



Volume 6 Issue 2 May 2010

RF

RESEARCH FORUM

The newsletter for the research community

**OXFORD
BROOKES
UNIVERSITY**

**Optimising human
performance: the work
of the Movement
Science Group**

**Prevention Science:
an emerging
multidisciplinary field**

**Sitting playfully:
a therapeutic role
for computer games**

WELCOME INSIDE...



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.

Designed and published by Oxford Brookes University, Corporate Affairs Directorate.

Front cover photo
www.sxc.hu

Welcome to the new look Research Forum which is available as an e-magazine with printed

copies for external circulation. This issue focuses on health, one of the research themes of the university.

The following articles provide a taste of the wide ranging interest in this topic that exists across the university, from, most obviously, the Schools of Health and Social Care and Life Sciences, through the Departments of Psychology and Computing, to the Department of History.

Some of the research reported is collaborative and demonstrates the links that are being made between disciplines to provide a holistic approach to health-related issues.

These links are actively encouraged by the university which, in addition to supporting individual projects, has facilitated the development of an interdisciplinary master's programme in Cancer Care and provided funding for a doctoral training programme, Children and Young People: Psychological, Educational and Health Perspectives.

These exciting initiatives bring together strong researchers who have different perspectives, expertise and experience and provide a model for interdisciplinary collaboration.

Diana Woodhouse
Pro Vice-Chancellor, Research

- 3 The clinical challenges of health research**
The work of the Institute for Research in Child Development outlined
- 4 The quest to explain balance goes on**
Dr David Meredith describes the work of the Membrane Transport Group
- 5 Perspectives on cancer care and the role of the primary care team**
Dr Eike Adams reports on a research study nearing completion
- 6 Evaluation of Adolescent Idiopathic Scoliosis**
Tom Shannon explains a new application of motion capture technology
- 7 Shaping the future of health: priorities and strategies**
by Professor Paul Weindling and Marius Turda
- 8 In Good Health: South Asia research at Oxford Brookes**
by Professor Waltraud Ernst
- 9 Bonding with baby**
Dr Jane Appleton and Professor Margaret Harris report on health visitor assessments of mother-infant interactions
- 10 Optimising human performance**
Dr Johnathan Collett explains the work of the Movement Science Group
- 12 Problem drug use and physical activity**
Professor Jo Neale and Professor Helen Dawes report on an emerging research collaboration
- 13 Research with heroin users**
Lucy Pickering reports how it can be a rewarding experience all round
- 14 Prevention Science**
Dr David Foxcroft describes an emerging multi-disciplinary field
- 15 Sitting playfully**
Dr David Porter investigates a therapeutic role for computer games
- 16 Are you on Brookes RADAR**
Rowena Rouse sets out RADAR's stall

The Institute for Research in Child Development, part of the Department of Psychology, is under the direction of **Professor Margaret Harris**; it brings together one of the largest groups of developmental psychologists in the UK concerned with both typical and atypical cognitive, linguistic, social and motor development as it relates to education, health and/or social functioning.

The Institute for Research in Child Development: The clinical challenges of health research

Health-related research within the institute is broadly directed at improving understanding and management of children with various clinical conditions and their families. The central themes of research have been to elucidate the mechanisms underlying the children's symptoms or associated problems, to identify and overcome barriers to treatment or management opportunities and to evaluate interventions. In contrast to the tightly defined themes of health-related research within the institute, a wide range of clinical groups have participated in the studies, including children with autism, Down syndrome, attention deficit hyperactivity disorder (ADHD), deafness and developmental co-ordination disorder. This diversity represents the areas of expertise of the staff.

For example, **Dr Anna Barnett** and **Dr Kate Wilmut** have a special interest in children with developmental co-ordination disorder (DCD). Children with this condition experience significant difficulties with everyday movement tasks and generally have reduced levels of fitness and physical activity. In collaboration with colleagues from the School of Life Sciences, Drs Barnett and Wilmut have examined fitness levels in youngsters with DCD, using a cycle ergometer test and clinical exercise testing methodology. Their research suggests that a low level of aerobic muscle performance limits the ability of individuals with DCD to push themselves hard during exercise. Furthermore, data from a pilot study carried out at the Clinical Exercise and Rehabilitation Unit (CLEAR) at Brookes suggests that fitness levels do improve with specialised intervention, at least in the short term. This work has been extended, with an interview study with the children and their parents, to explore their attitudes towards physical activity. This has revealed perceived barriers and facilitators to physical activity, which will help to inform

future health promotion programmes with this group.

Dr Luci Wiggs' research focuses on sleep and its disorders in various paediatric clinical groups who are at increased risk of suffering from sleep disturbance. Not only are sleep disorders a problem for the sufferer, their family and the clinicians involved with their care, but they are frequently associated with adverse effects on behaviour, cognition and psycho-social functioning. Nevertheless Dr Wiggs' research has suggested that many sleep disorders go untreated, partly because parents fail to present these problems to the clinicians, or because, if they do, treatment possibilities are often overlooked. At least part of the reason for this mismatch between clinical need and therapeutic input appears to be that both parents and professionals may be under the mistaken belief that sleep problems are an inevitable part of the child's underlying medical, psychiatric, or neurological condition and are not amenable to treatment. Dr Wiggs has therefore identified and described profiles of sleep disorders associated with different underlying conditions to help inform about factors which might be causal and can be explored by intervention trials to guide practice. For example, having identified that behavioural sleep disorders featured prominently for children with autism, Dr Wiggs conducted a randomised controlled trial (RCT) of a behavioural intervention (ie using strategies to teach the child more appropriate sleep behaviours), which suggested that this form of intervention could be used successfully to reduce problematic night-time behaviour. Dr Wiggs is currently involved with a multi-centre, Department of Health funded dose-ranging RCT, to assess the use of a pharmacological therapy (melatonin) for sleeplessness in children with severe intellectual disabilities.

Research directed at exploring beyond

the therapeutic effectiveness of a particular treatment is exemplified by Professor Margaret Harris' Economic and Social Research Council funded project to assess



the literacy levels of teenagers who are deaf. The study has been particularly concerned with differences between teenagers who use a cochlear implant and those who use a hearing aid. Cochlear implants involve the surgical insertion of an electrode array into the cochlea – the inner part of the ear – and they have been found to have a positive impact on the language levels of deaf children. The study, which assessed reading and spelling abilities in a sample of young people aged from 12 to 16 years, found that cochlear implants did not lead to enhanced literacy skills and, overall, teenagers who were using hearing aids were performing at a higher level. The study identified the importance of continuing support for literacy throughout secondary school to enable deaf children to achieve their potential.

Research at the institute aims to improve our understanding of the challenges facing some children and their families and to help guide practice about how best to provide help and support. Further information can be found at:

<http://ssl.brookes.ac.uk/psychology/research/centres/irch.asp>

The quest to explain balance goes on

By Dr David Meredith,
School of Life Sciences

The work of the Membrane Transport Group in the School of Life Sciences may seem far removed from the theory of the harmony of the four humours. However the concept of homeostasis is alive today and informs our study of the transportation of chemical compounds to maintain the body's balance.

