UNIVERSITY OF BIRMINGHAM

THE POSTGRADUATE TIMES

June 2015

Photo Credit: Harry Forsyth (Mechanical Engineering BSc)

THE FIRST WORD

The University of Birmingham's Vice-Chancellor Sir Prof David Eastwood speaks to the Postgraduate Times and offers his view…

A few weeks ago I was rung unexpectedly on a Sunday by Sky. In a very agreeable conversation I was told that we had probably the oldest Sky box in the known universe. I was asked whether we wanted to upgrade it and, in the way of these things, I was offered the proverbial 'free upgrade'.

On and off I had been wondering whether or not we should have HD and other facilities that Sky now offers, so I thanked the Sky representative and said that yes I would very much like to upgrade.

The formalities were duly concluded and, on the following Friday, the new box arrived. Meanwhile, after telling my son proudly that we were upgrading to HD, Jon told me that none of this would probably work because I did not realise that our old plasma TV only had SCART connections. As a result, we had to replace our 12-year-old television as well.

There is now a new world open to us (if only I had time to enjoy it!). On demand facilities, box sets, high definition viewing. All of these are now ours. We are, now, fully high definition digital. I hope I can now escape the jibe of being an analogue Vice-Chancellor in a digital age!

The pace of change in communications technologies and in the way in which we access information and entertainment continues to accelerate. In my Vice-Chancellor's Seminar this year, students from EPS led a discussion on 'whether the internet of things will solve any real world problems'. As so often in my seminars, the presentation was hugely impressive, both in terms of its content and in terms of its style. One of the presenters said that he was wearing three digital devices including something on his wrist which told him that he had received some four messages during his short presentation.

I genuinely do not know why anybody would want this kind of multiple alert. No doubt like many of you reading this piece, my own cultural formation has been in a very different era with very different expectations about the pace and immediacy of communication.

Our students, like many of our children, inhabit a different world where immediacy matters, where friendship is defined around the frequency of virtual conversation, and where they expect to receive and are comfortable with receiving multiple alerts and prompts.

Such is the rapidity of change in the ways in which different generations are defining and redefining themselves. The simple categories of the young, the middle aged, and the more elderly no longer hold. In a recent analysis whilst 32% of 25–34-year-olds watched television, the number of 18–24-year-olds who watch television was down to 13%.

This younger generation was using other devices, notably their smartphones and tablets, to watch television as well as to gather other information and entertainment. This is a generation which virtually never would choose a newspaper as its medium of choice, and for whom the smartphone is the most valued of mobile devices.

Of course habits and fashions change, and one piece of research does not by any means give us the whole picture. My point, though, is that the habits and communication preferences of our students are different not only from those who teach them but from those who are barely a few years older.

This poses very interesting challenges for a university and a university community. At one level it is critically important that we embrace the new. Thus we flood the campus with broadband, while we ensure that the spaces for social learning, for working whilst drinking coffee, and for picking up study-related information whilst on the move are, as near as we can make them, best in class.

Similarly, from September, we are moving to make as many of our lectures as possible available to students through audio capture so that they can revisit their teaching and reshape their learning.

Canvas continues to be a huge success, and students frequently attest to me that the quality and confidence of their learning has been greatly enhanced by the effectiveness of our virtual learning environment.

In order to respond to these kinds of communications and cultural changes, we will need to continue to rethink the way in which we teach and the way in which our students can move between real and virtual learning environments.

None of this, of course, means that we do not have to invest in the physical infrastructure of the University. The Collaborative Teaching Laboratory (CTL) is a very strong statement of the importance of formal learning spaces, and the way in which we can use major capital projects to reconfigure the way we teach, offer feedback, and enable students to explore and learn.

A similar discussion is now underway around a new building which will be adjacent to the library where we will incorporate similar kinds of teaching facilities and spaces for the humanities and social sciences.

Despite the transformation of pedagogy, the learning environment, and teaching spaces, it is important that universities are not simply places enslaved to new technologies.

Learning and teaching is a two-way process. As well as teachers adapting to new student expectations, students need to continue to recognise that university learning and research is different, demands a range of complementary skills, and requires them to study and reflect in different ways.

One of the most serious challenges is the sustained immersion that higher education will always demand. In a world where communication becomes increasingly fragmented, and in a world where knowledge is frequently packaged in bite-sized portions, the kind of understanding that will always be required in serious universities will demand that students blend their preference for new technologies of communication with an immersion in more traditional means of study and reflection.

Even in the new CTL, lab classes will require time, preparation, and the acquisition of new skills and understanding. In many disciplines books will continue to matter, and the ability to sustain engagement with long and complex texts is a skill which anyone seeking to grapple with complex issues must acquire and hone.

So there is much that should excite in the way in which communications are being transformed, and universities will become still more animated places. The learning, and thus the teaching experience should be richer than ever. But, as with those Sky Box Sets, sometimes deep immersion is required, sometimes there are no short-cuts, and always what we do not know is much greater than what we do.

Vice-Chancellor,
Professor Sir David Eastwood

Originally published in *Buzz 155*, April/May 2015

Digital donation for new library

More than 6,000 e-books worth in excess of £1 million have been donated to the new University library currently being built on campus.

As founders of Singapore-based World Scientific Publishing, a leading international scientific publishing company, Professor KK Phua (PhD Mathematical Physics, 1970) and his wife Doreen Liu (BSocSc Economics, Politics and Sociology, 1970) were delighted to contribute to the project.

'We are glad to learn that the University is constructing an outstanding, technologically rich new library and hope our gift will inspire the next generation of Birmingham students,' says Doreen (pictured above).

A space within the new building will be named after the eminent British physicist Professor Tony Skyrme, who taught KK Physics at Birmingham.

In addition to KK and Doreen's gift, more than £83,000 has been raised for the library project to date from 1,200 donors.

To find out more about how you can support the new library, visit www.birmingham.ac.uk/circlesofinfluence or text GIVE to 70111 to give £3 today.

Why do we need a new library?

The old library was designed to house one million books at a time when just 4,000 students attended the University. Today, there are more than seven times as many students and almost triple the number of books. There are only 1,522 study spaces in the current building for almost 30,000 students.

