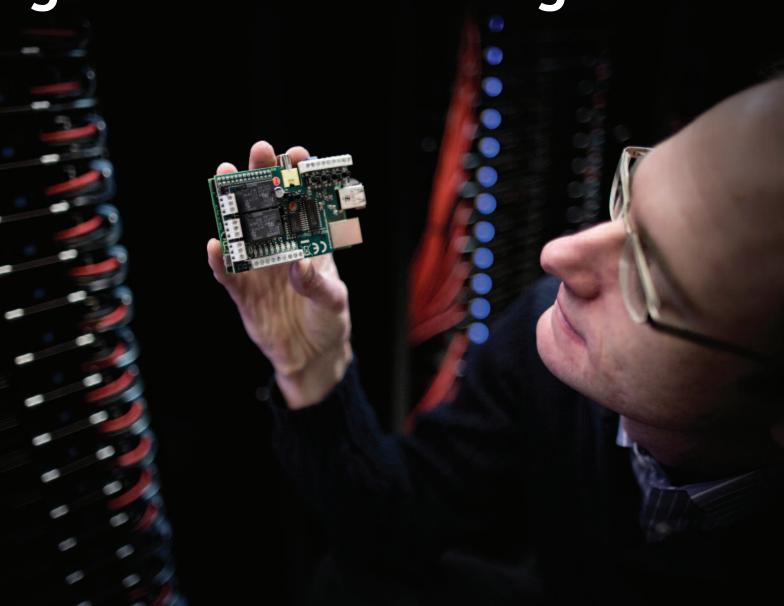




The free magazine for The University of Manchester

## Investing in Success gives food for thought



### Message from the President

If you haven't yet heard about 'MOOCs', it's likely that you soon will. Mass, open, on-line courses (MOOCs) were a growing news item in 2012, with articles appearing in the higher education and wider press across the world.

hile there is no widely accepted definition of MOOCs, their key features are open access, ie: they are currently free to participants, no entry qualifications are required, they are designed to support an unlimited number of participants and as yet, very few include any form of qualification or accreditation. This may change in the future.

Some argue that MOOCs are set to radically change the nature of universities with a massive growth in on-line, distance learning and a concomitant reduction in the numbers of students opting for traditional 'on campus' education.

MOOCs present a new form of open education. Since anyone can register onto a MOOC, without charge or any qualifications, they are attractive to those who do not have the financial resources to meet the growing costs of university education, or who do not have classical qualifications. They also allow participants to study at their own pace.

The potential for MOOCs to deliver distance education to hundreds of thousands who would not otherwise have access to such courses is obviously vast – they could be considered as a huge step forwards in widening participation.

They also have the potential to provide a unique window on universities that offer popular and valuable courses, they may attract some participants to subsequently register for formal fee-paying programmes at the same or other universities and are likely to facilitate innovative new modes of on-line education.

Several organisations, mostly in the United States, work with universities to provide MOOCs. Two of these, Udacity and Coursera, were established from Stanford University as 'for profit' organisations, funded to date from private investors providing venture capital. By contrast, edX is a non-profit venture arising from Harvard University and Massachusetts Institute of Technology (MIT).



All three organisations partner with leading universities in the USA and a growing number in the rest of the world. Their courses attract tens of thousands of people, and some boast over 100,000 registered students, though very much lower numbers complete the full course.

For example, over 150,000 people globally registered on one of MIT's electronics courses, most were older than traditional students; but only just over 7,000 completed the course – this is though still an impressive number.

Just before Christmas, the Open University led a consortium of British universities which will provide a new platform for free, on-line courses.

However, it is still very early days for MOOCs. The quality of the education provision is highly variable, with many courses offering only recordings of lectures and delivery is particularly challenging in disciplines that require practical classes, research projects or extensive library access.



### Contact us

### News and story ideas

Mikaela Sitford tel 0161 275 2112 email uninews@manchester.ac.uk www.manchester.ac.uk/staffnet/news Deadline 13 February 2013

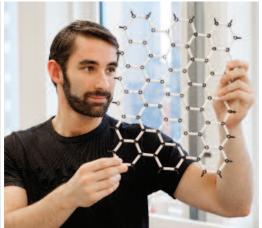
### **Events and listings information**

Philippa Adshead tel 0161 275 2922 email unievents@manchester.ac.uk Deadline 13 February 2013

### Ads

Ruth Middleton tel 0161 275 2922 email uniads@manchester.ac.uk Deadline 13 February 2013

Next issue 4 March 2013



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Everything you want to know about graphene



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Most MOOCs do not have examinations, or offer only peer assessment which does not lead to any formal qualification or progression onto degree programmes, but some MOOCs are now being considered for credit equivalency.

The effort and resource required to deliver high quality open courses to huge audiences cannot be underestimated. An obvious route is to build on existing distance learning provision. Many universities, including ours, use several modes of on-line learning for students on campus and offer distance learning, normally through a combination of on-line and face to face teaching.

In total, over 7,300 students participate in distance learning degrees at our University, though many spend part of their time studying here on campus or at collaborating institutions. Manchester Business School Worldwide (MBSW) offers such 'blended' and accredited degree programmes to over 3,000 students per annum, normally studying for Masters qualifications, and has offices in six cities globally.

At present, a viable business model has not been identified for MOOCs, though several options are being developed, including free enrolment with modest fees charged for examinations and certification.

This has the potential to be scaled-up to a range of fees for different levels of engagement such as library access, tuition and more formal qualification, potentially leading towards attainment of a full degree. Some providers are considering charging future employers for access to the most talented students enrolled on their MOOCs.

The attraction of MOOCs, completely open access to vast audiences, is also a limitation, since wider engagement with participants requires very considerable resource. Even limited feedback or examination becomes a major task if there are several thousand students in the class.

At The University of Manchester, we have been considering various ways of extending distance, on-line learning and are likely to first test a small number of our programmes as full MOOCs in partnership with an established provider.

On-line learning is increasingly important, even to our own full-time campus-based students. It provides opportunities for greater diversity in the ways in which we provide education, ranging from largely face-to-face, to almost exclusively distance and open, and there is obvious synergy between the material that we produce for our own students and that which might be made more widely available.

It is far too early to tell if the predictions that MOOCs are set to change the very nature of higher education will be true. Some argue that given the challenges, they will soon 'evaporate' as many previous open education models have done.

But they certainly provide considerable opportunity for widening higher education, are a means of raising awareness of our University to audiences of tens or hundreds of thousands, and are well worthy of serious consideration.

Professor Nancy Rothwell, President and Vice-Chancellor



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Front cover:

Dr Andrew Robinson and his 'PiFace' mini computer. Photo by Mark Waugh.



## Whitworth breaks ground on 21st century development

he Whitworth Art Gallery broke ground on its new development project, to transform the 120-year-old Gallery and create a new experience for visitors.

The £12 million project includes a stunning glass wing to the north of the building, doubling the display space and connecting the building more directly with the surrounding landscape.