From Hippocrates until the dawning of the modern era of medicine in the mid 19th century, it was a widely held belief that the human body contained four 'humours' (black bile, yellow bile, phlegm and blood), and that it was the balance of these humours that determined the health of the individual. It was the French physician Claude Bernard (1813-1878) who introduced the term *milieu intérieur* in the second half of the 19th century, writing *La fixité du milieu intérieur est la condition d'une vie libre et indépendante* ('The constancy of the internal environment is the condition for a free and independent life'). This has been adopted and taken forward into the current concept of homeostasis of the body over the past one hundred years.

One of the challenges of homeostasis is to maintain various parameters of the body within certain defined limits that are compatible with health. Body pH, temperature, hydration levels and so on are all carefully maintained, and compounds which the body consumes, such as nutrients, need to be replenished and the waste products of metabolism excreted. This involves chemical compounds crossing the plasma membranes of the outer layer of cells that form the interface to the outside world, the epithelia (eg the intestine). For the large number of ingested compounds, the requirement to cross cell membranes raises a problem, as the majority are lipid insoluble and are unable to diffuse across the epithelial barrier. Indeed, one function of the cell membrane is to prevent unwanted entry or exit of compounds, directly preserving the *milieu intérieur* of the cell.

It is estimated that around 10% of the human genome codes are made up of membrane transporters, some 3,000 proteins in total. In addition to their physiological role, they can play a role in pharmacology as either a route of drug transport, or more directly as the drug target itself. It is the way in which membrane transport proteins function and especially their role in drug disposition that

is the research interest of the Membrane Transport Group.

Logistically it is not possible to study all 3,000 or so human membrane transporters, so we focus mainly on three families of transporters, all of which are of practical interest with regard to drug delivery or being a potential drug target.

1. The peptide transporters (PepTs)

The intestinal peptide transporter PepT1 is the major route of absorption of dietary amino acids in the form of di- and tri-peptides and is also considered to be an excellent way of delivering drugs. Using a combination of functional and molecular biology-based studies, we have been able to advance the understanding of how this protein binds its substrates. In addition, in collaboration with the synthetic chemistry group of Professor Pat Bailey at Keele University, we are developing technological solutions to poor solubility and lack of oral availability of drugs by chemically modifying compounds to be PepT1 substrates, and it is hoped that this approach will be taken up by the pharmaceutical industry.

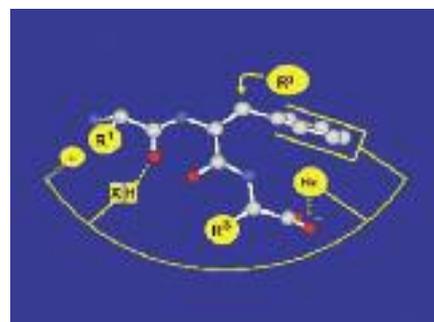
2. The organic anion transporting polypeptides (OATPs)

The OATPs that we are interested in are found in the liver and are involved in the take up of drugs from the blood prior to enzymatic detoxification and excretion through the bile. There are several closely related OATP family members in the liver cells, and, in collaboration with AstraZeneca PLC, this project is studying the overlap between the substrates they take up. This is important as this overlap can be the cause of drug-drug interactions, where taking one drug affects the actions of another by interfering with its disposition or metabolism. These undesired interactions can have life-threatening consequences and are taken very seriously by the drug regulatory agencies.

3. The proton-coupled amino acid transporters (PATs)

There are four members of the PAT family in humans, of which two are known to transport amino acids. The other two are so-called 'orphan transporters', whose function is yet to be determined and they form part of the project that we are undertaking. In the fruit fly *Drosophila*, which is often used as a model organism, there are PAT-like transporters that are involved in cell growth and development by sensing whether there is enough nutrient outside the cell and signalling whether it is a good time for the cell to grow. The signals are in the same pathways as those involved in insulin signalling and in cancer growth, so there is considerable interest in understanding how these transporters/receptors ('transceptors') function as promising future drug targets for these major disease processes.

By studying these membrane transporters, we hope to be able to understand better how they help contribute to maintaining *la fixité du milieu intérieur* and whether they can be manipulated pharmacologically to keep us in the best possible humour!



Template binding model for PepT1 substrates, showing the most important interactions between the substrate and the transporter (Bailey et al 2000, Bailey et al 2006).



Dr Eike Adams, School of Health and Social Care has nearly completed a research study, led by **Professor Eila Watson**, investigating the role and perspectives of the primary care team in the care and support of patients diagnosed with cancer; it also explores the perspectives of patients and family members. Here Dr Adams reports on the study.

Perspectives on **cancer care** and the role of the **primary care team**

The role of primary care in cancer care is currently not well-defined, and historically has focused on the provision of palliative care.

However, as increasing numbers of people are being diagnosed and living longer with cancer, the role of primary care in supporting people with cancer will inevitably increase. The Quality and Outcomes Framework (QOF) of the General Medical Services Contract for Primary Care now provides a financial incentive for GP practices to establish a cancer register, and to conduct a review with new cancer patients within six months of diagnosis. However, this recommendation is not evidence-based, and it is not known to what extent practices are implementing the review, the nature and scope of reviews which are being implemented, and whether or not they are perceived to be useful by patients. Furthermore, this recommendation does not address the potential needs of family members/carers, for whom cancer can have a big impact. Currently it is also unclear what the views of patients, family members and health care professionals are on the optimal role and timing for the involvement of primary care. This information is needed to guide which primary care interventions may be useful in improving the quality of care in the future.

Therefore, the overall aim of our study was to explore the role of primary care in caring for and supporting patients with cancer and their families.

The project involves collaborators at University of Oxford, University of Southampton, Royal Berkshire NHS Foundation Trust, University of Birmingham, as well as three user representatives.

The study was funded by Macmillan Cancer Support.

Specific study objectives

1. To describe patients' and their family members' experiences of GP/primary care team involvement in their care in the first three years following a cancer diagnosis.
2. To describe the nature and scope of QOF cancer care reviews currently being undertaken, from the patients' perspective.
3. To describe patients' and their family members' views on the optimal role for the primary care team in the period following a cancer diagnosis.
4. To seek the views of primary health care professionals regarding recommendations for their involvement in the care of people diagnosed with cancer and their family members, based on the findings from 1-3 above.

I conducted semi-structured interviews with 38 patients and 24 family members who we recruited from six GP practices in Buckinghamshire, Berkshire and Oxfordshire. Patients were stratified by time since diagnosis and we sought to include people with a range of different cancer types and from differing socio-economic and cultural backgrounds.

Preliminary results

Preliminary findings indicate that whilst many patients were very positive about their GP, and some were satisfied with the cancer care they received, others reported feeling isolated and would have liked their GP to have been more proactive.

Acknowledgement of their cancer diagnosis and general support from the GP were seen as important by patients.