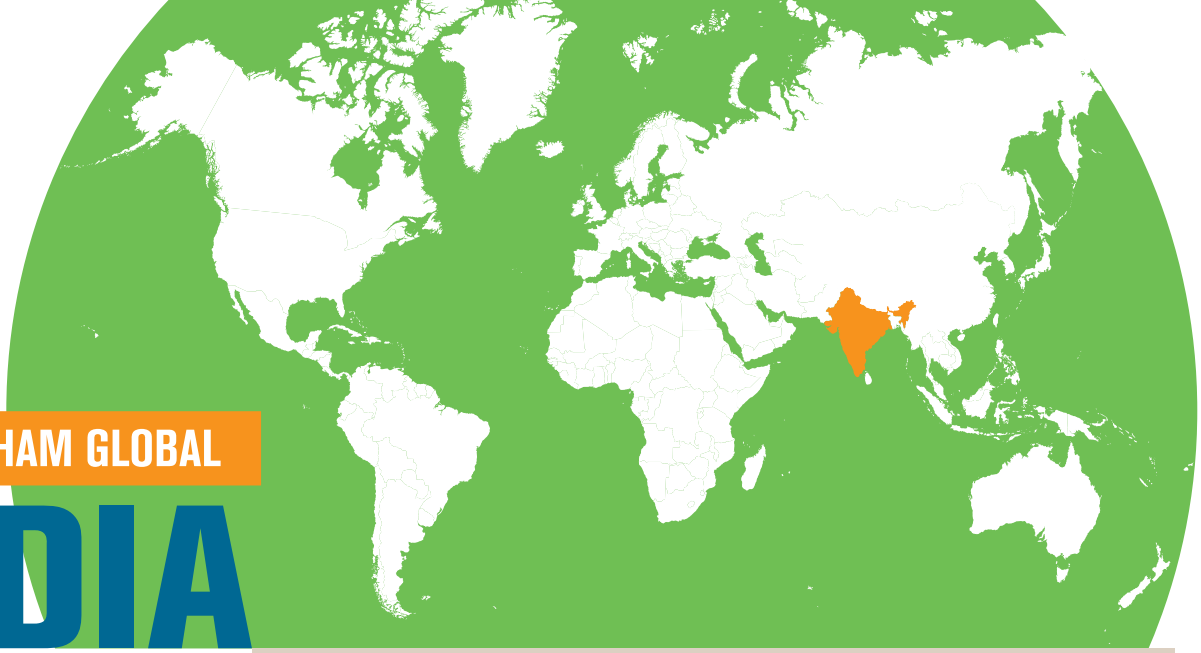
Knighthood for Vice-Chancellor

The University's Vice-Chancellor, Professor David Eastwood, has been awarded a knighthood in this year's Queen's Birthday Honours.

Professor Sir David, who is also Chair of the Russell Group, was honoured in recognition of his exceptional contribution to higher education throughout his working life, and the commitment he has shown to enhancing the UK's reputation in the field. Prior to his role at Birmingham, the Vice-Chancellor held sector leadership positions including CEO of the Higher Education Funding Council for England (HEFCE).

Ed Smith CBE, Pro-Chancellor and Chair of Council, says: 'I am delighted for David, his family, and the University, and on behalf of University Council I would like to offer our sincere congratulations.'

Originally published in *Old Joe* Autumn 2014



BIRMINGHAM GLOBAL

INDIA

FORGING LASTING COLLABORATIONS WITH INDIA

The Vice-Chancellor, Professor Sir David Eastwood, and the Chancellor, Lord Bilimoria, accompanied a ministerial delegation to New Delhi in November 2014, to underline the University's commitment to forging closer ties with India.

The visit, headed by Universities Minister Greg Clark, involved more than 20 senior representatives of the UK higher education sector and was aimed at promoting stronger and deeper partnerships between the two nations. It is hoped the delegation will not only boost student recruitment from India but also bolster research, teaching and business collaborations.

The delegation attended the Federation of Indian Chambers of Commerce and Industry (FICCI) Higher Education Summit as well as an event hosted by the Indian Government Minister Smriti Zubin Irani.

In addition to the official ministerial programme a number of bilateral meetings, a business engagement event and a reception for alumni took place. The press team also generated significant coverage of the visit in the Indian press and at home in the UK.

The University's connection to India spans more than a century, welcoming the first Indian students to our campus in 1909 to study for degrees in mining and commerce. Since then we have provided education to more than 1,300 Indian alumni, including the late author Dr U R Ananthamurthy, who was shortlisted for the Man Booker International Prize 2013, and Indian Cabinet Secretary Ajit Kumar Seth and Dr Alwyn Didar Singh, Secretary General of FICCI.

In 2009 the University opened an office in New Delhi and India continues to be an important region for academic engagement and student recruitment for the University. The University is committed to continuing to build long-term, mutually beneficial, academic-to-academic engagement, key institutional partnerships and stakeholder relations, which will lead to increased staff and student mobility, education innovation and teaching partnerships, and enhanced research collaboration.

The University has a range of research and teaching partnerships with India; highlights are presented below.

- **Clinicians are studying** the salt intake of Indian adults as part of an international research team led by the Public Health Foundation of India. The research will provide vital new data to aid the development of a national salt reduction strategy. India has a diverse dietary culture where salt is used extensively but up-to-date figures on population salt consumption are very limited.

- **The University is working with** the University of Delhi and Yale University to support the development of a pioneering global justice programme in India. The Nyaya Global Justice Programme at the University of Delhi will be a major intellectual hub for the study of international ethical questions, which have strong implications for India and neighbouring countries.

- **The School of Physics and Astronomy** and the Indian Institute of Science Education and Research (IISER) in Pune are collaborating in joint curriculum development, computer-based learning and experimental tool design, and knowledge transfer in the area of ultra-cold atoms. The partnership is paving the way for students to acquire the highly developed experimental and theoretical skills and knowledge of cutting-edge technologies required for research in this discipline, and aims to bridge the gap between academia and industry in this field.

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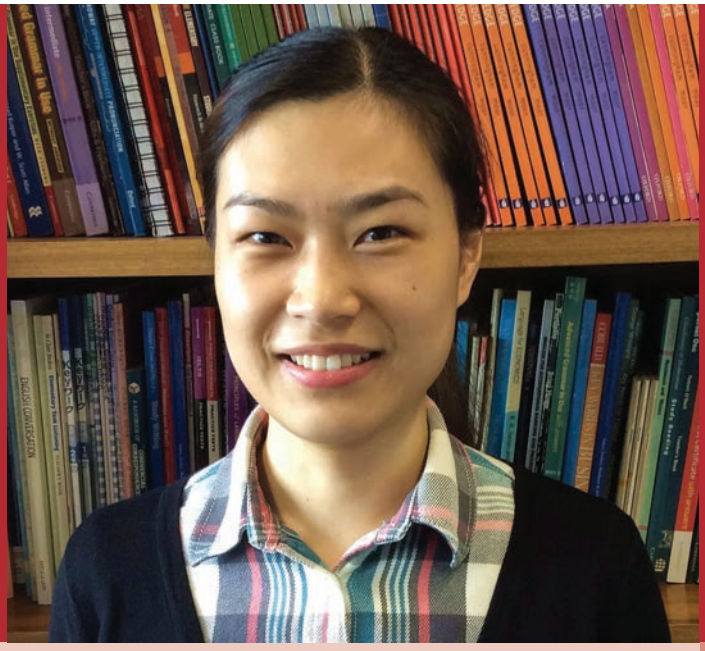
Chinese Student Wins Award for Her Outstanding Research



Shuangling Li, a PhD student at the University of Birmingham, has won an award from the Chinese Government who found her research to be 'outstanding'.

Susie, her English nickname, is one of very few humanities students to have won such a prestigious award and the only student at Birmingham to have done so. Her thesis looks at the words time and thing and offers the conclusion that they can only really be understood when they are encountered as part of a phrase.

The individual words have so many different meanings that they become practically meaningless when they appear in isolation. According to Susie the words time and thing often occur in rather vague phrases like from time to time, things like that, and that sort of thing. 'Time is often used in phrases which are used to organise text such as at the same time meaning in addition or however. You can even ask someone if they do the coffee thing? where thing refers to a part of something which is much bigger and more complex ie, the whole coffee culture.' According to Susie both words are highly polysemous (they have many different meanings) and it is only when we meet the word in a phrase or pattern that we can begin to understand what is meant on this occasion.

All of Susie's examples are taken from her corpus-based research. A corpus is a large data base of language, in this case written and spoken English, and over the past four years Susie has been using data from a variety of different corpora to study how we use words like time and thing. The University of Birmingham is one of the leading centres for corpus-linguistic research in the country and is famous for its work on collocation, phraseology, metaphor, and discourse.

