at large.

Computer vision is about getting computers to see as well as we do. It is an enterprise involving people in many areas (from biologists to mathematicians, from psychologists to computer scientists and engineers), who have been working for years to understand its underlying mathematical and computational principles. It is an exciting field of study which combines very hard theoretical problem-solving in computer science which, if they could be solved, would be of enormous benefit to society.

In the past forty years, the study of computer vision has become increasingly important both commercially and academically, as the computational power and prevalence of computers and digital cameras have risen. A huge amount of information from digital imagery is now available in a form that can be processed by computer. Examples of this processing range from face detection, now common on every medium range digital camera, to complex special effects that are used increasingly in films and television programmes; from autonomous robotic navigation, to safety systems installed in cars to check that the driver is not falling asleep or reversing into a pedestrian.

The rise of the internet and the storage of vast amounts of video and images online, not least on social networks such as Facebook and YouTube, have led to an increasing interest in searching and indexing images and video. In order to do this effectively, it is necessary to understand what is in the images and videos; this is called scene understanding.

The human eye and brain versus the computer

The goals of computer vision are best illustrated by a figure; the figure below shows four different views of a building. This should be enough information to reconstruct a 3D model of the building and recognise the objects in the scene. Our eye and brain seem to do this without any trouble. Yet we are only now beginning to get a good understanding of how a computer might process all this information to understand what is in the scene, and although great progress has been made in specialised areas, there are still no vision systems that can describe a scene as well as a five year old child can.

Within my own work, some of the greatest theoretical breakthroughs have been driven by looking at real world problems. During the course of my PhD, I studied methods for robust optimisation of certain functions. These functions could be used to model how we might make inferences about our location and movement relative to objects in the world, together with an understanding of the 3D shape of the world. As well as being of abstract interest and posing hard problems of applied mathematics, the solution to these problems was highly useful industrially and resulted in a spin-out company 2d3 that produced a product called boujou. This recovers the position of the camera location for each image of an input video allowing for seamless special effects within movies, and automatically doing what had taken thousands of hours to do before. Boujou won a clutch of industry awards, including Computer Graphics World Innovation Award, the IABM (international association of broadcasting manufacturers), Peter Wayne Award, CATS Award for Innovation, and a technical EMMY; while the research work on it won the highest award in computer vision, the David Marr prize.

Paradoxically, during my period at Microsoft Research, it was much more difficult to follow the paradigm of transferring research into product. This was primarily because my research area, computer vision, was not so well suited to what was, still, mainly, an operating systems company. Frustrated at this, I moved back to academia in order to establish my own research group. Although Oxford Brookes is not a research intensive university, its commitment to research excellence was evident from its guarantee that my position would be research only and from the provision of large amounts of lab space, together with a grant to equip this lab and recruit some initial group members.

The Computer Vision Group

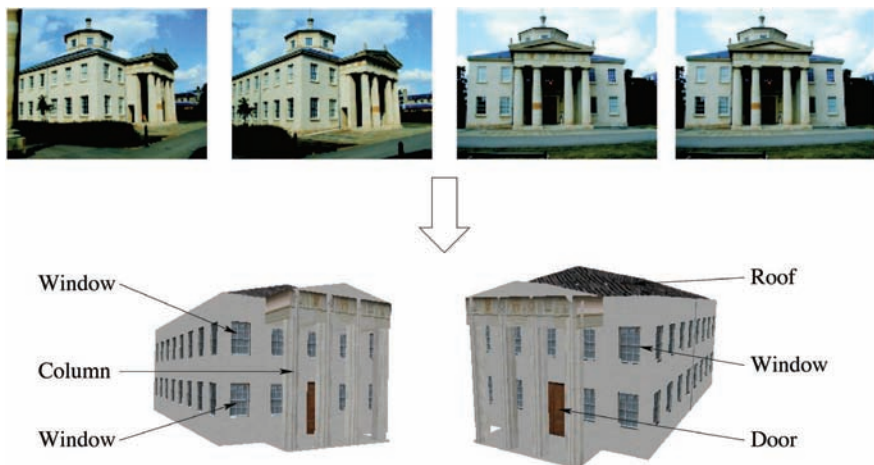
By attracting almost £2m of research income, the Computer Vision Group currently comprises 18 people, who are both academically excellent and serve the community to a high standard. Our academic excellence is evident in the number of academic awards we have won for our research, the most recent of which being from the Institute of Electrical and Electronics Engineers (IEEE); Computer Vision and Pattern Recognition, (CVPR) 2008, one of the top computer vision conferences; and another from one of the top machine learning conferences: Neural Information Processing Systems (NIPS) 2007. In addition, I received a Royal Society Wolfson Research Merit award to continue my research, one of only two that have ever been given to a new university.