In addition there will be an art garden, a new main entrance to welcome visitors directly from Whitworth Park, a new study centre and a promenade gallery leading to the South Wing, comprising a new cafe and a learning studio opening into the art garden.

Gallery Director Maria Balshaw says: "It is hugely exciting to be at the point now of beginning the building work. It has taken many years of hard work by many people and of course we are extremely grateful for the support of the Heritage Lottery Fund, the University and many other funders to make this happen."



(I-r) Nancy Rothwell, Maria Balshaw and Sara Hilton, head of Heritage Lottery Fund North West

## Sharing ideas to help mums and babies

With the rate of stillbirth in the UK at one in 200 pregnancies, Manchester recently hosted a gathering of international experts to share their research on new ways to help mums and babies.

A specialist research team from the Tommy's Maternal and Fetal Health Research Centre, a partnership between St Mary's Hospital and the University, gave presentations on research focusing on the placenta alongside leading experts from Norway, USA, Birmingham, Cambridge, Edinburgh and London.

The two-day event looked at the causes of stillbirth, ways to identify high risk pregnancies, and new ways to try to prevent stillbirth.

### Scanner benefits for all

atients across Manchester will benefit from a new state-of-the-art MRI scanner, which was officially opened by Professor Ian Jacobs, Vice-President and Dean of the Faculty of Medical and Human Sciences and Director of Manchester Academic Health Science Centre (MAHSC).

Professor Jacobs and Mike Deegan, Chief Executive of Central Manchester University Hospitals NHS Foundation Trust (CMFT), unveiled the Philips Achieva 3T MR System, which will be available to a large number of University researchers.

The scanner – offering higher resolution and superior quality images – is hosted by the National Institute for Health Research (NIHR) and Wellcome Trust Manchester Clinical Research Facility (CRF), and funded by the University and the Department of Health/NHS Capital Investment to the NIHR Manchester Musculoskeletal Biomedical Research Unit (BRU).





## Everything you want to know about graphene

n event to let University staff find out the latest about wonder material graphene is being held later this month.

The session comes at a good time - with work about to start on the £61 million National Graphene Institute and with the one-atom material never far from the headlines.

Speakers will include Nobel Laureate Professor Kostya Novoselov and President and Vice-Chancellor Professor Dame Nancy Rothwell.

There will also be a number of researchers who work with graphene there, on hand to give details of the latest developments and answer your questions.

It is hoped the event will also encourage greater inter-disciplinary research across the University.

"Graphene: Unexpected Science in a Pencil Case"will take place on Tuesday 26 February in Lecture Theatre B, University Place, from 4pm-5.30pm.

If you'd like to attend you need to register in advance at:

https://selectsurveys.humanities.manchester.ac.uk/TakeSurvey.aspx?SurveyID=92KL4n3K.

You can also send in your questions to the experts to: graphene@manchester.ac.uk

## Astronomical award

Professor Michael Kramer has been awarded a prize for outstanding merit in observational astrophysics.

His research, which uses the telescopes at Jodrell Bank, received the 2013 Herschel Medal from the Royal Astronomical Society.

## First look at new graphene centre

Here's a first look at the National Graphene Institute (NGI) which will be the UK's home of research into graphene – right here on campus.

The NGI will provide a place for researchers and industry to work together on a huge variety of potential applications for graphene.

It is hoped the 7,600 square metre building will initially create around 100 jobs, with the long-term expectation of many thousands more in the North West and more widely in the UK.

• See how graphene can help beat the drug cheats on page 14





## Triple delight at biotech awards night

The University celebrated a triple success after taking three top honours at the Bionow awards for biomedical organisations in the north.

Biomedical project of the year went to Dr Curtis Dobson and his team for their 'Microsensor' initiative, while Phagenesis, a University spin-out company founded by Professor Shaheen Hamdy, won healthcare project of the year.

Europtec, a spinout respiratory drug development and contract research business - co-founded by Dr Peter Warn from the Faculty of Medical and Human Sciences - won the 'service company of the year' accolade, making it a University hat trick on the night.

## Contract to spark more research

The University has signed a global framework agreement with EDF, the leading electricity producer in Europe.

The agreement provides a framework for strengthening and extending the existing research collaborations between EDF Research and Development, EDF Energy and the Dalton Nuclear Institute.

## Shots from a rainforest dilemma

hese are just some of the stunning images in a Manchester Museum exhibition, taken by a former University scientist.

Johan Oldekop originally trained as a biologist at the University and has written several papers addressing biodiversity issues with Professor Richard Preziosi at the Faculty of Life Sciences.

The exhibition 'All Other Things Being Equal' is based on Johan's personal research experience and mixes photographs and sounds with graphical representations of socio-economic data and specimens from the Museum's natural history collection.

Follow Johan on Twitter on https://twitter.com/madasascientist





## University reveals the Wonders of Life

he wonderful world of biology is taking centre stage on BBC 2 with the new series Wonders of Life. Not only is the programme being presented by Professor Brian Cox, the University also had a starring role behind the scenes.

Professor of Zoology, Matthew Cobb was one of two consultants on the ambitious series and on the accompanying book. Other Manchester staff involved include the Vice-President and Dean of the Faculty of Life Sciences Professor Martin Humphries, Professor Andrew Loudon and Dr Bill Sellers, who all offered scientific advice to the

programme team and are thanked in the credits.

Matthew explains how the University became involved: "Because Brian was presenting the series he already knew what expertise the University could offer.

"The Faculty of Life Sciences was approached by the producers and we had an initial meeting with a number of academics, including the President and Vice-Chancellor Professor Dame Nancy Rothwell.

"We discussed what aspects of the evolution of life the series could cover from a scientific perspective and looked at the

science behind some of the ideas the producers already had."

Matthew, UCL's Nick Lane and the team from FLS helped to ensure the science in the series was accurate and worked closely with Brian and the producer on the script.

Matthew says: "The final programmes are a wonderful mix of science, natural history and stunning images from some of the world's most dramatic landscapes."

Wonders of Life is currently airing on BBC 2 on Sundays at 9pm.



### **Class act**

The University has paid tribute to Ellen Wilkinson, Labour's first Education Secretary in the 1945 Attlee Government, who studied history here from 1910 to1913.

A more recent Education Secretary, Estelle Morris, unveiled a special display put together by pupils of Oswald Road Primary, the school where Ellen trained as a teacher.

The display can be seen in the building on campus which is named after Ellen Wilkinson, which houses the current crop of trainee teachers, as well as some of the University's world leading researchers in education.

The Labour MP, who died in 1947, was one of the few working class suffragettes, the organiser of the famous Jarrow March of 1936 and the second ever female Government minister.





## Celebrating our 10,000th donor

University alumna Stephanie Sparkes, BA(Hons) Geography 2011, rounded off her year by donating a gift to support scholarships for students from the local area – and became the University's 10,000th donor.