'I feel very lucky to have received guidance from exceptionally knowledgeable and professional supervisors, and to have had the support of a very active community of staff and fellow research students.

I was able to have access to a lot of resources which proved invaluable for my own research'.

Now she has completed her doctorate she will be returning to China to take up a job as a lecturer where she hopes to apply the findings from her work. Susie's research shows how phraseology is central to language use and needs, for example, to be taken into account when teaching and learning a language. Hopefully, in future years, language teachers in China will focus less on individual words like time and thing and more on the phrases and patterns they are associated with.

But what has she learnt from her time here? 'I think the most valuable thing I have learnt from my studies is how to become a good academic researcher, keeping a critical mind towards my own work and the work of others', being open to new and unexpected findings from the data, and always reflecting on how certain results from my research can benefit other studies and English language teaching'. And her thoughts on English culture: 'It is not news that British people are always very polite, but I do find it interesting that many English academics can provide very critical and insightful comments towards others' work in the most polite way'.

If you are interested in Corpus Linguistics please visit the department's webpage:
www.birmingham.ac.uk/research/activity/corpus/about/index.aspx

Birmingham also offers research opportunities in a wide range of subject areas associated with English Language and Linguistics. For more information please visit:
www.birmingham.ac.uk/schools/edacs/departments/englishlanguage/index.aspx

The Postgraduate RECRUITMENT TEAM

Hello, my name is Stephen Allmark and I am the Head of Postgraduate Recruitment at the University of Birmingham.

The Postgraduate Recruitment team can offer support to prospective students at any stage in the decision-making process and I would like to encourage you to get in touch with us if you have any questions about postgraduate study.

Below you will find some information about the members of my team and details of their particular areas of expertise, together with their contact details. The following services may also be of interest to you:

For general enquiries about postgraduate study please contact our dedicated enquiry service:
Email: dr@contacts.bham.ac.uk
Phone: +44 (0)121 414 5005

If you have already applied for a course and would like to discuss your application please contact our Admissions team:
Email: admissions@contacts.bham.ac.uk
Tel: +44 (0)121 415 8900

If you are an international student please contact the International Recruitment team:
Email: international@bham.ac.uk
Tel: +44 (0)121 414 3694

Detailed information about our postgraduate courses can be found in the Postgraduate Prospectus, which you can order through our website: **https://bham.hobsons.co.uk/emtinterestpage.aspx?ip=postgraduate**

If you are interested in undertaking doctoral (PhD) research you should order your bespoke copy of our Doctoral Research Prospectus using our online form:
www.birmingham.ac.uk/drp

We also offer detailed funding advice via our online database:
www.birmingham.ac.uk/pgfunding

My team and I look forward to hearing from you and would like to wish you all the best with your next steps.

Steve Allmark
Head of Postgraduate Recruitment
Email: s.j.allmark@bham.ac.uk

Emily Rozier

Postgraduate Recruitment Officer
Email: e.j.rozier@bham.ac.uk

Emily manages our UK recruitment activities, including the information days that we run for prospective students.

If you would like more information about these on-campus events, including the Postgraduate Open Days, Café Masters and Café PhD peer-to-peer information sessions, and the Postgraduate Study Fair that we host each January, then please get in touch with Emily.

Chloe Pattison

Postgraduate Recruitment Officer
Email: c.e.pattison@bham.ac.uk

Chloe manages our EU recruitment activities and can offer help and advice to prospective applicants from the EU.

If you would prefer to meet Chloe in person, she regularly attends recruitment fairs across Europe and can arrange one-to-one sessions with prospective students during these visits.

For details of upcoming fairs please see:
www.birmingham.ac.uk/pgevents

Dr Mike Rush

Postgraduate Recruitment Advisor
Email: m.c.rush@bham.ac.uk

Mike manages the Postgraduate Mentor Scheme, which is a support network for prospective Birmingham students. The mentors are experienced postgraduates who have previously studied, or are currently studying, at the University of Birmingham, and they will offer help and advice from a student perspective.

You can contact our mentors directly using the question box on their profile pages:
www.birmingham.ac.uk/pgmentors

Jess Bowen

Postgraduate Recruitment Advisor
Email: j.bowen.2@bham.ac.uk

Please get in touch with Jess if you would like to book a place on one of our postgraduate campus tours. She also manages our attendance at external recruitment events, such as careers fairs and study days, which take place across the UK throughout the year. These events are an excellent opportunity to find out more about studying at the University and have your questions answered in person. Details of upcoming events at which a member of the Postgraduate Recruitment team will be in attendance can be found at: www.birmingham.ac.uk/pgevents

Student engagement:

Vice-Chancellor's Seminar Series

Each year, the Vice-Chancellor chairs an annual series of seminars with a group of outstanding undergraduates from across the University. Fostering academic interchanges across College and disciplinary boundaries, the students debate topical issues and consider the ways in which their academic studies can be practically grounded.

THIS YEAR'S SEMINARS HAVE CONSIDERED QUESTIONS AS DIVERSE AS:

How should we decide when a clinical treatment is too expensive, or its benefits too uncertain?
What does a just society look like?
Will the 'internet of things' solve any real-world problems?
What do we gain from studying the arts and humanities, and why?
Do we worry too much about wellbeing?

Fourth-year medical student, Elliot Yates, told *Buzz* about his experience at a recent seminar.

"How should we decide when a clinical treatment is too expensive, or its benefits too uncertain?" was the question asked of the College of Medical and Dental Sciences (MDS). We opted to open up the 2014/15 Vice-Chancellor's Seminar series with a team consisting of a third-year student nurse, Jessica Dennehy, and two fourth-year medical students, George Greenlees and I.

With some trepidation, we began teasing apart the arguments of Professor John Harris' 'Fair Innings approach', Jeremy Bentham's utilitarian rationing and even indulged a little Marx. George opened our offering by outlining these rationing cornerstones and began to consider how we may standardise the benefits or harms provided by a certain treatment. We explored the concept of quality-adjusted life years (QALYS) as a means of economic comparison, illustrating how 'rescuing' a patient from cancer had a stronger emotional appeal than the epidemiological treatment of millions. Jessica built on this by providing a patient perspective of anti-dementia drugs versus the UK government's healthcare rationing arm, NICE (National Institute of Health and Care Excellence).

Armed with some light pre-reading and fundamental medical ethics, the panel engaged in a lengthy discussion, chaired by Professor Sir David Eastwood. We wrestled with the perennial problem of a finite NHS budget versus the burgeoning complex medical needs of an ageing population, highlighting how 'to each according to his need' can only extend as far as public coffers allow. The panel identified the need for exploration away from our borders, with examples of best practice potentially coming from countries with less stringent rationing bodies. After thorough analysis of our allocated topic, I summarised the panel's prominent themes, concluding that difficult topics require yet further discussion!

Above all, despite all panel members coming from different academic backgrounds, everyone had a voice. It was refreshing to hear such differing opinions and engage in debate to justify and challenge our pre-held thoughts on politics, societal structure and health economics. The Vice-Chancellor's Seminar Series provides a forum for motivated students to reflect on major topics of the world today; a unique opportunity and one that all of us from MDS would highly recommend to future invitees."

Students are nominated by their Heads of College for a one-year membership of the series. For further information please contact **Mark Senior, Assistant Registrar: m.r.senior@bham.ac.uk.**

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SEE INSIDE

Even if you have never been in a hospital you will be aware of the importance of medical imaging. Medical staff can 'look' inside the body to diagnose illness and injury without physically having to touch a patient and potentially cause more harm.