Our service to the community is demonstrated by our collaboration with local business, such as Yotta, 2d3 and Vicon, as well as with international organisations, such as Sharp Research Laboratories Europe and Sony Entertainment Europe, with contributions to commercial products appearing (or about to appear) with four of them. Vicon is part of the Oxford Metrics Group (OMG) and is a world leader in the technology of motion capture. Our work with them was named the Best Knowledge Transfer Partnership in the UK at the National Knowledge Transfer Scheme 2009 Awards, held earlier this year and was a great recognition for everyone involved.

This shows that by choosing the right problems, it is possible to effectively marry the best academic research with tough real world problems.

The times ahead will be challenging regarding research funding, but thinking about our relevance and impact can only be beneficial to our research.

For further information visit <http://cms.brookes.ac.uk/research/visiongroup/>



A 3D model is generated automatically from several images of an architectural scene. The bottom row shows some early work undertaken by the proposer resulting in 3D reconstruction and recognition of parts of the scene (from some joint work between myself and the University of Cambridge).

Perceptual-motor development in children

by Anna Barnett, School of Social Sciences and Law

Since joining the Department of Psychology at Oxford Brookes in September 2004, Dr Anna Barnett has worked closely with the publishing company, Pearson Assessment (a division of Pearson Education Ltd). Here she describes this partnership and how it has benefited her own research.

My research is in the area of perceptual-motor development in children. This includes an interest in the development of general motor competence (eg eye-hand co-ordination, balance and agility) as well as the specific skill of handwriting. Over the years, I've maintained two separate but related strands to my work. The first has been more 'theoretical', examining, for example, the possible underlying mechanisms of Developmental Co-ordination Disorder (sometimes referred to as 'Dyspraxia'), to gain a better understanding of this condition. The second strand has been much more 'practical' in nature, involving the development of tests to measure various aspects of motor behaviour.

It is the second strand of my research that has been undertaken largely in collaboration with a publishing company. This partnership began when I was approached by Pearson (formerly Harcourt) Assessment. At that time, they published one of the most popular tools for identifying and describing children with motor impairments, called the Movement Assessment Battery for Children (or Movement ABC). This test had not been revised since it was first developed in North America over 15 years previously. Due to my expertise in the area and my links with the authors of this instrument, I was asked to manage a project to revise the test and to gather up-to-date standards for children aged 3-16 years in the UK. Although the size and scope of the project was rather daunting, I agreed to undertake this work for several reasons:

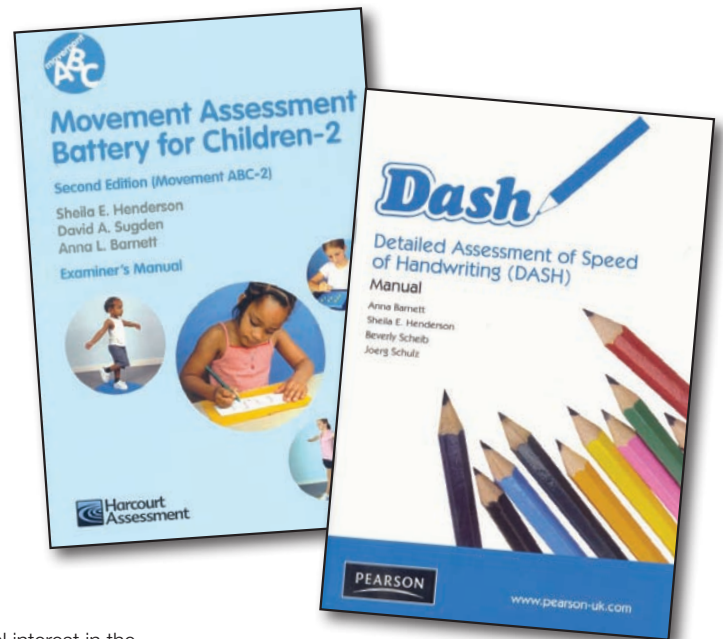
- Pearson Assessment has an excellent reputation for the development and publication of psychological tests. The company has strong links with a team of statisticians and I felt confident that their involvement would ensure the production of a robust and useful measurement instrument.
- The fact that the project had very clear and direct practical implications appealed to me. I was aware of the lack of good tests in the field at the time and was keen to be able to publish something that would be useful to researchers and practitioners.

- Having a special interest in the development of handwriting skill, I was also aware of the lack of assessment tools in this area. This project gave me the opportunity to convince the publishing company to extend the project to include the development of a new test, the DASH (Detailed Assessment of Speed of Handwriting), alongside a revision of the Movement ABC.
- The offer came shortly after I had started working at Oxford Brookes. At that time, I was beginning to plan a new programme of research and grant applications. To be offered funding for research without having to go through the lengthy review process involved in a research council grant application, or to be in competition with others for funding, was certainly very attractive!