Stephanie made her gift of £20.11 to celebrate her graduation year during the Your Manchester Fund telephone campaign, which aims to raise charitable donations from alumni and friends.

And she chose to direct her gift towards students from the Greater Manchester area who may not be able to attend university without additional financial support, via an Opportunity Manchester Scholarship.

Stephanie said: "I was more than happy to miss a night at the pub and instead give a donation that, alongside others, will ultimately allow people to have the valuable educational experience which I enjoyed."

Director of Development and Alumni Relations, Chris Cox, said, "This marks a real milestone in The University of Manchester's long history of philanthropy. I would like to thank Stephanie and the other 9,999 recorded donors over the decades for their commitment to helping the University and its students.

"The annual fund now provides over £500,000 for student-focused support across campus each year, which, alongside our major gifts programme, is making a meaningful difference to research and learning."

 For more information on the Your Manchester Fund, contact Rob Summers, Annual Fund Manager, on rob.summers@manchester.ac. uk or 0161 275 2192.

## Jobs are the dish of the day

he University's first ever Skills Academy – an initiative to help local people find work in the hospitality industry – has been declared a five-star success.

Fifteen students have already 'graduated' and twice as many have signed up for the new session, which started last month.

But the proof of the pudding is in the eating, as 'graduate' Jordan Hilton can testify.

"I liked the look of this course because it would give me real work experience and a qualification to work in catering," the 19-year-old from Longsight, who has been unemployed for two years, explains.

"I feel really motivated and look forward to getting up in the morning so I can get out of the house and do something that will get me off benefits and in to work."

The course runs three days a week for seven weeks, and all the participants receive support from a workplace mentor to guide and assist them.

The students leave with their City and Guilds in Hospitality and an employability qualification.

Any jobseeker completing the course is also guaranteed an interview with the University itself.



Martin Smith, the University's Executive Head Chef, says: "With 40,000 students and almost 11,000 staff to cater for, food and accommodation is a major operation. We employ people in all the roles you would find in a hotel or restaurant."

The University's Assistant HR Director Steve Grant says: "There are thousands of job opportunities in Manchester's hotels, restaurants and bars. This unique programme has provided these young people with the knowledge and skills to get one of these jobs."

### Elderly care partnership with China

ur University has secured a £1million contract with Yuan Zhen Limited, a Chinese investment company which specialises in providing health and social care for the elderly in China.

The Edward Centre for Health Care Research, jointly led by Manchester Academic Health Science Centre (MAHSC) Health Technology Hub, MIMIT and TRUSTECH, will focus on exploration of care systems, technologies and products that could be developed and adopted for use in China.

The Centre's Honorary Director Professor Jackie Oldham said: "We see this as a great opportunity for collaboration with China and sharing expertise and enabling developments in providing high quality care for elderly people." Peter Bullock, Managing Director of The Edward Centre and Deputy Managing Director of Yuan Zhen UK Investment Ltd, said: "Manchester is the ideal location for many reasons. We are keen to collaborate with Professor Oldham, who is a leading expert in rehabilitation science, and to access the resources of Manchester University and Academic Health Science Centre (MAHSC)."



## Working towards the stars

n the latest in our series on what happens 'behind the scenes' at our University, Teresa Anderson, Director of the Jodrell Bank Discovery Centre, pays tribute to her hard working team as it plays host to the Stargazing LIVE team from the BBC...

The Stargazing LIVE programmes were amazing again this year – and yet again, the effortless appearance on screen belied the huge amount of work which went on behind the scenes to make it all happen.

Work begins on the series long before the 90-strong BBC crew arrives, with early planning meetings taking place in the summer of 2012.

Jodrell Bank's Associate Director, Dr Tim O'Brien, starts script discussions with the producers in September and the BBC's technical teams begin visits with tape measures and site plans soon afterwards.

When the broadcast time comes, the BBC team arrives the weekend before – and the Jodrell Bank team leaps into action finding space for ten

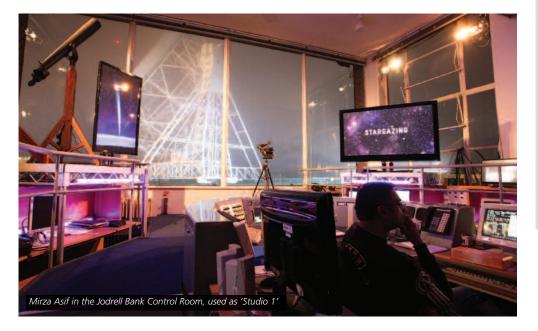
broadcast trucks, desks, internet connections and two meals a day for 90 people.

There's also work to do managing the contributors and the studio audiences (and their telescopes!) as well as setting up science demos, finding props and sorting out the essential things like security and risk assessments.

The science at the Observatory does keep going during the week with as little disruption as possible, but the Discovery Centre's education programme is put on hold while the BBC uses the Space Pavilion as their 'Back to Earth' studio – where presenters Professor Brian Cox and Dara O'Briain front the show that attracts around ten million viewers every year.

And that figure shows just why we do what we do – to engage a huge number of people with astronomy, engage people with the research of the University and inspire the scientists of the future.

Colleagues work late into the night making it all happen and are all exhausted but very happy with the outcome by the end of the week!



## Second Sunburst for Geoff

Manchester academic Geoff Ryman has won the 2012 Sunburst Award for his collection of stories 'Paradise Tales.'

Geoff is a Senior Lecture at the University's Centre for New Writing. The jury described his book as: "A terrific collection of stories covering a dizzying range of imaginative possibilities and narrators."

This is Geoff's second Sunburst Award – his first was in 2005 for his novel 'Air'.

## Public policy is new social media star

A blog by Manchester Professor Colin Talbot, discussing how academics can help shape policy in the UK, has had nearly 5,000 hits in 15 days.

Whitehall Watch – thought to be the most popular personal blog by an individual politics academic in the UK – has 1,400 followers and has had hits from 156 countries, including the United States, India and China.

Colin said: "The blog normally has 5,000 hits a month, which is a good in itself, but has had an amazing 4,800 hits during the first 15 days of 2013. This is a great start to the year in which I am posting some other Manchester policy academics' posts for the first time."

Last year Colin, a Professor of Government and Public Administration at Manchester Business School, founded the Policy@Manchester network for University academics who contribute to public policy.

It has now launched a website to showcase its work; providing a platform to share ideas, events and other activities highlighting our wideranging areas of public policy engagement and creating new relationships between those working on them.

Colin added: "One of the things that distinguishes top universities around the world is that, certainly in democracies, they are usually powerhouses of public policy ideas.

- "Manchester has recognised these developments and is trying something a little different. A survey found we had around 350 colleagues engaged externally in various areas of public policy. Policy@Manchester seeks to capitalise on that."
- To read Colin's blog visit: http://whitehallwatch.org/
- Visit the website at: www.manchester.ac.uk/policy

## Riots spark new arts funding

The Whitworth Art Gallery is a partner in a £5 million arts programme for the under-25s, sparked by the 2011 summer riots.