In medical and biological research, MRI (magnetic resonance imaging) and CT (computed tomography) also allow us to understand the workings of the human body: how we process food, how we move, even how we fall asleep. But what might surprise you is the importance of these techniques across many other fields of the scientific community.

Until recently, a major limitation of MRI has been the inability to image metals. The changing magnetic field of the MRI generates electrical currents in any nearby metals. The effect of this is swirling eddy currents and loss of detail in the resulting image. As a result, MRI has been used extensively, but generally only to look at 'soft' systems such as the structure of soap foams or the effect of bruising on fruit and vegetables.

Recently, Dr Melanie Britton and her team in the School of Chemistry published some pioneering research that challenges the long held belief that metals are not compatible with MRI. By carefully adjusting the geometry and orientation of metal objects inside the magnetic field, eddy currents can be minimized and detail restored to the image.

This breakthrough has wide-reaching implications. The Britton group is using this knowledge to study the chemical processes that occur in batteries. By constructing a model battery inside the MRI instrument, the group are able to map the movement of ions within the battery. This is particularly important for optimising efficiency and lifetime of batteries, but can also be applied to other electrochemical technologies such as corrosion prevention and electroplating.

Another Birmingham group that is leading the way in scientific imaging is led by Professor Alison Davenport in the School of Metallurgy and Materials. Alison and her group use CT, which builds up a three-dimensional image of the inside of an object from a series of two-dimensional X-ray images. Like MRI, CT has the advantage of being non-destructive and so can be used to study changing systems.

The Davenport group, alongside researchers at the Diamond Light Source Synchrotron, have used CT to watch how corrosion sites grow in aluminium air frame alloys under droplets of salt water. This will provide a basis for developing corrosion prediction models that will help aircraft operators decide how often aircraft need to be inspected.

Another important application of predictive models from CT imaging is in storage of intermediate level nuclear waste in stainless steel containers. There are currently no signs of corrosion of the containers in any of the stores, but it is important to understand what storage conditions are required to avoid the risk of corrosion over hundreds of years.

Studying the impact of atmospheric corrosion on a metal over 100 years is not possible so the group use more aggressive conditions to understand the pathway of corrosion. This can then be used to build up a model of long-term corrosion effects. As Alison says, *'we need to have an underpinning knowledge of the process so it can be modelled and we can predict what might happen in the future.'*

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The glass vial contains the components of a household battery, which is placed in the MRI scanner to see the distribution and transport of ions.

Dr Melanie Britton and Dr Joshua Bray

‘Much Ado’ at the Shakespeare Institute

Dr Abigail Rokison, a Lecturer in Shakespeare and Theatre at the University’s Shakespeare Institute in Stratford-Upon-Avon, tells *Buzz* about the busy year ahead...

This year promises to be an exciting time at the Shakespeare Institute. The University has recently announced a five-year collaboration with the Royal Shakespeare Company (RSC) – the fruits of many meetings and discussions that have taken place over the past few years.

This pioneering project will see the reinstatement of the iconic studio theatre, The Other Place, opening in 2016. The collaboration is rooted in the vision of the theatre as a centre for creative and academic exchange.

Of course, this marks the culmination of joint activities with the RSC that have already been taking place, informing the teaching and research of the Institute.

I recently participated as lead academic in a Massive Online Open Course (MOOC) on *Much Ado About Nothing*, which coincided with the current RSC production *Love’s Labour’s Won*, and was produced jointly between the RSC, the Institute and the Shakespeare Birthplace Trust.

I am currently involved, along with Professor Michael Dobson and Dr Erin Sullivan, in a partnership between the Institute and key partners in Birmingham, including the BBC and the Library of Birmingham on a Shakespeare TouchTable for 2016. The project will give some of our students the opportunity to work with BBC archives and the Library to produce an interactive public learning tool packed with facts, pictures and video footage about Shakespeare and his world.

A further project that epitomises the Institute’s close working relationship with the professional theatre is Arden Performance Editions. Michael Dobson and I, along with actor Simon Russell Beale CBE, have recently been appointed series editors for new Arden Performance editions of Shakespeare’s plays, designed for use in the rehearsal room. For me, this marks a culmination of my work going back to my first monograph, *Shakespearean Verse Speaking* – a way of opening up the Shakespearean text to actors so that they can make informed decisions about metrical or textual cruxes. We have been researching the sorts of things that actors want from a rehearsal text – short facing-page definitions of words; a well spaced text; reduced punctuation; easily accessible information about key textual variants; and notes on pronunciation of difficult words, lineation and ambiguous metrical structures. I will be editing *Hamlet* and *A Midsummer Night’s Dream* for the series.

A book on theatre director Nicholas Hytner for the Bloomsbury and Arden *Shakespeare in the Theatre* series is also in the pipeline. I have met a number of times with Hytner to discuss his productions and his ideas about Shakespeare, as well as talking to those actors who have worked closely with him over the years. It is truly fascinating to be able to trace the work of a director from their school and university days, through productions at the RSC and on Broadway, to the artistic directorship of the National Theatre, and I hope that the book will provide an insight, not only into individual productions, but into a developing sense of how Shakespeare works in the contemporary theatre. With the 400th anniversary of Shakespeare’s death in 2016, the Institute can certainly expect to be involved in more media, outreach and research projects.

The Courtyard Theatre, which will be transformed into The Other Place

Abigail meets Nicholas Hytner

Originally published in *Old Joe* Autumn 2014

TRANSFORMING THE **POWER** OF MEDICINE

Saving lives by accelerating medical research findings from laboratory benches to patients is the aim of a new Institute of Translational Medicine being created in Birmingham.

Image: Hugh and Kate Gunn

Greengrocer Hugh Gunn felt numb when he was first diagnosed with malignant prostate cancer in 2005 at the age of 59. He was given between 18 and 30 months to live. 'I was told to take nice holidays while I still could and get my affairs in order,' he remembers.

But almost a decade later, he is enjoying retirement with his wife Kate, two married daughters and three grandchildren. 'I'm still here, I'm very active and I live life to the full,' he says, 'and that's all because of new drug treatments, clinical trials, Professor Nicholas James and the Queen Elizabeth (QE) Hospital, Birmingham.'

Over the past nine years, several different treatments have helped Hugh, who was one of the first patients to try a hormone therapy called Enzalutamide, which he still takes and has since become licensed.

Hugh also has monthly doses of intravenous zoledronic acid as part of the trial, and is full of praise for staff at the QE.

'Everybody is cheerful, everybody knows you and greets you like a friend. Little things like that make a massive difference when you're suffering from a horrible disease, and what could be a really nasty day is actually quite pleasant,' Hugh says.

The new Institute of Translational Medicine will mean more patients like Hugh can take part in clinical trials, and be treated with new drugs to tackle killer diseases like prostate cancer.

Patients, doctors, academics and businesses will collaborate to test new medicines and medical diagnosis equipment and bring them to market faster, yielding major health and economic benefits.

The £24 million institute is set to open in summer 2015, and its location in Birmingham is of huge benefit.

The city has the youngest age profile of any UK city, and its large catchment region encompasses population scale and ethnic diversity – both crucial to advanced and comprehensive translational research.

Coupled with this, the West Midlands hosts more small and medium-sized life sciences enterprises than any other UK region. These businesses can manufacture drugs and medical equipment and complete the full circle of translational medicine.