As with any research project, my work with Pearson began by formulating a proposal, together with costings and timescales. After some negotiation the two parties agreed and a contract was drawn up.

The research project itself involved developing new and revising existing test items, designing new test equipment, training test administrators and overseeing data collection in 100 schools across the UK. The data then had to be analysed, test manuals written and scoring forms designed. Some aspects of this work were similar in nature to previous research that I had undertaken but working with an external partner to develop a commercial product also presented new challenges.

Production of the test manuals for the Movement ABC and the DASH was a new experience. Writing for these publications was quite different to writing a more familiar journal article. I was also much more involved with the content and design of scoring forms and other test materials than I had expected to be. A test like the Movement ABC includes



equipment such as plastic pegs and peg boards, bean bags, balance boards etc. All of these have to be safe, robust and economical to manufacture. I had to spend a considerable amount of time making decisions on the exact specifications of all new items to be manufactured and at times it was hard to find materials of sufficient quality, given the budget set by the publisher.

Following publication of the materials, I was surprised to be so involved in customer support. Having had to deal with many customer comments and queries, I have now put together a 'Frequently Asked Questions' page on the Pearson website and am also running training courses for the tests in response to customer demand.

Whilst there has been much more work involved in this type of project than I had originally anticipated, it has been extremely satisfying to work with an external partner to bring assessment tools on to the market that are now regularly used by practitioners in schools and hospitals, as well as by my colleagues in research. There is no doubt that these new tests have been well received. Sales are good, the Movement ABC is already undergoing translation into several other languages, the demand for training is high and Pearson are now funding another project to extend the DASH for use with adults.

I will have several publications in peer-reviewed academic journals as a result of this work. In addition, the tools that I have helped to develop are proving essential for my own research to identify and assess children with Developmental Co-ordination Disorder.

News

in brief

Dr Michael Lister, School of Social Sciences and Law, has been successful in securing a prestigious Economic and Social Research Council (ESRC) small grant totalling £73,266, in collaboration with Dr Lee Jarvis at Swansea University. The project is entitled, 'Anti-Terrorism, Citizenship and Security in the UK' and will run for 12 months. The project will offer an analysis of public attitudes towards British anti-terrorism policy, and the impact of those attitudes on perceptions of safety and well-being.

The Wellcome Trust has allocated a £96,382 Translation Award to **Dr Helen Dawes** and the Movement Science Research Group in the School of Life Sciences, to facilitate technology transfer of a gait measurement analysis methodology developed in the group. Gait analysis is the technical term for the measurement of the walking parameters, including the speed of walking, the style and symmetry of walking and the effort used in walking. The grant will support the development of the system so it can be translated from a laboratory tool into a measure that is in everyday clinical use. It will have a simple to use computer interface that immediately provides outputs that clinicians can understand and use to direct patient care. The team aims to attract a commercial partner to license the product and take it to healthcare workers in standard healthcare clinics. The award is in collaboration with Professor Derick Wade, a consultant in neuro-rehabilitation and clinical director, Oxford Centre for Enablement at the Nuffield Orthopaedic Centre.

The Oxford Institute for Sustainable Development (OISD) based in the School of the Built Environment recently organised the third consecutive UK-India conference; this time based around the theme of 'Urban Sustainability and Green Buildings for the 21st Century', with RICS India and the Commonwealth Association of Surveying and Land Economy (CASLE). As the first major conference of RICS India, the event was held in the prestigious India International Centre, Delhi in May and the panel of chairs for the day included **Dr Rajat Gupta** from OISD.

Professor Wenhua Shan, School of Social Sciences and Law has been selected as a 'Chang Jiang Chair Professor' (CJCP) (also known as 'Cheung Kong Chair/Lecture Professor', or 'Yangtze River Scholar Chair Professor') by the Chinese Ministry of Education, for his contribution to international law, particularly international and comparative economic law. The professorship is regarded as the highest academic honour given by the People's Republic of China.

Dr Deborah Pearce, School of Life Sciences, has been invited to a Defra-funded peatland methane workshop to investigate how much is known on methane emissions from restored peatlands and to make recommendations on the management of restored peatlands (particularly in temperate zones), so that their carbon sink function can be maximised.

Dr Rajat Gupta, School of the Built Environment, has been awarded a grant of £186,901 by the Engineering and Physical Sciences Research Council (EPSRC) over three years, to undertake research on 'adapting suburban neighbourhoods for a changing climate'. The research grant is part of a three-year collaborative project worth £651,000 with University of West of England, Heriot-Watt University and a range of industry partners. The project is funded under the EPSRC's call on 'Adaptation and Resilience to Climate Change.'