The vast majority of patients were unaware of having had a specific review of their cancer care (despite primary care records indicating they had), but most welcomed the idea and felt that a specific appointment would legitimise the raising of any concerns they had.

Different preferences exist among patients and family members regarding the timing, content and mode of delivery of the review. These are partly dependent on cancer type and treatment received, as well as the general relationship between the patient and their primary care team. The point of discharge from active treatment seemed a key time to offer patients a cancer care review.

Where we are now

In addition to the interviews, we have also conducted six focus groups with a total of 71 staff at the participating GP practices to discuss our findings and hear their views on the current service provision. We anticipate that the findings from this study will help influence developments in policy and practice in this area. There is considerable scope for improvements in cancer care provision in primary care, and in future research we would like to develop and test interventions to improve care.

If you would like to discuss this study in more detail, please get in touch with Eike Adams on 01865 485278, or eadams@brookes.ac.uk, or with Eila Watson on 01865 482665, or ewatson@brookes.ac.uk.

Tom Shannon, a member of **Professor Philip Torr's** Computer Vision Group in the School of Technology, explains how a new application of motion capture technology can be used to quantify the cosmetic appearance of children with Scoliosis.

Evaluation of Adolescent Idiopathic Scoliosis by dynamic surface topography

Scoliosis is one of the major spinal diseases affecting growing children and is defined as an abnormal deformation of the spine characterised by simultaneous lateral curvature towards the arms and rotation, which in many cases results in changes in body symmetry and back shape. Much basic science, clinical and epidemiological research has been undertaken to attempt to establish the cause and development of the disease for the adolescent case but it remains unknown or idiopathic.

The disease can arise in infant and juvenile forms, although the majority of cases occur within the adolescent population of otherwise healthy children, with onset between or around puberty and skeletal maturity. In addition to the underlying deformity, there is also a potential impact on pulmonary function and physical appearance. In most cases there is no pain and both genders may be affected but the disease is found to be more prevalent in girls. Commonly, the first indicators of scoliosis are discovering changes in back shape and body symmetry, or even when clothes do not fit properly and dress hems do not line up.

Earlier work by many researchers concentrated on attempting to reduce the radiographic exposure to patients by investigating if there was a reliable correlation between the progression of an underlying spinal deformity and changes in body and back surface shape. The techniques have not gained wide acceptance as general clinical tools, because they were found to be prone to errors introduced by posture, breathing and sway.

For many patients, the motivation in seeking treatment is for the improvement of

their appearance, rather than to correct an underlying deformity, so cosmetic concerns and an understanding of the psychosocial impacts of the disease remain important factors in the clinical decision-making process. As a result, there is growing emphasis on quantifying back surface shape and general body asymmetry, with the objective of producing an agreed scoring to be used in developing treatment plans and assessing outcomes, but to date many clinics continue to rely on qualitative methods.

The aim of the study was to develop an inherently safe apparatus based on established optical motion capture technologies that would minimise the impact of posture, sway and breathing. The resulting data were used to develop new ways of describing body and back shape asymmetry, with the ultimate goal of developing a scoring system to quantify cosmetic defect.

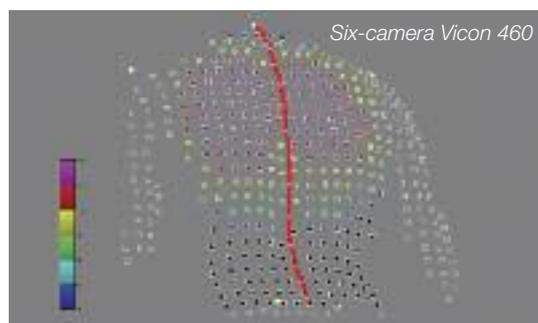
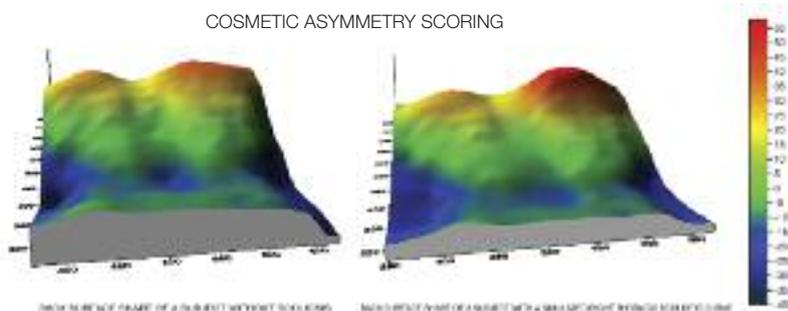
The apparatus was based on an obsolete and modified six camera VICON 460 motion capture system (Vicon Motion Systems Ltd., Oxford, UK) and was designed to be able to simultaneously acquire two-dimensional anatomical landmark positions using conventional retro-reflective markers and surface topographical data from a projected point cloud at a rate of 60 sample frames/second. Supporting VICON software reconstructed the two-dimensional data into three dimensions with sub-millimetre accuracy.

To establish the effects of posture, breathing and sway on the positions of anatomical landmarks over time and to determine their efficacy in quantifying cosmetic defect, five sequential, 20 second acquisitions of the three-dimensional

locations of six markers, were captured from 30 skeletally mature participants without any musculoskeletal condition or abnormality. The changes in position of the landmarks were then used to derive a measure of the variability of established parameters including spine height, imbalance, trunk inclination, pelvic obliquity, rotation and shoulder droop within and between each acquisition for a given subject. Comparisons were also made between the results obtained from all subjects.

Preliminary results are showing that the size of the areas of each of the coronal plane cross sections and locations of the centres of mass, either side of the spine, across all samples were, as expected, similar for each subject acquisition but, as with the landmarks data, there were differences in the ranges. As part of the study, comparisons will also be made between the results obtained from all subjects, to determine if any normal asymmetries might exist within a healthy population.

The results to date are encouraging but there is still much work to be done, including developing synthetic data using established relational algorithms to simulate the impacts on cosmetic defect and asymmetry of different types of scoliosis; testing potential scoring systems on both actual subjects and the synthetic data, and attempting to establish the efficacy of the approach by measuring scoliosis patients in a clinical setting. If the work is successful, it does have potential to be a useful tool to assist in improving the quality of life of many children and for stimulating more important research.



Shaping the future of health: priorities and strategies

Director of Centre for Health, Medicine and Society: Past and Present, **Professor Paul Weindling** and Deputy Director **Marius Turda** describe the centre's work.

The centre is regarded as one of the leading research centres of its kind in the UK and regularly attracts overseas scholars, some of whom have been funded by the university's visiting fellowship scheme. This drive for academic interaction is reflected in the centre's working group and our steadily growing international network.

With an excellent record in securing external grant funding, we are currently undertaking an ambitious five-year research programme on 'Health Care in Public and Private', funded by a Wellcome Trust Strategic Award. In addition, the award funds administrative support, student bursaries, conferences and a regular programme of seminars open to the wider community. The centre has also been successful in winning grants for individual research projects, especially from the Arts and Humanities Research Council (AHRC) and the European Commission.