Professor David Adams (MBChB Medicine, 1981), Head of the College of Medical and Dental Sciences and Director of Birmingham Health Partners, says: 'One of the real opportunities we have in Birmingham is to use the enormous potential and expertise available through the NHS in our partnership hospitals, and ally that to outstanding academic and basic science within the University, to really develop research discoveries into the clinics as quickly as possible.'

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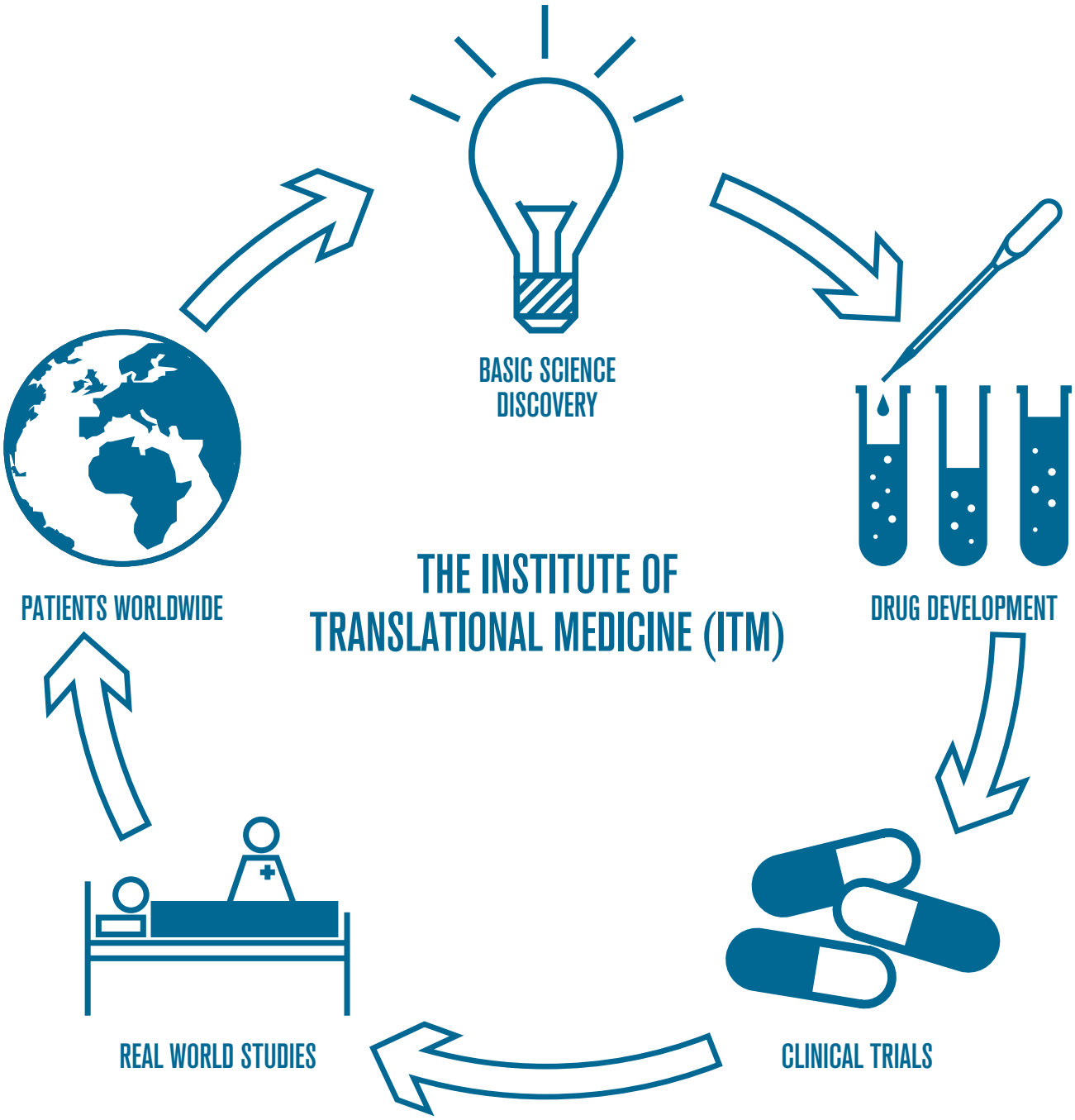


FAQs

Which research areas will the ITM focus on?

- Cancer
- Chronic diseases such as asthma, diabetes and stroke
- Rare diseases such as Alström syndrome or Bardet Biedl
- Auto-immune diseases that affect a range of organ systems
- Devices and diagnostics

What facilities will the ITM include?

Clinical trials facilities, a commercial and business hub, educational resources for staff training, and high-tech IT equipment to examine data and generate statistics will all be included in the new institute.

Who is involved in the project?

The ITM is delivered by Birmingham Health Partners, which brings together the clinical, scientific and academic excellence of University Hospitals Birmingham NHS Foundation Trust, the University of Birmingham, and Birmingham Children's Hospital NHS Foundation Trust.

How can I support the ITM?

Donations from alumni and friends of the University will ensure patients like Hugh can access the very best treatments, facilities and researchers more quickly. Your support will save, improve and extend the lives of many people for years to come. Visit **www.birmingham.ac.uk/ITM** to find out more and make a donation, or call Laura Fairbanks on **+44 (0) 121 414 8894.**

Alumnus Professor Alan Boyd (BSc Biochemistry, 1977; MBChB Medicine, 1980), runs the drug development company Boyd Consultants. He is excited about the possibilities that the Institute will create, and explains:

'Developing a prescription drug is very expensive and takes time. Only by trialling a drug in humans will you find out if it's worth putting more resources behind it. As a very interactive, one-stop-shop for commercial organisations to work with, the ITM will definitely help in that process,' he says.

Images of Research

Images of Research is the University Graduate School's annual exhibition of postgraduate research. We challenge postgraduate researchers to sum up their research project in a single image. This year included entries from across the University's five colleges and they were judged on their aesthetic quality and the link between the image and the research. Each year the exhibition is available for public view. In 2015, the fifth year of the competition, 34 images were displayed in the Birmingham Museum & Art Gallery from the 16–22 March and attracted several hundred visitors. As well as our judges' winner, there is also an award for the People's Choice.

Birmingham Metro Extension, Track Instalment – Mohammad Reza Zolfaghari

JUDGES' WINNER

Birmingham Metro Extension, Track Instalment

Mohammad Reza Zolfaghari

New-generation tramways are coming back to Great Britain and undoubtedly they can profoundly affect the regeneration of modern cities, reduction in road traffic, carbon emission and economic growth.

As a research student with a civil engineering/rail background I am working on improving programme/project-management strategies for the construction of modern tramway infrastructures in the UK.

Since tramways are being constructed in city-centre areas with a high volume of commuters and small and large size businesses, the promoters have to deal with different environmental, technical, economic and safety issues that affect the time and cost of the project and consequently the reputation and profitability of the network.

My supervisor, Professor Felix Schmid, and I are working on a best practice to optimise the tramway infrastructure construction through improving programme-management strategies. In this way I am always travelling around to visit tramway construction sites to diagnose the existing gaps in construction methods and programme-management strategies.

This picture was taken by me on 27/05/2014 at Colmore Row Street, located in Birmingham city centre, as a part of the Birmingham Metro Extension Project.

POPULAR WINNER

Historical Re-Evaluations

Hannah Clancy

The image shows a close-up section of the Berlin Wall. I have reconstructed the image by replacing nine images within the photograph with other photographs related to my research. The images represent different forms of cultural communication, such as graffiti, heritage reconstruction, heritage construction, memorialisation and re-appropriation.