The Gallery has been awarded £300,000, given by a family foundation set up by the late publisher Paul Hamlyn.

The Whitworth will work with the Tate and other galleries around Britain on a string of events set up by, and run for, young people.

The scheme, called 'Circuit', was created following discussions held after the riots in 2011 and aims to encourage participation in arts and culture.

Director of the Whitworth Art Gallery Maria Balshaw said: "Offering young people the opportunity to develop their own creativity and shape a festival of youth arts will make a vital contribution to the cultural health and wealth of Manchester."





### **David named Local Hero**

niversity student David Ward has been named Local Hero of the Year after a nationwide hunt for the UK's top community champions.

David, a postgraduate in the School of Mathematics, is involved in a string of projects with people with learning disabilities, children from difficult backgrounds and the homeless.

Since 2008, David has been volunteering with Student Action Manchester, the student-led volunteer organisation at the Students' Union.

David is one of the co-ordinators for the Ladybarn Project, which provides activities for a group of teenagers with learning difficulties from around south Manchester.

He has arranged a number of trips to theatres, cinemas, restaurants and constantly finds new innovative ways to make his project even more successful. Not only that, he has completed a 55-mile sponsored walk on three occasions to raise funds for the project.

David has also organised Student Action's homeless outreach projects, which take food and hot drinks to the homeless in the city centre, and volunteers at a Catholic Fellowship Saturday club for people with learning disabilities.

Head of Volunteering and Community Engagement Lindsay Gilbert said: "Student Action would not be in the strong position it is today without David's amazing work. David never recognises what he does is so special. He is a purely selfless person and contributes positively to the community above and beyond what would normally be expected."

Typically, the man himself said: "I really don't think that I deserve it, however, it is nice for the work of Student Action as a whole to be recognised."

### Sweet success for business ideas

sweet treat to bridge the generation gap, a campus pharmacy and an anti-bacterial film that stops the spread of bugs – the three winning ideas from students competing in the Venture Out 2012 competition.

MA Social Work students Joanne Worthington and Phil Kerr won the social ideas category with BakeXchange – an intergenerational baking project that helps young people at risk of exclusion, whilst reaching out to older people in the community.

"I heard about the competition at a social enterprise event during Global Entrepreneurship Week and was inspired by the former students who had been given support to transform their ideas into reality," Joanne recalls. "I would recommend the competition to others – it's not just for business students!"

Pharmacy students Zoe Phillips and Kirsty McFadden won the business category with their idea for a student-focussed campus pharmacy – something not currently available to Manchester students.

"Kirsty and I had been thinking about our business idea for a while," Zoe recalls. "The application form got us to think in more depth about our idea and it developed from there."

And Cristian Menzel, studying for a PhD in Chemistry, won the technology category with Biocide – a self-adhesive anti bacterial film that can be applied to many surfaces to reduce the spread of bacteria.

"It is a good starting point to get more confidence if you have an idea and you want to start your own business," Cristian says.

More than 112 students from across the University entered the competition, which is run by the Manchester Enterprise Centre.

Competition Director Dr Martin Henery concludes: "Manchester is producing world-class students equipped with both the cognitive abilities and practical skills necessary to translate those ideas into products and services that improve the lives of others."

 To find out more visit: https://mec.portals.mbs.ac. uk/Enterpriseforstudents/Co mpetitions/VentureOut.aspx





## More power to pylon project

U

niversity spin-out company Arago Technology Ltd has won an innovation award for its insulating cross-arm (ICA), which could increase the transmission capacity of electricity pylons and reduce their height.

The firm was presented with the Power and Energy Award at the IET Innovation awards ceremony.

Arago's revolutionary insulator was developed by engineers at the University in a joint venture with EPL Composite Solutions Ltd in a £2.5 million project funded by National Grid, Scottish Hydro Electric Transmission plc and The University of Manchester Intellectual Property's Proof of Principle fund. It has been tested at the University's lightning lab.

David Gardner, Director of Transmission for Scottish Hydro Electric Transmission plc, said: "This innovative technology has the potential to deliver a cost effective way of increasing the power carried on our transmission network."

## Meet...

Charlotte Alcock Recruitment, Admissions and Marketing Officer, Faculty of Life Sciences

### What is the best part of your job?

The variety of my role and the diverse group of people I work with. In the last week alone I have run an event for schools, a careers networking activity for alumni and helped out at the Postgraduate Open Day. I have finished off writing a Life Sciences careers guide, planned changes to our website and launched some new student blogs. I am never ever bored in my job!

### What is the hardest part of your job?

Not having enough time to see through some of my ideas.

### Which teacher inspired you the most at school?

My Year 6 primary school teacher Miss Copus was a lovely warm person who made me feel brave enough to go off to the scary world of secondary school.

### What is your proudest moment?

So far, graduation (after six years and starting two different degrees!), but hopefully by next year it will be the arrival of my first child.

### What's your favourite karaoke song?

Any, I am (sadly!) a massive karaoke fan. I do give a very good rendition of Elton John's Rocket Man.

### If you could give any advice to your 16-year-old self, what would you say?

Enjoy being 16 and don't try to grow up too fast, adult life and responsibilities will come along soon enough. Also, furry boots, hot pants and a sequin vest are not an appropriate winter outfit, put a coat on!

### What's the one gadget you can't live without?

My iPhone. I'm not sure how I ever organised myself without the calendar.

### Who would you invite to your dream dinner party?

Nelson Mandela and my mum.

### What law would you repeal?

In Liverpool, it is illegal for a woman to be topless except as a clerk in a tropical fish store. This is a real law, believe it or not!



### And what law would you bring in?

NHS reforms to encourage people to take more responsibility for the effect of their lifestyle on their health.

### What three things would you need if you were stranded on a desert island?

Books, sunblock and my husband he's pretty good at building things so could hopefully build us a log cabin...or even a boat!

### What's your biggest vice? Cheese!

How would you like to be remembered?
With love.

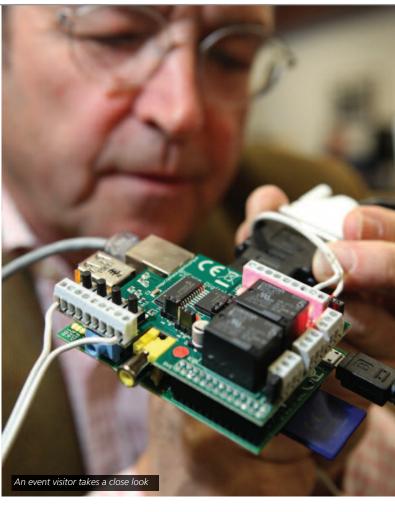
### Tell us the secret to life –

in six words. Work less, love more, eat well!