The centre's research interests span from the early modern to the present day and have global coverage. Some of the centre's current projects investigate the history of:

- poverty, health and welfare of children
- anatomy, hospitals, biomedicine and the pharmaceutical industry
- crime, medicine and the law
- colonial and post-colonial medicine and indigenous health practices
- eugenics, anthropology, racism and bio-politics
- medical refugees
- Nazi experimentation.

Our research and outreach agendas reflect the university's wider policies and strategies. We strive to engage and build dialogues with local communities, to diversify our courses to attract more students, and to reshape collaborative work towards helping our researchers' own dissemination projects. The centre's research is supported by resources in the Oxford Brookes library, notably the Welfare Collection, generously donated by Charles Webster, former official historian of the NHS, and recently catalogued by a grant from the Nuffield Trust. The university is fortunate to be close to a cluster of

hospitals and the Oxfordshire Health Archives. The centre is also fortunate to hold a significant collection of historical documents and reference sources, which we make accessible to other scholars. We have, for example, a major collection of archival material relating to doctors, dental surgeons, medical scientists and nurses, who came to the United Kingdom as a result of Nazism and the Second World War.

Disseminating the results of our research amongst the academic community, as well as the general public, policy makers and the media, is central to our strategy. We have an impressive record of academic publications, including a book series in the history of medicine with the Central European University Press. But this is only one aspect of our work; through collaborative endeavours with arts organisations and museums, we are exploring more creative approaches to engage audiences with the history of health and medicine. We have, for instance, collaborated with the English Department in staging a theatre production at Hampton Court Palace on the subject of Tudor medicine. Other examples of collaborations include advising on a popular exhibition on the history of anatomical models hosted in 2009 by the Wellcome Collection in London, and participating in events organised for the local community by the Museum of the History of Science in Oxford.

Connecting with schools in the Oxford region has also given us an insight into the needs of our local community. We organised a debating competition to introduce Year 11 to 13 pupils to the history of medicine and we are also an active presence in the Science in Schools Programme, initiated by the British Council. However, it is important to aim for a national audience as well. Several members of staff have correspondingly worked with the media, making recent contributions to BBC Radio 4's *Making History* programme, and television documentaries made for BBC Four, ITV and the History Channel thus raising our profile as experts in health and medicine.

Academic research dovetails with teaching and we are currently drawing up a new pathway in history of medicine as part



Life-size male figure by Louis Auzoux, 1879. Anatomy Museum, University of Aberdeen. Photograph by John McIntosh.

of the History BA degree at Oxford Brookes University. The History Department runs a History of Medicine MA course, which is an important link between our undergraduate and PhD programmes. A recent exciting development is the centre's contributing to a history of medicine pathway to the recently validated MSc Cancer Studies course run by the School of Health and Social Care.

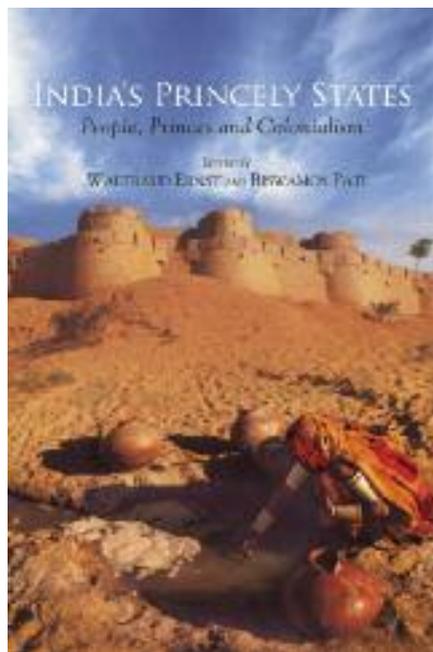
We are a thriving and innovative centre, determined to break new ground in research, teaching and public outreach and will continue to pursue ambitious, interdisciplinary, and collaborative projects. We are also looking for synergies with colleagues across the university; we hope that these will highlight the changing roles in health care today and indicate the areas where we may contribute in the future.

For more information, please visit our website:

<http://ah.brookes.ac.uk/historyofmedicine>

In good health: South Asia research at Oxford Brookes

Professor Waltraud Ernst, School of Arts and Humanities, has focused on health-related issues since undertaking her PhD at the School of Oriental and African Studies in the 1980s. Her thesis was on the history of mental illness in British India. Other projects have followed from this, including a recent study she describes here, which reassesses the place of the Indian princely states within the history of South Asia.



Princely and other tales from the Raj

The Indian princely states were by no means negligible in terms of size and political and military presence. They comprised two fifths of South Asia's territory and about one fifth of its population, at the time when the British Crown took over the control of the remaining provinces from the English East India Company in 1858. The Indian print-run of *India's Princely States. People, Princes and Colonialism*, a book jointly edited with Dr Biswamoy Pati of Delhi University, employs a multi-disciplinary approach. It focuses on literary representations of Indian princes in British novels, aspects of political economy and legitimacy, military collaborations, gender issues, peasant movements, health policies and the mechanisms developed by the British colonial power to control the states.

The theme of health care in princely India is the focus of another collaborative project, funded for three years by the Wellcome Trust and lead by Professor Ernst: 'The History of Public Health and Psychiatry in the princely states of Mysore, Orissa and Travancore'. This initiative is undertaken, with the assistance of two research assistants, in collaboration with Dr TV Sekher, a social demographer, based at the International Institute for Population Sciences (IIPS) at Mumbai, and Dr B Pati, a social historian from Delhi University. Cholera prevention, water supply and drainage systems as well as influenza and psychiatry will be the main focus in the forthcoming book.

Professor Ernst is not alone in the School of Arts and Humanities in her interest of South Asia. Other related initiatives were featured at a recent symposium at Brookes. It was attended by Brookes colleagues and research collaborators based in the School of Life Sciences at Brookes; Queen Margaret

University, Edinburgh and the Centre for Studies in Social Sciences at Calcutta (CSSSC). The featured projects included:

- Opium and Addiction in Assam
- Framing Alcohol as a Medical Problem in Bengal
- Visual Sources on South Asian History
- Printing, Publications and Narrative Conventions in Bengal
- Ephemera and Representations of Empire.

Some of these initiatives have already attracted funding and research is in full swing. For the remaining planned activities, funding applications have been put forward. Collaborators include **Professor Jeya Henry** (Oxford Brookes, on alcohol); Dr Projit Mukharji (now McMaster University Canada, on addiction, alcohol, visual sources, printing and ephemera); Dr Bodhisattva Kar (CSSSC, on addiction, visual sources and printing); Professor David Finkelstein (Queen Margaret University); Professor Claire Squires (Stirling University); **Dr Jane Potter** (Oxford Brookes, on printing); and **Dr Tapti Roy** (Oxford Brookes, Research Associate in History, on printing).

This summer, Professor Ernst will bring to fruition two other projects, when Brookes-sponsored visiting fellows will be at Oxford. She will work on a book on *Mad Memsahibs. Mental Illness in India – fact and fiction*, together with Dr Indrani Sen (English, Delhi University), and on *Leprosy and Mental Illness*, with Dr B Pati (History, Delhi University).