My research focuses on how cultural heritage is used, particularly in capital cities, as a tool in what I refer to as 'Historical Re-evaluation'. This is the act of changing the cultural heritage of a place through any means with the conscious or subconscious intention of changing the historic landscape. I am particularly interested in how cultural heritage is used to help smooth over a political transition, such as a post-war period, as well as how cultural heritage is used to brand a capital city and present a chosen image to the world.

Historical Re-Evaluations – Hannah Clancy

Images of Research

A selection of other entries...

Reflections of Nature

Robin Smith

In the movie Hulk, Bruce Banner is zapped with radiation by a machine called Gammasphere. In reality, Gammasphere detects, rather than emits, gamma rays and is used in nuclear physics experiments. Similarly, the Lampshade array, a creation by the CHARISSA (CHARged particle Instrumentation for a Solid State Array) collaboration, is used to detect charged nuclear radiations such as alpha particles in state-of-the-art nuclear physics experiments.

Nuclear physics concerns the study of the dense and complex hearts of atoms – the building blocks of the world. Through measuring nuclear radiation, the detector opens a window to the microscopic, quantum world of the atomic nucleus, providing insight into the strong nuclear force that binds atoms together and, ultimately, why humans exist to contemplate nature.

The smoke around today's stop-smoking science

by Carol Sanders

The use of tobacco dates back thousands of years. Today smokers are bombarded with quit-smoking products or stop-smoking programmes. Muddling through all of the various smoking cessation (SC) products can be overwhelming, especially if the person experiences sabotaging nicotine withdrawal symptoms. The photograph captures vaping and taking an SC medication. The murky background is toxic cigarette smoke, an eerie reminder of the devastating effects smoking tobacco has on health. The process by which smokers become addicted to tobacco is well understood; nicotine plays a pivotal role.

Changing people's unhealthy behaviours can have a major impact on some of the largest causes of mortality and morbidity. Despite SC medications being recognised as one of the most cost-effective health interventions, long-term adherence behaviour is generally poor. The failure to understand adherence behaviours with SC medications in order to support and educate smokers on their effective use, risks, and benefits may represent a lost opportunity for public health.

Our research aims to contribute to the development of interventions to increase adherence with SC medications and provide a valuable addition to NHS SC clinical practice. Behaviours play a significant role in people's health, assuming a significant proportion of the mortality from the leading causes of death is caused by the behaviour of individuals and that such behaviour is modifiable. There is potential to optimise quit-smoking outcomes through changes in behaviours with contemporary SC options.

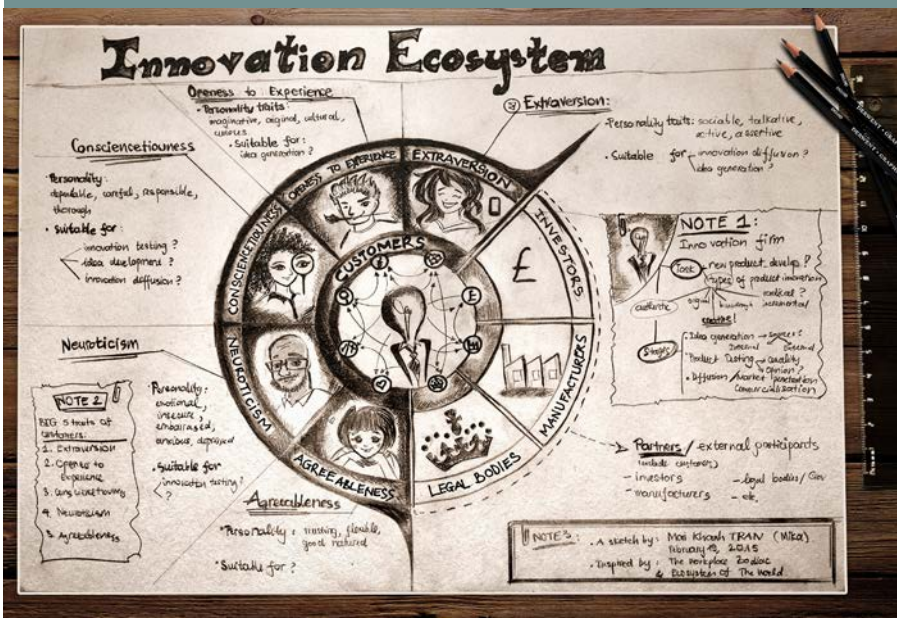
Thinking Collaboratively: Engaging your Customers into the Innovation Ecosystem

by Mai Khanh Tran

Using ecosystem analogy, this freehand sketch illustrates a collaborative innovation environment, which is known to be an increasing phenomenon in new product development (NPD) research. Conceptually, the firm seeking for NPD or product innovation is placed at the centre as the inner core of the Earth. It is covered by the crust constituted by different co-creator groups, including the firm's partners and customers. Thus, the innovation ecosystem highlights the complexity and necessity of different actors and the interactions between them.

For a long time, ecological concepts have been applied to management literature. Innovation ecosystem thinking reveals the fundamental hope of both academicians and practitioners of an expansion of potential co-creators or co-innovators in NPD. Among them, customers have received a growing focus for their contribution of 80% in the NPD process of many industries, including chemical, medical and electronic equipment.

Despite their remarkable contribution, skill sets or expertise of customers are questioned by innovation experts, especially in consumer-goods industries. In response to the fact that getting the knowledge may not be equivalent to wanting and knowing how to co-operate, I have developed my research to study the personality traits of customers for collaborative innovation purposes. Based on the Big Five Traits theory, my research data is expected to suggest a new way to segment customers for effective innovation ecosystem. Moreover, the findings may help individuals recognise their innate ability in innovation and leverage their creativity.



The impact of internal biological time on performance in athletes

Elise Facer-Childs

Everyone is striving to obtain their best. Whether that is at work, at home or in between, there is a huge focus on individual performance. We all know that some of us are better in the morning and some of us love burning the midnight oil. But have you ever thought about why and how?

With our latest research we highlight these differences in athletic performance and show that performance may actually depend on the amount of time that you have been awake that day, not necessarily just what time of day it is. The main focus of this photograph is highlighting the negative (hence negative image colours) effect our 'social clock' or external time can have when we are not following our own 'natural body clock' timing. When external time is out of sync with internal time we cannot perform at our best. Our research provides key information that takes us away from the idea of 'time of the race or game' and leads us to focus on internal biological time, ie, what time is it for your body clock?

'Finding Erin'

Rachel Grosvenor

While writing the first draft of the novel that constitutes my PhD, I began to experiment with moving my story from the page onto canvas. I have two main characters in my novel, and this piece of art is representative of my journey to find the character of Erin. Erin has been loosely based on myself, yet still her character has been difficult to build. At points it felt like Erin was someone that I couldn't get quite right, as though she were being elusive on purpose, remaining just out of reach. This artwork represents that feeling. The trees at the front, reminiscent of hands reaching toward the stars, block your view of the road ahead. When I look back at this piece I remember the difficulty of finding that voice, and I see the troubles that may block the path as I move on to my second draft.

Meet the ARTISTS IN RESIDENCE

'The University of Birmingham's Artists in Residency programme invites artists onto campus to explore what we have here and what we do. They often ask questions and challenge the way that we think, offering new interpretations and fresh perspectives. This academic year we are hosting residencies for some superb artists who will work across a range of media and draw on diverse aspects of our research and cultural collections. Please do make contact with these artists, visit their studios on campus and talk to them about your work. We want you to excite and inspire each other.'