### **Feature**







## Investing in success gives food for thought

A £1 million initiative to boost staff development - and benefit the University - has resulted in a fascinating array of projects which show just how passionate our people are about their work here at the University.

rom a project telling teenagers about the first signs of cancer, to photographs and film footage of Manchester Museum artefacts helping students on a distance learning course, to repairs to a second-hand swimflume for zoology students, the calls on the Invest in Success funds could not have been more varied.

As President and Vice-Chancellor Professor Dame Nancy Rothwell put it: "I could not have imagined when we launched Invest in Success how our staff would respond with such passion and with so many different ideas.

"The University's greatest asset is its staff – our future success depends on our ability to select and retain the right people and invest in their potential and development. The response to Invest in Success alone has shown us that this is true."

The initiative was launched in November 2011, with 292 applications being put forward, 160 of which were successful.

### Spotlight on winning ideas

Throughout 2013, UniLife will be throwing the spotlight on just some of the projects which gained funding, and are now taking shape.

Here we take a look at Dr Andrew Robinson's dream to turn anyone and everyone into digital makers – people who create rather than just consume technology – currently taking young and old, techie and Luddite, by storm.

Andrew, who is based in the School of Computer Science, has come up with a project with Raspberry

Pi – a tiny, single-board computer, which aims to improve the teaching of basic computer science in schools developed by the Raspberry Pi Foundation.

The number of pupils taking ICT GCSEs and A-levels has fallen dramatically, with the knock on effect that applications to computing and telecoms-related higher education courses in the UK has declined by 44 per cent since 2001.

However, for it to be a success, Andrew knew making it appeal to youngsters and first-time computer users would be key. He realised it needed to hook into real-life applications, be relevant and exciting, inspirational, and easy to use.

So Andrew developed PiFace, an add on for the Raspberry Pi, to be one of the simplest and most user-friendly ways for computers to interface with the world.



PiFace – and the events his team has run to showcase it – has fired up not only youngsters, but adults too: teachers, parents, pensioners and University colleagues, in schools, homes and across the campus. New uses for the gadget are coming out weekly.

- A talking, tweeting chicken to guard dieters' cupboards by not only barking out orders to sneaky snackers, but also tweeting your Twitter account to publicly shame you if you stray.
- Birdboxes that photograph their feathery visitors then Tweet them.
- A front door messenger that tells you if your train is late.
- Feedback boxes for students so they can let their lecturers know if they enjoyed their lecture (or not), simply by pressing a button.

"There has been a real camaraderie around it," Andrew says. "So many different people are picking it up and doing things with it, which is great to see. And they are willing to share ideas – it's a two-way thing.

"It's the opposite of the sleek, sealed Apple Mac box."

### More in the pipeline

More ideas in the pipeline include technology for local people to improve the infrastructure in developing countries like India.

Professor Richard Heeks and the Institute of Development Policy Management are investigating Raspberry Pi and PiFace as a platform for innovation around the world as it is more powerful and versatile than the mobile phones they currently supply to local communities.

The PiFace team plan to send sets to a Kenyan orphanage – whose school has an IT suite but no computers – with team member Tom MacPherson-Pope, who is also on the Student Union group helping the orphanage.

Other University colleagues are using the sets for fieldwork or to automate experiments.

And London Zoo is interested in collaborating to record animal movements, while other sets may be sent to Africa so wildlife can be monitored remotely on iPhones.

### The first spark

Andrew first became interested in science at the age of five, when he and his Dad built a model lighthouse with a circuit for a flashing lamp, and in computer science at seven, when Professor Steve Furber launched the BBC Micro computer. When Steve secured some outreach funding years later, Andrew worked on one of his projects while also doing his PhD.

"It was funny meeting Steve Furber for the first time, he was an inspiration to me," he recalls.

"Outreach is important to me – it's all about opening up the field for anyone to join. Computer engineering is the best job in the world. How many other jobs give you the skills to contribute to just about anything?

"At the Manchester Science Festival, and other events, we really fired the kids' imaginations. After seeing what Raspberry Pi and PiFace could do, we had suggestions including an automated insulin monitor that can dial 999, and another that automatically reorders food when it detects the cupboard is bare. One child even came up with a design for a device that politely reminds you to put the toilet seat down after use!

"I was really blown away with what they came up with and it was great to see because I have memories of science festivals like that."

### All our goals, in one project

Back on campus, Andrew's project has also inspired the School's own students by feeding back into teaching. Third year undergraduates are using the sets for their own projects, while next year's first years will each receive a Raspberry Pi. The students employed by the project to work on events over the summer have gained valuable industrial experience. It was hugely enjoyable for them, with one of them describing it as "the best job ever".

So through Invest in Success, in just one project, the University is achieving all its goals – teaching and learning, research, outreach and social responsibility.

Andrew says: "Investing in Success was instrumental in the project being as successful as it was.

"I could see Raspberry Pi had a lot of potential but I am not going to claim I saw all this coming. I have looked back at my original proposal for Investing in Success and it has surpassed that.

"It's really exciting – it has ignited something in people and they are coming up with interesting solutions to real world problems."

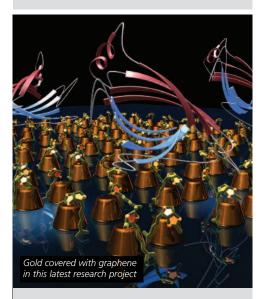
- A video of children using PiFace at the Manchester Science Festival can be seen at www.youtube.com/watch?v=SiME3WU7ao0
- And for a PiFace tutorial visit www.youtube.com/watch?v=s02n7juVZaY
- Andrew would like to hear from anyone who would be interested in learning more about interfacing with computing, either for their research or personal development.
   Email: andrew.robinson@cs.man.ac.uk

## Lesbian and gay history an "invention"

Lesbian and gay activists who use historical role models can inadvertently distort our understanding of the sexual past, according to a cultural historian at the University.

This is because, argues Professor Laura Doan, ordinary people did not think of themselves or others as gay, lesbian or straight until the middle of the last century.

New archival material on women's work and friendships during World War One, discovered by Professor Doan, show that masculine women or same sex relationships from our recent past should be seen differently.



## Graphene helps beat drug cheats

Two potential uses for wonder material graphene have been discovered – detecting the presence of drugs or toxins in the body and dramatically improving airport security.

A team lead by Dr Sasha Grigorenko created a device which potentially can see one molecule though a simple optical system and can analyse its components within minutes. This uses plasmonics – the study of vibrations of electrons in different materials.

The breakthrough could allow for rapid and more accurate drug testing for professional athletes as it could detect the presence of even trace amounts of a substance.

It could also be used at airports or other highsecurity locations to detect explosives or drugs. Another possible use could be identifying viruses people might be suffering from.



### The reason we lose at games

f you have ever wondered why you never seem to win at skill-based games such as poker or chess, there might be a very good reason.