It is hoped that postgraduate student exchanges and joint, split-site supervision of PhD students will soon complement the current South Asia research initiatives.



Bonding with baby: health visitor assessments of **mother-infant** interactions

Dr Jane Appleton and **Professor Margaret Harris** report on a pilot study to evaluate health visitor assessments of mother-infant interactions in the post-natal period.

Background

A crucial component in early child development is the establishment and maintenance of a healthy, warm and reciprocal relationship between a mother and her newborn infant (Bowlby, 1969; Gerhardt, 2004). However, a substantial number of mothers encounter problems in establishing this basic emotional connection with their infant during the post-natal period, for a variety of reasons. For example, for some it may be experiences in their own childhood which make it difficult for them to relate to their infant; for others it may be that the infant's temperament poses a challenge that they find hard to meet (Sutter-Dallay et al., 2003), while others may experience postpartum depression (Murray and Cooper, 1996; Morrell and Murray, 2003; Murray et al., 2003). Such difficulties are commonly exacerbated by limited support being available from a partner or wider social network, or other disadvantaging factors.

Health visitors provide a crucial interface with new mothers in the period following the delivery of a new infant. If the health visiting service is well resourced health visitors are uniquely placed to detect incipient problems in the development of the mother-infant relationship (NICE, 2006) and to mobilise appropriate support and intervention at a time when it can be of most benefit (DH, 2007; DH, 2008). Typically, these professionals rely on a combination of clinical judgement (Appleton and Cowley, 2008) and tools such as the Edinburgh Postnatal Depression Scale to

make an assessment of the extent and nature of a client's difficulties, and to decide on the most appropriate form of further support to offer. Thus, the assessment decisions made at this point are of key importance to the successful resolution of mother-infant difficulties through the provision of appropriate services.

The study

The study is funded by a research grant from the Burdett Charitable Trust for Nursing and involves collaboration between Dr Appleton and Cat Moore in the School of Health and Social Care, Professor Margaret Harris, Department of Psychology, and John Oates, a Developmental Psychologist from the Open University.

The aim of our pilot study was to find out more about how health visitors evaluate the quality of mother-child interactions. Ethical approval for the study was gained from the School of Health and Social Care's Research Ethics Committee and the NHS National Research Ethics Service. In Phase one, first time mothers living in one Primary Care Trust area and their 6-12 week old infants were invited to participate in the study. Each mother's interaction with her baby was observed and videoed for approximately 20 minutes. Mothers were asked to play, hold and interact with their baby as they would do at home and we observed a range of care routines and play activities within the Brookes Babylab, a purpose-built video observation laboratory. Mothers were also asked to complete a set of psychometric questionnaires and to

provide demographic data. The video recordings from this phase of the study have been analysed to derive a number of objective measures of the quality of the interactions, including mothers' responsiveness and talk with their infants. Phase one of the study is now complete.

In Phase two, a sample of twelve health visitors were asked to rate and assess three minute clips from nine of the video recorded mother-infant interactions; these were further explored through in-depth interviews. The twelve health visitors were recruited from a different PCT to the new mothers and data collection has taken place. Qualitative analysis of this data is currently underway and we are interested in identifying what constructs health visitors are using in making their judgments about mother-infant interactions.

By comparing our objective measures with the health visitor evaluations, we will be able to find out which aspects of the interaction influence the evaluations. For example, we may find that health visitors differ from one another in the particular aspects of an interaction that they focus on and we may find that some dimensions are more reliable than others. Outputs of the study will include published research papers and practice guidance for health visitors' post-natal assessments of mother-infant relationships. We hope that this will lead to the development of new materials to be used nationally for the training of health visitors and that these will improve the appropriateness and effectiveness of early intervention public health nursing services.

Optimising human performance: the work of the **Movement Science Group**

By **Dr Johnathan Collett**, Research Fellow in Movement Science and **Dr Janet Cockburn**, Visiting Research Fellow, School of Life Sciences

The Movement Science Group (MSG), based in the Human Performance Laboratories, is multidisciplinary and has excellent clinical links with the Oxford Centre for Enablement, Nuffield Orthopaedic Centre, Oxford Centre for Functional Imaging of the Brain and the Department of Clinical Neurology, University of Oxford.

The MSG uses fundamental and applied research to evaluate factors affecting optimal human performance in health and disease. Its activities are overseen by a steering group consisting of researchers and lay members (Service User Researchers). Drawing upon the diverse range of personal and professional experience of members, the steering group provides examples of good and bad practice, advice, information and guidance to the MSG, on the planning, delivery, evaluation and dissemination of its work. This fusion of expertise has enhanced the development of research, training and education for health and social care professionals at all levels, from work experience to postgraduate education and research. We strongly believe in a non-hierarchical approach, with one priority being to involve students in our activities as much as possible. Undergraduate students undertake group research projects with MSG postgraduates as a major part of their assessment in our Neuromuscular Physiology module. We regularly recruit honours project students to work alongside our research teams and several students have been cited as authors on our publications.

Studies

The Movement Science Group is researching a range of rehabilitation and exercise strategies for people with neurological conditions, in collaboration

with colleagues including those from the Oxford Centre of Enablement and the Universities of Oxford and Birmingham. We have been funded by private benefactors, the MS Society, Department of Health and National Institute for Health Research (NIHR) to explore the benefits of exercise for maintaining and optimising physical health and well-being in neurological conditions. Studies include:

- evaluating the immediate physiological, and psychophysical exercise performed at different intensities;
- investigating the effectiveness of different intensities of exercise delivered over a 12-week period;
- investigating the effects of restricted fluid intake in people with MS on temperature control, energy levels, balance, and cognitive and physical performance, which are known to accompany dehydration in healthy individuals;
- undertaking a Long Term Fitness Enablement Study (LIFE), which assesses the feasibility of supporting people with long-term neurological conditions, eg Parkinson's disease, motor neurone disease, muscular dystrophy and multiple sclerosis (MS), to exercise in the community. An exercise handbook, developed as part of the support, has been published and is available at: www.brookes.ac.uk/lifesci/lifepass
- exploring exercise responses in children with physical disabilities, with colleagues in psychology, with plans to explore delivery of community exercise and sports programmes;
- exploring adjustment by neurological patients and health care professionals through the use of qualitative methods. Two articles illustrate experiences of patients with neurological conditions and of physiotherapists. These describe barriers and facilitators to activity and hope;
- exploring novel exercise delivery techniques for people who find it hard to move, including use of mental imagery (imagining that you are moving) to treat spasticity and as additional practice for people with neurological conditions;
- looking, with the School of Health and Social Care, at the role of physical activity in the lives of drug users, (see article on page 12).

Practical application of our research and effective exercise prescription is mediated through the Clinical Exercise and Rehabilitation (CLEAR) Unit, which is an integral component of the MSG. Student interns are a mainstay of its activities, with about eight students each year undertaking up to 120 hours of supervised practice. Students can gain a module credit through the work experience, improving their skills



profile and employability. Recent interns have also used their clinical hours to qualify for Register of Exercise Professionals (REPS) Level 3 fitness instructor qualifications. The group has been awarded additional funding from the Higher Education Innovation Funding (HEIF) to develop vocational qualifications to help our graduates gain employment in this area.