Clare Mullett, University Curator

Anne Parouty

Anne's residency is based at Hayloft Studios, Winterbourne House and Garden and will see her creating cyanotypes using plant materials from the garden.

Cyanotype, invented by Sir John Herschel in the 19th century, was one of the first processes to successfully capture images with light. Cyanotypes use iron salts to give a blue and white image. The process is slow photographically and was used to reproduce mechanical drawings, which became known as 'blue-prints'. Many of Anne's images are exposed for over a month. The quality of light, paper type, chemicals and the plant materials themselves all affect the image meaning that every picture is unique.

During a spell in Paris, she developed her love of photography and experimented with different traditional types of developing images, such as gum bichromate. Art college was never on the agenda, she developed her practice by making work, *'when I'm working at my best it just flows, I've never been one for over-thinking, capturing a moment of beauty is what draws me.'*

Her current project was a happy accident, after leaving a mushroom on a pile of paper she was intrigued by the imprint that it left behind. Working with fungus appealed to Anne who loves walking the line between art and science, *'I'm constantly learning as an artist and see my work as one long experimentation.'*

www.cyanne.co.uk

Matt Westbrook

Matt's work considers how illustrations can be used to tell a story; most recently working with creative writing students via a series of workshops. Students were shown an object out of context and asked to develop a story around it.

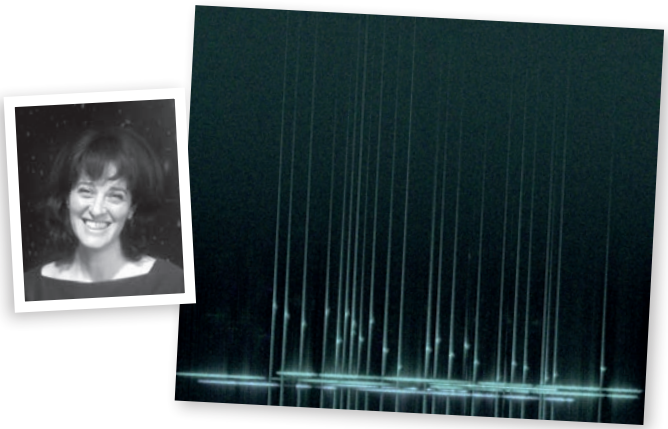
Using specialist equipment available at the University, such as a book clamp, Matt is hoping to produce a fore-edge book. Fore-edged printing allows an image to be seen on the side of book when held at an angle. In addition to printmaking he is also interested in collage-making, inspired by archived books, such as the vintage tool catalogue, the *New Motoring Encyclopaedia*, which features detailed sketches.

During his one-year residency at the University Matt aims to *'visualise rare books from the Cadbury Research Library and draw a narrative of campus.'* Illustrations can alter an audience's perspective of a written piece of work; Matt tells the story of how the drawings by John Tenniel in the original publication of Lewis Carroll's *Alice's Adventures in Wonderland* presented an interpretation of the characters that has shaped how we continue to view them.

Utilising the audience on campus Matt will also conduct research exploring the relationship and interplay between words and images. *'I want to look at how people interpret images, specifically those used online to tell a story including new forms of imagery such as emoji. I would like to create a visual representation of campus using emoji icons.'*

Matt is also involved in Birmingham Art Zine (BAZ), a tongue-in-cheek art-world think-tank, that uses humour to present ideas. Projects include the imaginative campaign to link the 31 Birminghams around the globe and celebrate them as 'Magic Cities'; the Magic City being the moniker of Birmingham, Alabama.

www.mattwestbrook.co.uk



Caroline Devine

Caroline works with sound, creating compositions from sounds and signals around us that are ignored or ordinarily imperceptible and presenting them in the form of multi-channel sound installations. Her sound works can include electromagnetic and other signals, mediated through technology as they are usually inaudible to the human ear.

Scientists at the University run a global network of telescopes called the Birmingham Solar-Oscillations Network (BiSON) that studies the Sun's natural acoustic resonances (or listening to the Sun). Gentle oscillations on the surface of the Sun and other stars are observed and analysed by the team, providing information on stellar structure and evolution.

Caroline began working with Professor Bill Chaplin and the BiSON team in 2012 and became *'fascinated with the sounds of the stars.'* She used BiSON data for 5 Minute Oscillations of the Sun, a multi-channel sound installation sited in an outdoor dome structure that was shortlisted for a British Composer Award. Her recent residency with the University, funded with a Leverhulme Grant, allowed her to work with astrophysicists in the School of Physics and Astronomy and further her understanding of the science behind the data. Working alongside experts in helioseismology, the study of waves within the sun, and asteroseismology, the study of waves within other stars, presented a unique opportunity for Caroline to use data from the NASA Kepler mission in her work.

'The residency has been a fantastic opportunity to explore and discover, and to develop conversations with others seeking to understand the natural physical world through sound.'

An installation, part of the Arts & Science Festival and sited in Birmingham's historic landmark, Perrott's Folly, will use sonified stellar frequencies and rhythms generated by the orbits of newly discovered exoplanets from data collected during NASA's Kepler mission and analysed by the University's academics.
www.carolinedevine.co.uk

Antonio Roberts

Antonio's interests lie in re-mix culture – the taking of an art work and creating a new piece. He explains his motives can be misunderstood but *'it is not done with any malice but as an homage to the original. Some of Andy Warhol's best work and those by seminal Hip-Hop artists would not have existed if they had not been inspired by the imagery or sounds around them.'*

In recent years there has been a liberalisation towards copyright and a push towards 'free culture', something that Antonio identifies with: *'the "Copyleft" movement enables the sharing of works for remixing, allowing great things to happen.'* Antonio shares all of his work online and wants to highlight the benefits of doing so.

In November he began a 12-month residency at the University and will work to inject new life in the University's cultural archives while exploring unconventional ways of creating art and record his research into the growth of digital art forms. He has already used photographs of sculptures in the Barber to create digital animations with free online editing tools.

'As new technologies appear there will be new ways of producing and reinventing art, for example you could 3D print a traditional sculpture, the possibilities are endless. I'm particularly interested in the collection at the Lapworth [Museum of Geology] – imagine if you could find a method of breathing life into the fossils held there, metaphorically speaking.'

Antonio has previously curated an exhibition of 3D printing and glitch art at the Barber Institute of Fine Arts, sharing the same space with centuries-old classical paintings. Glitch art is the visual presentation of digital errors by corrupting digital codes or by physically manipulating electronic devices.
Archiveremix.tumblr.com and **www.hellocatfood.com**

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transforming our campus

Staff and students count down to the new Birmingham Dental Hospital and School of Dentistry at Pebble Mill

Clinical staff and students from the Birmingham Dental Hospital and School of Dentistry have visited the construction site of the new facility to have a 'sneak preview' of the build, with a year to go until students begin their studies and clinicians start treating patients at this landmark building.

This integrated, stand alone dental hospital and new home of the University's School of Dentistry is the first to be built in the UK for almost 40 years.

Reinforcing the strong partnership between Birmingham Community Healthcare NHS Trust and the University of Birmingham, the new facility will secure dental training in the region for many years to come, supporting the future workforce, attracting high-quality healthcare and academic staff and guaranteeing a high standard of expertise and dental care for patients.

This significant investment evidences the commitment of the NHS and the University of Birmingham to secure a state-of-the-art clinical and educational dental resource fit for the 21st century for the population of the West Midlands.

The new environment will incorporate leading-edge technology, supporting delivery of world-class service, teaching and research for many internationally renowned leaders in their clinical field.