Dr John Palmer, School of Social Sciences and Law, has been awarded the Lucy Mair Medal for Applied Anthropology by the Royal Anthropological Institute for his work, over more than a decade, assisting the indigenous Wichi of northern Argentina in their continued struggle to have their land-rights recognised and protected by the Argentinian government.

Bristol-Myers Squibb has awarded £41,848 to **Dr Isabel Bermudez**, School of Life Sciences, for work on the Mg-depletion model of depression (deficiency of Magnesium). The company is a global biopharmaceutical company whose mission is to extend and enhance human life.

Diary October 2009 – March 2010

Wednesday 28 October 2009

University Postgraduate Fair

Buckley Building, Gipsy Lane 16:00–18:00
Further information and online registration available at:
www.brookes.ac.uk/studying/contact/opendays

Wednesday 4 November 2009

Public Lecture – Into danger: people who risk their lives for work and why reporting the news isn't an example of that (most of the time)

Kate Adie OBE
Main Lecture Theatre, Gipsy Lane 18:00–19:30
Book online at www.brookes.ac.uk/publiclectures, or contact the Events Office on 01865 484864, email events@brookes.ac.uk

Thursday 5 November 2009

Public Lecture – Is design just bollards?

Dr Richard Simmons, Chief Executive, Commission for Architecture and the Built Environment (CABE)
Main Lecture Theatre, Gipsy Lane 18:00–19:30
Book online at www.brookes.ac.uk/publiclectures, or contact the Events Office on 01865 484864, email events@brookes.ac.uk

Wednesday 11 November 2009

Public Lecture – Shakespeare and religion

Professor Tom Betteridge, School of Arts and Humanities
Main Lecture Theatre, Gipsy Lane 18:00–19:30
Book online at www.brookes.ac.uk/publiclectures, or contact the Events Office on 01865 484864, email events@brookes.ac.uk

Monday 16 November – Sunday 22 November 2009

Global Entrepreneurship Week

Further information available at:
www.brookes.ac.uk/about/news/public/entweek

Wednesday 25 November 2009

Research methods and management training - applying for research funding: why is this important?

Why applying for research funding is important and explaining the role of the Schools Grant Panels. Plus a research application question time session.
Room BG11, Buckley Building 12:30–16:00
(lunch provided)

To book a place, please contact louise.wood@brookes.ac.uk

Thursday 26 November 2009

Public Lecture – Inspired by Books

The Chancellor of Oxford Brookes, Shami Chakrabarti CBE, the Vice-Chancellor, Professor Janet Beer, the Chief Constable of Thames Valley Police, Sara Thornton QPM and eminent author, Philip Pullman CBE, will come together for a discussion of books which have influenced their lives.
Main Hall, Gipsy Lane 18:00–19:30
Book online at www.brookes.ac.uk/publiclectures, or contact the Events Office on 01865 484864, email events@brookes.ac.uk

Wednesday 2 December 2009

Public Lecture – Designing world class engines for Formula One and road cars

Professor Geoff Goddard, School of Technology
Main Lecture Theatre, Gipsy Lane 18:00–19:30
Book online at www.brookes.ac.uk/publiclectures, or contact the Events Office on 01865 484864, email events@brookes.ac.uk

Wednesday 10 February 2010

University Postgraduate Fair

Buckley Building, Gipsy Lane 16:00–18:00
Online registration will be available nearer the time.
Further information available at www.brookes.ac.uk/studying/contact/opendays

Wednesday 10 March 2010

Research methods and management training – 'I've won my award! Hurrah! What do I do next?'

How to manage your research project, including the roles and responsibilities of the Principal Investigator, HR issues for contract research staff, and finance issues at both school and university level.
Room BG11, Buckley Building, Gipsy Lane 12:30–16:00
(lunch provided)

Details of research training events throughout the year are available at www.brookes.ac.uk/res/support/training

Details of research supervisory and research student training are available on the Graduate Office web page:
www.brookes.ac.uk/brookesnet/graduateoffice

Details of research seminars taking place in each of the schools are available at: www.brookes.ac.uk/res/support/training/seminars

To obtain a large-print copy of (or sections of) this publication or to enquire about other formats please contact +44 (0) 1865 484848 or email query@brookes.ac.uk.

Oxford Brookes promotes an inclusive and supportive environment, enabling all members of the university (staff and students) to reach their potential and celebrate their diversity. We embrace the spirit of all equalities legislation and are committed to tackling all forms of unfair discrimination and to the development of policies and practices to ensure these objectives. We seek to make our courses as inclusive as possible and welcome applications from all sections of the community and from people at all stages of their life. For further information on the university's commitment to equal opportunities and diversity, please refer to the Equal Opportunities Policy for Students, the university's Race Equality Policy and the Students' Charter – available from www.brookes.ac.uk or on request from the university's Equal Opportunities and Diversity Manager +44 (0) 1865 485929.