We also explore underlying mechanisms affecting performance for people in health and disease so we can develop further interventions.

Projects

We have been supported in several projects by international studentships and funding from the Stroke Association and the Economic and Social Research Council (ESRC), these include:

- long-term effects of focal chronic stroke on the structure of cortical and subcortical regions of the brain as measured by cortical thickness and cortical volume and the relationship of these effects to performance;
- clarification of neural mechanisms underlying dual-task interference during walking. Walking is a complex motor task that places demands on sensory and cognitive systems. Reduced ability to perform attentionally demanding tasks whilst walking, has been reported in older adults and people recovering from neurological disorders and may affect

safe community walking. The relative cognitive demand of walking can be measured by dual-task methodology, in which another, cognitively demanding, activity is performed simultaneously. Performance changes in either or both concurrent tasks indicate the extent of interference between them;

- the efficiency of skeletal muscle and how it responds to low oxygen levels (hypoxia) is another current area of study. Muscles are important for function and critical for long-term health. Hypoxia can result from reduced blood flow or breathing air with low oxygen levels as experienced by people with certain pathologies. We are also exploring a tool to determine muscle recovery following exercise sessions, for use in rehabilitation or sporting contexts.

Some of our work requires measurement of people performing at home in community settings. Objective motion analyses of most conditions are currently carried out in the gait lab, which is time-consuming and cost-intensive. Clinical research and practice, together with health policy guidelines, have identified the need for a valid, inexpensive, simple tool to enable clinicians to perform such analyses.

Supported by the Wellcome Trust, we are addressing these concerns with the goal of developing an effective motion analysis tool for clinical use, thus widening

accessibility throughout the NHS. We are collaborating with the School of Technology to use a prototype tool for monitoring walking performance of people with Huntington disease, aided by university funding and in collaboration with a European Huntington Disease Network (EUHDN) funded study. We are also developing an upper limb device with the School of Health and Social Care.

Motion analysis tools have application in sport and we have explored the biomechanics of horse-rider interaction. This has particular relevance for the analysis of performance of competitors in paralympic events, where the rider's control of the horse may be compromised by their disability. We are working with David Hamer of the British Equestrian Federation to analyse individual strengths and weaknesses of paralympic dressage riders to identify the most suitable horse with which to develop an effective partnership.

The group has strong international links, benefiting from visiting researchers and students with a range of disciplinary backgrounds. We have a wide range of interests and welcome people wishing to work with us. Further details about our work and findings can be found at www.brookes.ac.uk/lifesci/research/groups/humanmedbio/movementscience

Problem drug use and physical activity: an emerging research collaboration

By **Professor Jo Neale**, Professor of Public Health, School of Health and Social Care and **Professor Helen Dawes**, Reader in Exercise Physiology, School of Life Sciences

At first glance, there is probably little immediate connection between the work of Dr Helen Dawes on the biomechanics and energetics of human locomotion and my own work on substance misuse. However, put two researchers together and you can soon make unexpected connections. One of Helen's key interests is monitoring and improving safe mobility, activity and fitness levels in patients with long-term neurological conditions. It was not long before we had established a common interest in the role that exercise and physical activity might play amongst those with long-term complex drug problems.

Amongst the general population, physical activity is associated with positive health outcomes. These include physical benefits, such as disease prevention and improved cardio-respiratory and musculo-skeletal health, but also mental health benefits, including reductions in stress, anxiety and depression and increases in self-esteem and self-efficacy. Beyond this, physical activity can be very enjoyable, with organised exercise and sporting activities often providing individuals with opportunities to socialise and meet new people. It seems reasonable to assume that physical activity will have similar benefits for problem drug users, irrespective of whether or not it might also help them to reduce their drug consumption.

We were fairly confident that there was little existing research on problem drug use and physical activity, but managed to secure a small amount of money from the university's Health Research Theme in order to undertake a scoping review of the literature. This was completed at the end of 2008 and confirmed that there is limited evidence in this area. Once the literature review was finished, we began to talk in terms of undertaking piloting work to underpin a large externally funded study. After further reflection and discussion, we decided that prisons would constitute a good research setting. However, we recognised that we would benefit from some additional external expertise and thought carefully about potential collaborators.

We already had a good contact in Dr Nat Wright, Clinical Director for Leeds Prisons and University of Leeds. Before long, we also identified and made positive contact with Dr Emma Plugge and Dr Charlie Foster, two senior researchers from the Department of Public Health, University of Oxford. Together we comprise an interesting multidisciplinary team with professional backgrounds in medicine, physiotherapy, health promotion, and social work. Collectively we also have relevant expertise in researching drug users and prisoners and undertaking different types of studies (qualitative interviewing, focus groups, surveys, observational studies, and trials).

A successful application to the University Central Research Fund in 2008 has enabled us to begin our piloting with three small studies.

Study 1: two focus groups conducted with drug users (males and females separately) who are currently living in the community, but who have recently been in prison.

Study 2: two focus groups conducted with prison staff (one in an all-male and one in an all-female prison).

Study 3: the collection of a range of basic demographic, anthropometrical and physical fitness data from 25 male prisoners.

To date, we have secured ethics approval for, and conducted, our four focus groups (studies 1 and 2), with assistance from two prisons and a local drug service. A detailed research protocol for study 3 has also been prepared and the necessary ethics and governance applications have been submitted, so we are awaiting the outcome of these before we can proceed with taking the prison exercise measures.

In the meantime, our team has grown with the arrival of **Carly Wheeler**, who has a university-funded PhD studentship to explore the role of sport and exercise in recovery from problem drug use, and two Early Career Fellows, **Jan Fischer** (Health and Social Care) and **Dr Johnathan Collett** (Life Sciences), whose respective remits include some cross working in relation to drug use and exercise. Already, the piloting work is proving very interesting, and we look forward to it resulting in one or more larger studies that will in due course have an important impact. However, there are two additional issues that deserve a mention. Firstly, we have really enjoyed being part of an emerging team of enthusiastic researchers with very different backgrounds and experience. Secondly, we are delighted that Oxford Brookes has again demonstrated an on-going commitment to understanding, and improving the lives of, one of the most marginalised and stigmatised groups in society – those who experience complex drug problems.



Lucy Pickering is a research fellow working with **Professor Jo Neale** in the School of Health and Social Care and Dr Sarah Nettleton from the University of York. Here she reports on a study exploring the everyday factors which help and hinder people in recovery from heroin use.

Research with heroin users: a rewarding experience for all

Our study, 'A Sociological Investigation into Everyday Lives of Recovering Heroin Users' has been rewarding and enjoyable to work on, if for no other reason than the enthusiasm and generosity which so many participants have brought to our work.