Questions about the new building were one of the most popular topics of conversation at recent open days with excitement about the project mounting among prospective students. Students applying to the University this year will be the first to go straight into the new building from year one.

Kris Coomar, the School Admissions Tutor said: *'The strong international reputation of the School has always been a draw for applicants to our courses. However, the opportunity for our latest candidates to be the first cohort of students fully trained in the new Birmingham Dental Hospital and School of Dentistry has been a significant attraction and cause of great excitement this year. I have no doubt that our new building will continue to attract prospective students for years to come.'*

An aerial shot of the new School with a year to go. Credit: **BaS LiFT**

Youssef Mousa, first-year Dentistry student, Professor Phil Lumey, Head of the School of Dentistry and Yuhong He, first-year Dentistry student at the University on the site of the new School

Grange Road development also gets the thumbs up from planners

Planning permission was recently granted by Birmingham City Council for the brand new hall of residence and a new sports pavilion being built near the Grange Road gate of main campus. There will be space for 178 student bedrooms in the new residence and the plans also include a new sports pavilion and changing rooms for people using the nearby Bournbrook pitches.

Chamberlain – first block reaches the top

The new Chamberlain hall of residence, due to open to students in September this year, is being built on the site of the former Chamberlain Hall. The new residence, which will be home to around 726 students when complete, is made up of three low rise blocks and one tower of around 20 storeys. The lower blocks are positioned to allow views into the Vale from Church Road, and the first of these blocks has now reached its highest point.

At a topping out ceremony held recently to mark this milestone, Guild of Students Vice-President for Housing and Community, Jack Mably, was invited to lay the final area of concrete on the roof. Outgoing Aitken Wing Residents' Association representatives Bryony Anderson and Eloise Hopes were also present to take a closer look at what Vale residents of 2015/16 might be able to expect. Jack said: *'After visiting the site – I cannot wait for the finished result! The project is a massive one that has not been an easy feat – a lot of hard work and motivation has already gone into the project. I am confident the end result will be fantastic.'*

Lesley Stewart, Director of Residential and Environmental Services at the University also attended the ceremony. She said: *'Today is the culmination of years of planning, discussion and design and I am delighted to see Chamberlain reach this important milestone. This project illustrates our on-going commitment to invest in our stock of accommodation to ensure that our buildings are both modern and sustainable and offer up-to-date facilities for our students.'*

Colin Harper, Balfour Beatty Project Manager and Lesley Stewart, Director of Residential and Environmental Services, at the topping out ceremony

Guild VP Housing and Community, Jack Mably, fills the final section of concrete

Unique forest experiment given the green light

A major new decade-long experiment to study the impact of climate and environmental change on woodlands is a step closer to reality, as planning permission was granted by Stafford Borough Council.

The Birmingham Institute of Forest Research (BIFoR) field facility, which has been made possible thanks to a transformational £15 million donation, will be created in Mill Haft Wood in Norbury, Staffordshire. BIFoR will be a world-leading initiative, which combined with four similar experiments in other climate zones, will form the largest machine ever built to study how landscapes will respond to our changing climate. The development will begin on site in late spring 2015, with tree enabling works and work to protect the ecology of the area carried out beforehand.

BIFoR will carry out a unique scientific experiment called Free-Air Carbon Dioxide Enrichment (FACE), which involves treating 30-metre plots of semi-natural oak woodland to the concentrations of carbon dioxide expected to prevail in 2050. Autonomous sensors and instrumented trees will allow scientists to take measurements continuously and remotely, over timescales ranging from seconds to decades, to follow the carbon as it is taken up by the plants and moved through the woodland ecosystem. The woodland at Mill Haft has been chosen because it is an unmanaged forest of mature trees – whereas similar experiments have only been carried out on young trees in plantations. The findings of the experiment will provide the evidence on which to base strategies for the protection of iconic landscape features, such as oak woodlands, into the future.

The entire experiment depends on changing the woodland as little as possible. Therefore, all of the experimental equipment will be nestled into the woodland by hand, and the ancillary buildings are designed to ensure they blend in with the forest rather than stand out. The proposed lighting is low-level and non-intrusive to minimise interference with wildlife and to ensure that the facility sits unobtrusively in its location.

Director of BIFoR and Professor of Atmospheric Science, Rob MacKenzie, said: *'We are delighted that Stafford Borough Council has approved our application, and we look forward to becoming part of the community in Norbury. We want BIFoR to become a world-leading centre in the understanding of how forests react to the threats which they face. Our Institute is supported by the Forestry Commission, Natural England, the Woodland Trust, and many other organisations who share our ambition to understand and manage our precious land resource in the UK.'*

'We want BIFoR to become a world-leading centre in the understanding of how forests react to the threats which they face.'

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WHAT'S THE NAME OF THE GAME?

An interactive campaign is giving you the chance to name the gym in the University's new sports centre.

You can help to name the University's new state-of-the-art gym by voting for your favourite sporting hero who has pledged their support for the facility.

The £55 million sports centre will include Birmingham's first 50-metre swimming pool, and a wide range of other amenities to cater for students, staff, and the wider community. Alumni will also be able to join the sports centre and use facilities including six squash courts, a 225-station gym, a climbing wall, and fitness classes for all levels and abilities.

ELLIE SIMMONDS OBE

Four-time Paralympic Champion with ten world records to her name. Ellie received her OBE in the 2013 New Year's Honours in recognition of services to Paralympic sport. Ellie grew up near Birmingham but had to relocate to Swansea to train due to the lack of a 50-metre pool. Our sports centre will help provide training facilities for future champions.

WHOSE NAME WILL BE IN THIS BUILDING?

WIN

There will be a wide range of great competitions throughout *Name of the Game* and the University is offering one lucky winner the chance to win a piece of Birmingham history – signs from the Gun Barrels pub! For a chance to win – answer the following question:

How many stations will there be in the new gym?

Email the answer, your name, and degree details to **alumnicommunications@contacts.bham.ac.uk** by 31 October 2014. Terms and conditions apply: **www.birmingham.ac.uk/alumnicompetitions**

CHRISSIE WELLINGTON MBE (BSC GEOGRAPHY, 1998)

Four-time Ironman Triathlon World Champion, and the first British athlete to hold the title. In 2009 Chrissie was voted *Sunday Times* Sportswoman of the Year, and in 2010 was awarded an MBE. As a passionate alumna and campaigner for women's sport, Chrissie is supporting the sports centre as an inspirational community facility.

GLADSTONE SMALL

Former England and Warwickshire cricketer, and one of the most popular characters in County Cricket. With close ties to the city and fond memories of training at the University's running track, Gladstone is delighted to support the *Name of the Game*.

VOTE NOW!

To find out more about why Ellie, Gladstone and Chrissie are supporting the sports centre, and to cast your vote, head to **www.birmingham.ac.uk/nameofthegame**. The website also offers a sneak peek at what the finished facilities will look like, some great games that reveal fascinating facts about the new sports centre, and regular competitions.

You can follow **@votenotg** on Twitter for the latest news on the campaign and the participants.

You can also vote by texting **GLADSTONE, ELLIE** or **CHRISSIE** to 70099.

Texts cost £1 plus standard rate text message charge. A minimum of 97p depending on your service provider will be received by the University of Birmingham, charity exemption number X7237. Helpline: +44 (0)121 414 8894.

Fun fact

The distance run on treadmills in the new gym will exceed 100,000 kilometres per year – more than twice around the world.

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