Theoretical physicist Dr Tobias Galla has discovered that some games are simply impossible to fully learn, or too complex for the human mind to understand.

He ran thousands of simulations of two-player games to see how human behaviour affects their decision-making.

In simple games with a small number of moves, such as noughts and crosses, the optimal strategy is easy to guess and the game quickly becomes uninteresting.

However, when games became more complex and when there are a lot of moves, such as in chess, he found that players' actions become less rational and that it is hard to find optimal strategies.

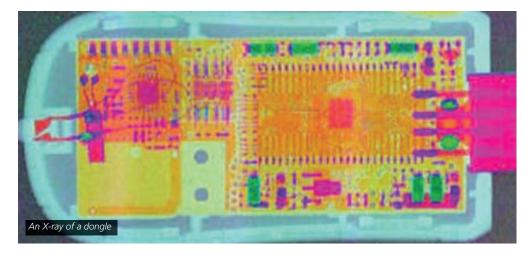
This research could also have implications for the financial markets. Many economists base financial predictions of the stock market on equilibrium theory – assuming that traders are infinitely intelligent and rational.

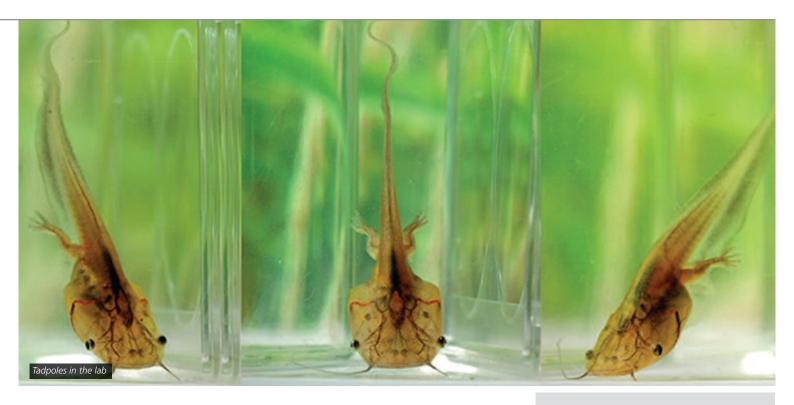
This, the academics argue, is rarely the case and could lead to predictions of how markets react being wildly inaccurate.

### Life through a lens

Professor Robert Cernik and colleagues from the School of Materials have developed a camera that can be used to take powerful three dimensional colour X-ray images, in near real-time.

This could radically improve security screening at airports, medical imaging, aircraft maintenance, industrial inspection and geophysical exploration.





## Surprises in a tadpole's tail

S

cientists at the University's Healing Foundation Centre have made a surprising finding after studying how tadpoles re-grow their tails.

Professor Enrique Amaya looked at the role of chemically reactive molecules containing oxygen in the regeneration process and found an unexpected rise in hydrogen peroxide (H2O2) following tail amputation, with levels remaining elevated during the entire tail regeneration process.

The findings give an insight into tissue healing and the beneficial role that those molecules can have in the regeneration process.

### Weight loss helps to oust worms

niversity scientists have discovered that weight loss plays an important role in the body's response to fighting off intestinal worms.

The findings show that the immune system hijacks the natural feeding pathways causing weight loss. This then drives the defence mechanisms down the correct pathway to expel the worms.

Nearly one quarter of the world's population is infected with gastrointestinal parasites, often resulting in reduced appetite and thus weight loss.

Dr John Worthington, from the Faculty of Life Sciences, said: "We were surprised. Normally weight loss is associated with a negative immune response but this appears to suggest just the



opposite –the immune driven weight loss was actually beneficial to the mouse's ability to resolve an infection and get rid of the worm."

Professor John McLaughlin added: "This may have relevance to why other human diseases causing inflammation of the digestive system affect appetite and nutrition."

### Virtual heart sheds new light on defects

A virtual heart, developed by researchers at the School of Physics and Astronomy, is revealing new information about one of the world's most common heart conditions, atrial fibrillation (AF).

In the UK more than 500,000 patients have been diagnosed with AF, which causes an irregular heart rate and also increases the risk and severity of stroke.

The advanced computational model of an anatomically correct sheep's heart was made by taking a series of very thin slices of the heart, imaging them in 2D and then using a computer programme to render them into a 3D model.

The study has identified for the first time the roles of erratic electrical waves and fibre structure in the initiation and development of AF, and that both need to be taken into consideration when developing treatments.

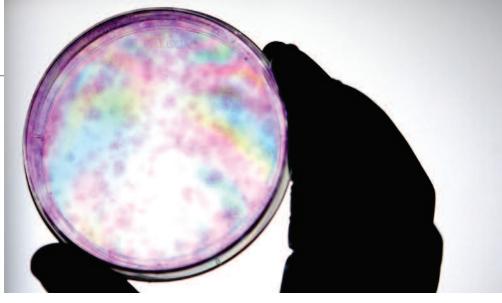


## Location, location, location

Scientists at the University's Paterson Institute have shown that location is key when it comes to cell division, the process by which cancer cells are produced.

Cancer Research UK-funded Professor lain Hagan and his team have found that the location of a chemical, called mitosis promoting factor, in a cell is critical to how it controls cell division (also called mitosis).





## Scientists harness immune system to prevent cancer relapse

anchester scientists hope that lymphoma patients could benefit from a new drug that triggers the cancer-fighting properties of the body's own immune system, after highly promising early laboratory results.

University researchers, funded by the charities Leukaemia and Lymphoma Research and Cancer Research UK, have shown that, when used in conjunction with radiotherapy, the new drug is potentially four times more likely to lead to long-term survival than radiotherapy alone.

Relapse is a common fate for many lymphoma patients and new treatments are desperately needed. The research shows that the chemical R848 can be used to prime the immune system to fight cancer.

Dr Simon Dovedi, from the Institute of Cancer Sciences and Targeted Therapy Group, said: "Excitingly we think that this new approach to treating cancer could be capable of giving patients a better response to conventional therapies. This could be the key to ensuring long-term survival in more patients and reducing the number of relapses after initial therapy."

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Painted mummy portrait, depicting an unnamed woman. 138-160 AD. From Hawara, Egypt. Manchester Museum Acc. No. 2266.