The study, which is funded by the Economic and Social Research Council, involved interviewing 40 people (22 men and 18 women), in recovery from heroin use, with follow up interviews with 37 of them. In one follow up interview, a woman in her early thirties told us that, while the offer of £15 in high street vouchers had been a motivator for her to participate originally, she wanted to do the follow up interview for its own sake, because she wanted to help with the study. This was a sentiment repeated throughout numerous interviews; as one woman explained, 'anything to help others in my situation'.

Some participants went out of their way to recruit others to the study by using their own personal networks, despite the lack of financial or any other incentive offered by the team for this. While no new participants actually entered the study through these routes, the efforts that people put in impressed us. Not only were they clearly committed to their own participation in the research, and the positive benefits that could accrue to them from participating, they also demonstrated a profound commitment to making the research successful overall.

In addition to helping with the research, a number of participants demonstrated their desire to help others by participating in

unpaid voluntary and community work. This included working in charity shops, mental health charities and drug treatment settings. One woman, who was doing very well in treatment, described volunteering in a charity shop as a condition of her probation. When I asked if she was going to continue volunteering once she had ended her probation, she replied that she was, and even offered me a staff discount on anything bought in the shop while she was behind the counter!

A significant proportion of participants were involved in Narcotics Anonymous, which is an international association of support groups for recovering heroin users; many of these individuals derived an evident sense of self-worth from actively contributing to its running. One woman, who was doing well initially in treatment but then relapsed the night before the second interview, was still intending to re-connect with her local Narcotics Anonymous group because she could see the many benefits of supporting and being supported by others.

Several participants also volunteered with drug treatment organisations and over the course of the study, one started working full time in a drug service. In addition, two got jobs working with people arrested for drug and alcohol trigger offences, to help them to access support services.

A wide array of social science research has investigated the impact of volunteering on people, highlighting an increased sense of social integration and consequent positive mental health effects; this includes

a sense of self-validation deriving from helping others, and a sense that one is making a difference in the world.

It is clear that the drug users in the study understood and experienced these positive effects. Many clearly grew and flourished through helping others in need, passing on knowledge about and the personal experience of recovery to others still in active drug use, and making the world – or at least their local community – a better place.

As Aristotle once said, 'Which way of life is the most desirable – to join in with other citizens and share in the state's activity, or to live in it like an alien, absolved from the ties of political society?'

Recovering heroin users are people who have felt, or still feel, very much on the margins of society and alienated from its core. Yet through assisting with the study, through voluntary work, and, for some, through paid work stemming from this, all were able to join in social and community life and derive a sense of self-worth from it. In so doing, they not only increased their own sense of self-worth and life satisfaction, but provided us with valuable assistance and validation of the meaning of the work we were doing. Without their patience, help and guidance, this study would have been much harder to conduct. The research team remain indebted to each and every participant, and to each and every drug user, whether in recovery or still in active use, who went out of their way to give us assistance and make the project a success.

Prevention Science: an emerging multi-disciplinary field

By **David Foxcroft**, Professor of Community Psychology and Public Health, School of Health and Social Care

The field of prevention science represents a multi-disciplinary endeavour to consider aetiology, epidemiology, intervention design, effectiveness and implementation for the prevention of a variety of health and social problems. These include, but are not limited to, substance misuse, sexual health and teenage pregnancy, HIV/AIDS, mental illness, delinquency, diet/nutrition, and chronic illness. A common characteristic is the importance of behaviour as a determinant of ill-health and health inequality.

Why is it needed?

The incoming EC Commissioner for Health and Consumer Protection, John Dalli, said in his opening address that the unequal distribution of health outcomes across the EU posed 'a challenge to the EU's fundamental objective of solidarity and cohesion', and that 'to secure sustainability we must focus on prevention. Alarmingly, 97% of health spending across Europe goes on treatment as compared to only 3% on prevention'.

In the UK, the recently completed Marmot Review of Health Inequalities included some blue sky thinking from Task Group 5 which fuses the logic of prevention with the sustainability agenda. 'After the budget cuts of 2011-16, the architects of the health system recognised that it could never meet the insatiable needs and wants of a population hooked on medical interventions...' and so 'the model shifted rapidly towards prevention,' it stated.

Prevention science is a new and growing multidisciplinary scientific field, with strong coverage in the US, including a scientific society, methodology groups and networks, and a growing impact journal. Recent initiatives in the UK and Europe are seeking to emulate this strong coverage across the European Community.

European and US societies for prevention research aim to advance the science base aimed at improving human health and well-being and addressing health inequalities. Cornerstones of this advancement are: cross-disciplinary networks of scientists, policy makers and practitioners, methodology development, promotion of higher education and career development in prevention and implementation research.

Prevention science at Oxford Brookes

Researchers in the School of Health and Social Care (SHSC) have been steadily

building a profile in prevention science, through a number of research projects, knowledge transfer activities, and plans to develop postgraduate teaching.

Research

Through systematic reviews focusing on substance misuse we have looked at the effectiveness of drug and alcohol misuse prevention programmes for young people, the impact of alcohol marketing on children and young people, the performance of screening instruments in brief intervention programmes for alcohol misuse, and trends in alcohol consumption in the UK over the past 20 years. These research projects have been supported by the World Health Organisation (WHO), the International Cochrane Collaboration, the European Commission and several research charities.

SHSC researchers have also been involved in randomised controlled trials of the Strengthening Families Programme, social normative feedback, school-based curriculum for drug and alcohol prevention, and techniques to reduce unintended teenage pregnancy. These studies involve collaborations with other universities and have been supported by a number of external funding bodies including the Medical Research Council and the Economic and Social Research Council. Researchers are also studying health visitor assessments of mother-infant interactions so that early preventive action can be taken where mother-infant relationships are not developing well (see article on page 9).

Knowledge transfer

The Strengthening Families Programme for Young People aged 10-14 (SFP10-14) was highlighted in a WHO sponsored Cochrane systematic review undertaken from the School of Health and Social Care. A funded project followed to adapt the SFP10-14 from its original American format for use in

UK prevention settings, and led to the establishment of the My Strong Family Centre to develop and deliver training in the SFP10-14 across the UK.

More recently, through the writing of a new book, *Drug Policy and the Public Good*, researchers in the school developed an interest in how effective early classroom behaviour management can promote pro-social behaviour and reduce substance misuse, mental illness, and other issues into young adulthood. Through a Knowledge Transfer Partnership, we are now working with Oxfordshire County Council to adapt and test one classroom behaviour management programme, the Good Behaviour Game with primary school children aged 6-7 years-old.

Postgraduate teaching

We also have plans to develop a master's level programme that emphasises prevention. It became clear there is a distinct national and international 'market' for such a programme over and above existing master's level provision in both the school and in the Department of Psychology. Alongside this, we are also discussing the possibility of a European Master's in Prevention Science, in collaboration with Karolinska Institutet, Sweden and Avogadro University, Italy.

There are strong indications that this field will have significant growth over the next twenty years. We have the beginnings of a strong platform in prevention science and, with institutional support, we are in a good position to take a lead in prevention research and teaching nationally and internationally.

For further information, or to find out if your module can contribute to the planned master's programme, please contact david.foxcroft@brookes.ac.uk

Sitting playfully

Dr David Porter and researcher Will Wade, School of Health and Social Care, have been investigating whether the regular use of computer games – specifically those requiring upper body movement – can have a developmental effect on the sitting ability in children with cerebral palsy. Dr Porter reports on the study.



Introduction

Cerebral palsy is an umbrella term covering a whole range of disorders, but what all children with cerebral palsy have in common is difficulty controlling their movement and posture.

More severely disabled children, with bilateral cerebral palsy, are unable to walk and spend most of their time sitting. They experience difficulties with maintaining their sitting balance and this can limit their participation in activities. Improving postural control, in particular their sitting ability, is important as it can lead to improved comfort, functional ability and independence.

One way of trying to improve sitting ability is through the use of training exercises. However, there is a growing recognition that the use of traditional abstract training tasks alone can give an incomplete picture of the child's capabilities and require more meaningful tasks. In the context of a child's life, it seems appropriate that training should be based on playing games, giving the child the opportunity to experience the fun and social inclusion such activities provide.

Method

The children and young people involved in the study, aged between 5 and 16 years, had sufficient vision and cognitive ability to understand and play simple computer games. As a result of their cerebral palsy however, all had a physical disability which meant they were unable to maintain a symmetrical sitting position and their balance for more than a few seconds without support.

A simple platform, based on a modified games controller was provided to each child. Once connected to a PC, the

platform could be used instead of a joystick to control on-screen characters and activities within various software games. The participants shift their centre of pressure while sitting on the platform by moving their upper body, for example by moving forward to make a rabbit jump from one moving log to the next on a river; or by moving forward, back and from side to side to steer round a maze.

The platform, originally developed by a team at Reading University to investigate postural sway in adults with stroke and head injury, comprises four air-activated pressure switches between two flat boards. The design size was modified so that it could be used with children and had adjustable sensitivity for each child, depending on how far they were able to lean their upper body and then return to their original position without losing balance.

Children in the study were randomly allocated either the games platform or a control intervention of passively watching DVDs, and swapped after three months. Sitting ability was assessed at regular intervals using recognised and validated tools. A brief semi-structured interview was carried out with the participant, parent/guardian and teacher to assess their perceptions of the user-friendliness of the equipment involved, and of any changes in sitting ability resulting from use of the gaming platform.

Results

Preliminary results suggest that the use of the platform can help to improve certain aspects of sitting ability, in particular balance, stability, and the profile of the spine. Uncontrolled body movements, which tend to make the task of sitting more

difficult, also appeared to be reduced.

The informal interviews provided a valuable insight into the use of the equipment, problems and perceived benefits. Some families reported that it was not easy to find time to set up the equipment and also to assist the child. However, other families and teachers thought that by using the platform, the child could interact with classmates, siblings and parents and it gave them the confidence to move while sitting unsupported.

Discussion

Despite the limitations of this small scale exploratory study, it did appear to suggest that use of the game platform may help to improve some elements of sitting ability. The observation that using this sort of approach can be fun and the children can be motivated to carry on with the activity, is very important as it makes this sort of intervention more sustainable.

School and community based therapy services often struggle to provide individual children with the therapy time they would ideally like to provide and the child needs. Activities such as the one described here may therefore have an important place in helping towards achieving and maintaining the same therapeutic aims.

It is interesting that since the study started, the Nintendo Wii, a games console controlled by movement, and other similar systems are now being used by health professionals and parents, in the belief that these may have some therapeutic benefit. As this research demonstrates, it may well be the case, but careful and well thought out activities need to be found (or developed) and further research undertaken, in order to inform practice.

Are you on Brookes **RADAR**?

By Rowena Rouse, RADAR Services Development Manager

RADAR (Research Archive and Digital Assets Repository) was launched as the institutional repository for Oxford Brookes University on 16 October 2009. The RADAR team demonstrate here how the repository meets three different needs within the Brookes research community.

RADAR and the Research Excellence Framework (REF)

One of the main reasons for having a repository is to store, discover and make freely available research outputs from the university. This means research at Brookes will be more visible and accessible, encouraging opportunities for collaborations and increasing impact through increased citations.

The production of RADAR is being helped through the support of Professor Diana Woodhouse, Pro Vice-Chancellor for Research and the Research and Business Development Office (RBDO), as details of all outputs to be considered for the REF in 2012 will be required to be on RADAR. Tasked with assisting schools to make this happen, Rowena Rouse has been appointed as the Repository Services Development Manager, based in the library. All deposits will be mediated by the RADAR team, who will check which version of a journal article can be placed in RADAR and endeavour to obtain the correct version from the academic. Perhaps surprisingly, the author's final version (sometimes called postprint), can often be placed within RADAR, so it is a case of getting authors to think RADAR when they are sending the final version off to publishers.

Primate Conservation

Steve Burholt, e-learning developer, is the RADAR team member establishing the teaching collection. Steve was approached by the School of Social Sciences and Law, who had a collection of images of primates they wished to make available and enquired whether RADAR was the right place for them. RADAR is a multimedia repository which can take items in many formats including sound clips, images, film and datasets so certainly is the place for digital collections.

Preparatory work needs to be done for such a collection, for example, checking the image rights and creating a suitable metadata structure to ensure easy searching. Links will also be made to relevant papers within the RADAR research collection.

Pedagogic Research/Joint Information Systems Committee (JISC) Learner Experiences of e-Learning

Dr Rhona Sharpe from the Oxford Centre for Staff and Learning Development (OCSLD) approached us about including pedagogic research in RADAR. With a database of publication details, she saw RADAR as a way of raising the visibility of this information, by making the full text of the publication available and discoverable via Google. A research assistant was appointed by OCSLD to help with data entry and RADAR carried out the checking and uploading of the journal articles. There are now over 120 items within this collection.

This project served as a good model because someone in the school was dealing with the initial data entry and contacting academics for the correct versions of their papers. We are hoping to implement the same model for the general research collection, where it will be the responsibility of an individual in the school to liaise with the RADAR team.

OCSLD has another collection relating to the JISC Learner Experiences of e-Learning project, where the funding body has stipulated that the outputs must be made freely and publicly available. Placing them within RADAR fulfils this requirement, thus encouraging wider dissemination of research results across the UK and international HE community.

RADAR is also being used for sharing teaching materials within Brookes and this is available through the Virtual Learning Environment (VLE). We are currently developing a way in which staff profiles on school web pages can be automatically populated with links to their publications on RADAR, reducing duplication of effort in updating and maintaining the website. You can listen to Dr Catherine Hobbs from the School of Technology talking about the benefits of RADAR for researchers; access help and guidance about RADAR and search the RADAR collections at www.brookes.ac.uk/go/radar

**OXFORD
BROOKES
UNIVERSITY**

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

Oxford Brookes promotes equality of opportunity for all who study, work and visit here. For more details please visit www.brookes.ac.uk/services/hr/eod or phone +44 (0) 1865 485929.