## What's On

### Manchester Museum

All exhibitions at The Manchester Museum are FREE

### **NEW GALLERIES**

Ancient Worlds

Three new galleries – **Discovering Archaeology, Egyptian Worlds** and **Exploring Objects** 

**Breed: The British and Their Dogs** *until April* 

All Other Things Being Equal until June Looping and Linking 10 Feb – 26 May

### FAMILY ACTIVITIES

Most activities are free and drop-in, some activities may need to be booked and may cost up to £1.50, all ages

Every other Tuesday, 5 Feb, 10.30 – 11.15am, 12.30 – 1.15pm and 1.30 – 2.15pm, Free

Baby Explorers
Sensory play for babies

2.15pm, Free Baby Explorers Sat 9 Feb, 11 – 4pm, Free Big Saturday: Discover Archaeology Mon 18 – Fri 22 Feb, 11am – 4pm School Holidays: Ancient Worlds

Fri 22 Feb, 10.30 – 11.30am and 11.30 – 12.30pm, Free

Magic Carpet: Dig

For under five's and their carers

### **MUSEUM MEETS**

Mon 4 Feb, 6 – 8pm The Rogue Cell

Weds 6 Feb, 1.15 – 2pm

Collection Bites

Thurs 7 Feb, 6 – 8pm

Frogs in Ecuador

Sun 10 Feb, 1 – 4pm

Looping and Linking Opening

Thurs 14 Feb, 11.30 – 12.30pm

Herbarium Tours: Looping and Linking Sat 16 Feb, 11 – 4pm Discover Islam Drop-In Thurs 21 Feb, 2 – 3pm

Rock Drop: Geology Identification Drop-In Session

Sat 23 Feb, 2 – 4pm Urban Naturalist: Natural Twine Bird

Every Tues and Thurs (except school holidays). 12 – 1pm

Tours of the Vivarium (live animals)

Every Weds and Thurs, 1pm

Taster Tours

Opening times

Open: Tues-Sat 10am-5pm Sun-Mon (and Bank Holidays) 11am-4pm FREE admission

The Manchester Museum, Oxford Road, Manchester 0161 275 2648 www.manchester.ac.uk/museum

www.manchester.ac.uk/museum Follow us on Twitter @McrMuseum www.facebook.com/ ManchesterMuseum

### The Martin Harris Centre for Music and Drama

### FREE LUNCHTIME CONCERTS

Thurs 7 Feb, 1.10pm Hsing-Chwen Hsin

Thurs 14 Feb, 1.10pm Trio Atem

The State of

Thurs 21 Feb, 1.10pm Quatuor Danel

Thurs 21 Feb. 2.30pm

Ouatuor Danel Seminar

Fri 22 Feb, 1.10pm MUMs Lunchtime Concert

Thurs 28 Feb, 1.10pm Fidelio Trio

### **EVENING CONCERTS**

Fri 15 Feb, 7.30pm, £10/£5/£3 PSAPPHA Evening Concert

Sat 16 Feb, 7.30pm, £10/£6/£3

MUMS Symphony Orchestra

Fri 22 Feb, 7.30pm, £10/£4

Quatuor Danel Friday Evening Concert Series

MANTIS Spring Festival 2013 Sat 2 Mar, 6pm, £7.50/£5/£3

Sun 3 Mar, 2pm, £7.50/£5/£3

### LITERATURE

Mon 11 Feb, 6pm, £12/£10 (tickets available from the Cornerhouse)

Jeanette Winterson "in Conversation" with Abi Morgan

Mon 18 Feb, 6.30 pm, £6/£4 Literature Live: Michael Hofmann and Rachel Seiffert

### DRAMA

Fri 8 Feb, 11am, 7-11 yrs old £4 per child (1 free adult ticket for every 10 paying pupils) John Hegley – Key Stage 2 Interactive Schools Performance

Sat 9 Feb, 8pm, £8 John Hegley

Weds 20 Feb, 7pm, £5/£4.50/£4 University of Manchester Drama Society Manchester In-Fringe Theatre Awards (MIFTA's)

Thurs 21 Feb, 7pm, £5/£4.50/£4 University of Manchester Drama Society's Manchester In-Fringe Theatre Awards (MIFTA's)

Fri 22 Feb, 7pm, £5/£4.50/£4 University of Manchester Drama Society's Manchester In-Fringe Theatre Awards (MIFTA's)

The Martin Harris Centre for Music and Drama Bridgeford Street, Manchester, M13 9PL 0161 275 8951 email boxoffice@manchester.ac.uk www.manchester.ac.uk/ martinharriscentre

### Whitworth Art Gallery

### **EXHIBITIONS**

John Piper: The Mountains of Wales until 7 April

Michael Landy: Four Walls 9 Feb until 16 June

Every Tues, 11 - 12.30pm, Free Tuesday Talks

Every Thurs, 8.30 - 9.45am, £3 (booking essential)

Yoga

Sun 17 Feb, 12.30 - 1.15 pm, Free Performance by RNCM students

Sat 23 Feb, 1-3pm, Free (booking essential) **Alternative Camera Club** 

Weds 27 Feb, 6.30pm, £7 (booking advisable)

Sarah Price: Landscapes

To book email: fow@manchester.ac.uk

**FAMILY EVENTS** 

19, 20, 21 and 22 Feb, 1-3pm, Free Artists' Skills: 3D Landscapes

Every Weds, 10.15-11.15am and 11.30-12.30 pm, Free (booking essential) Art Baby

Every Mon, 10.30 - 11.30 am and 11.30 – 12.30 pm, Free (booking essential)

Every Sun, 1.30 - 3.30pm, Free **Colourful Sundays** 

For more information on our exhibitions and events, please visit our website.

Opening times

Mon-Sat 10am – 5pm, Sun 12 – 4pm

The Whitworth Art Gallery Oxford Road, Manchester 0161 275 7450 Booking line 0161 275 7450

email whitworth@manchester.ac.uk www.manchester.ac.uk/whitworth

### **Jodrell Bank Discovery Centre**

Jodrell Bank Discovery Centre offers a great day out for all the family. Come and explore the planets using our model of the Solar System. Find answers to the wonders the Universe, listen to the sounds of the Big Bang and discover what the scientists are researching 'Live' in our interactive Space Pavilion. The glass-walled café offers spectacular views of the iconic Lovell telescope and fantastic homemade cakes!

Weds 20 Feb, 7.30 - 9.30pm (Sold Out) Exploring the Night Sky: The Search for Other Worlds

Opening times 10am-5pm

For more information and prices please visit our website Jodrell Bank Discovery Centre

Macclesfield, Cheshire, SK11 9DL 01477 571 766

www.iodrellbank.net



### The John Rylands Library (Deansgate)

### **EXHIBITIONS**

Tony Dyson: A Hidden History of Gay Rights Campaigning until 30 June

An Inventory of al-Mutanabbi Street

Burning Bright 8 Feb until 23 June **EVENTS** 

Thurs 7 Feb, 6 – 7pm, Free, (booking essential)

An Evening with Jeanette Winterson

Sat 9 Feb, 1.30 - 2.30pm

RNCM Concert:

Making Music, Reaching Out

Sat 9 Feb, 12 – 4pm **Visitor Portraits** 

Sun 10 Feb, 1 – 4pm

Welcome to the Year of the Snake!

Mon 11 Feb, 12 – 1pm Collection Encounters: Souvenirs of the

Fri 15 Feb, 2.30 – 3.30pm

Unusual Views: Library Tours for Photographers

Fri 22 Feb, 12 - 1pm

Here be Dragons! A Tour of the Library

Tues 26 Feb, 5.15 - 6.45pm, Free (booking essential)

Public Seminar: Private Books for **Education Use** 

Weds 27 Feb, 1.30 - 4pm Whimsical Wednesday Workshop: **Drypoint Printmaking** 

For further details of our events, please visit our website

FREE ADMISSION

Public opening times: Sun-Mon 12-5pm, Tues-Sat 10am-5pm

Reader opening times: Mon-Weds, Fri-Sat 10am-5pm, Thurs 10am-7pm

The John Rylands Library 150 Deansgate, Manchester, M3 3EH Visitor/Event Enquiries: 0161 306 0555 General/Reader Enquiries: 0161 275 3764 www.library.manchester.ac.uk/ special collections/

### Gig Guide

### Manchester Academy 1, 2 and 3

Kerrang! Tour 2013 feat. Mon 4 Feb Black Veil Brides + Chiodos + Tonight Alive + **Fearless Vampire Killers -**£16.50 We Are The Ocean - £12.50 Tues 5 Feb Thurs 7 Feb All Time Low - £21 (SOLD OUT)

Brad + New Killer Shoes -Fri 8 Feb £22 50

Ryan Leslie - £25 (Please Fri 8 Feb note: this show has been rescheduled from 28 Nov

2012. Original tickets remain valid)

Fri 8 Feb NME Awards Tour 2013 feat. Django Django +

Miles Kane + Palma Violets + Peace - £19.10 (tickets are subject to a 50p + VAT donation to Teenage Cancer Trust)

Mon 11 Feb Asking Alexandria - £14 Tues 13 Feb The Union - £12.50 Thurs 14 Feb Jake Bugg - £12.50 (SOLD OUT)

Sat 16 Feb Awolnation - £10 Mon 18 Feb Deftones + Letlive + Three Trapped Tigers -£26 50

Tues 19 Feb The Lumineers - £10 Tues 19 Feb The Bronx - £15 Weds 20 Feb Walk the Moon - £9

Thurs 21 and Fri 22 Feb Lawson - £14 Fri 22 Feb **Everything Everything -**

Fri 22 Feb **Rock Sound Exposure** Tour 2013 feat. The Ghost Inside - £11

Sat 23 Feb Taking Hayley - £7 Sun 24 Feb Of Monsters and Men -£14 (SOLD OUT)

Thurs 28 Feb Double D Tour 2013 -The Drills (feat. PhilX) / Dorje (feat. Rob

Chapman) + StormBorn -£10 Fri 1 Mar Disclosure - £10 (Moved

from Manchester Gorilla) Fri 1 Mar Steven Wilson - £22.50 Sat 2 Mar Don Broco - £8

### Tickets from

Students' Union, Oxford Road Piccadilly Box Office @ easy Internet Café (c/c) 0871 2200260 Royal Court (Liverpool) 0151 709 4321 (c/c) Students' Union Oxford Road, Manchester, M13 9PL

0161 275 2930 www.manchesteracademy.net

### place almost every weekend throughout For more information please visit our website.

Sat 9 Feb

Sun 10 Feb

Oxford (with guided tour) **North Lake District** 

visiting Keswick North Wales visiting the Sat 16 Feb

Ffestiniog Railway and Portmeirion Village

Sun 17 Feb **Warwick Castle** 

Sat 23 Feb York and the Yorvik Viking Festival

Sun 24 Feb Liverpool

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Windermere

Sun 3 Mar Yorkshire Dales visiting Ingleton Waterfalls and

White Scar Caves Overnight Trip to Sat 2 to Edinburgh Sun 3 Mar

Opening times

Mon-Fri 9.30am – 7pm (during term time) Mon-Fri 9.30am – 5pm (during vacation)

Small World Café opening times Mon-Fri 11am - 3pm

327 Oxford Road (next to Krobar) 0161 275 4959

email int.soc@manchester.ac.uk www.internationalsociety.org.uk

### Chaplaincies

### St Peter's House Chaplaincy

Sunday, 11am Holy Communion 12.45pm Lunch (1st Sun) Sunday, 6.30pm Evening Worship (term-time only) FOYER 10am – 5pm, weekdays 12.15pm Wednesdays Eucharist

An area where students and staff can relax and meet friends. A tea/coffee machine available RC Chaplaincy Avila House

Mass Times (term-time only) Sun, 7pm, Holy Name Church

Mon, Tues, Thurs and Fri, 5.30pm, Chaplaincy Chapel Weds, 1.05pm, Chaplaincy Chapel

The Jewish Student Centre and Synagogue

07817 250 557 Email Rabbi Mati Kos: rabbikos@mychaplaincy.co.uk

**Muslim Chaplaincy** 

South Campus Mosque, McDougall Centre Jammaat (Group Prayer) Daily Juma Prayer Friday 1.15pm Honorary Imam: Imam Habeeb, h\_chatti@hotmail.com

North Campus Mosque

Basement of Joule Library, Sackville Street Building Jammaat (Group Prayer) Daily Juma Prayer Friday 12.30pm

The role of Volunteer Muslim Chaplain is to provide pastoral support, guidance and a listening ear to Muslim staff and students Chaplains' email:

assia\_shah61@yahoo.co.uk



## Way beyond blue



The University is home to some amazing objects. Each month in UniLife we ask someone to share with us one of their favourite fascinating artefacts.

beautiful hand-sewn indigo cotton quilt that would cover a living-room wall is not only one of the Whitworth Art Gallery's treasures, but also an inspiration for Dr Avril Danczak.

"I chose it because it is very arresting and it crosses a lot of different worlds," she says.

"Quilting was born out of poverty, yet this one is precious. It links Africa with the West. It brings craft into the heart of the artistic world."

It also links generations, since the two centre panels were created

by Ebetola, the great grandmother of the quilter, Nike Olaniyi Davies, who taught her the secrets of indigo dyeing.

The quilt is made from pieces of hand-painted Adire cloth drawn with a bird-feather quill and each row of squares has two different geometric designs.

In all, including the outer framing rows, there are 15 different designs. And, hanging there in the Gallery's famed textile hall, it just glows indigo, which is a Whitworth speciality.

How long it may have taken Nike and her great grandmother to make this remarkable quilt, with its miles of stitching and lining, is inestimable.

Dr Danczak works as a GP in Whalley Range as well as training other GPs in the north-west region. She used to run medical seminars at the MRI and, being just across the road from the Gallery and interested in art, started to use the Gallery as an educational resource.

Gallery visits provoked wideranging reflections on themes such as alcohol and relaxation and the social meaning of such things, and how the psychological and social meet the medical world.

Similar visits to The Manchester Museum reflected on medicine from other cultures such as that of the ancient Egyptians.

In addition, Gallery staff have visited nursing homes to carry out activities with objects from the Museum, which have been well received by the residents.

Avril says: "The Gallery staff have been very receptive and the doctors are very responsive, so it works well."