The future’s bright
CARDIFF’S WORLD-CLASS POSTGRADUATES

LIFE-CHANGING SCIENCE
Breakthroughs in cancer research and IVF treatment

A LABORATORY FOR THE HUMANITIES
Revealing the Cardiff Rare Books Collection’s hidden gems
Welcome to this issue of the Cardiff University Magazine. Since I took up my new role as Vice-Chancellor and President of Cardiff University on 1st September, I’ve learnt much about Cardiff, its staff, its students and its alumni. I’ve already been lucky enough to meet some of our former students on a recent trip to Beijing and I hope to be able to meet many more of you around the world in the months and years to come.

What is clear to me is that when our students arrive here in Cardiff, whether as excited new undergraduates, experienced postgraduate researchers or mature students juggling their studies with other responsibilities, that first day is the start of a lifelong relationship, one which brings them friendship and fellowship with both the people and the place where they spend their student life.

Amongst the many thousands of students here in Cardiff we have a vibrant and growing postgraduate research community, one which is vital to our research efforts and success. Their work and experiences are the focus for this issue of the Cardiff University Magazine. From their innovation and commitment working alongside our leading researchers in the fight against cancer to helping to support orphans of HIV and AIDS in rural Malawi, Cardiff postgraduates are trailblazers.

Our postgraduate research students are leading the way in solving the many problems we all face in our varied societies worldwide; medical, cultural, ethical and political. These bright and brilliant minds are busy solving the problems we all have today. I believe all our tomorrows will be the better because of their hard work.

Wherever you are when you read this magazine, thank you for your continued support of our work.

Professor Colin Riordan
Vice-Chancellor & President
Satisfaction guaranteed

Student satisfaction at Cardiff has reached its highest level since the introduction of the annual National Student Survey in 2005. Students rated the University highly in a number of areas, including teaching, assessment and feedback, academic support and learning resources, with 91 per cent of the University’s students satisfied with the quality of their course.

Satisfaction rates were high throughout the humanities, science, engineering, healthcare and the professions. The survey also included a question on the quality of students’ unions, with Cardiff coming well above the UK average.

Cardiff has the highest number of overall satisfied students in Wales, and ranked fifth amongst the best research-intensive universities in the UK. Professor Patricia Price, the University’s newly appointed Pro Vice-Chancellor for Student Experience and Academic Standards said: “There is much to be proud of in our learning and teaching. This result is especially pleasing as it reflects the true views of our students – and the hard work of staff across the University.”

Cardiff: top 20 ranking

Those who sing Cardiff University’s praises recently got confirmation of the institution’s position as one of the UK’s top universities. The Sunday Times University Guide 2013 places Cardiff in the UK’s top 20, and also shortlists the University for the ‘University of the Year’ title.

The guide states: “This powerhouse of academic and research excellence boasts one of the best graduate employment rates in Britain. Students don’t just get any old job either – most secure degree-level posts with decent starting salaries.”

Cardiff’s position comes through attaining high standards in a number of areas: student satisfaction, teaching and research quality, entrance qualifications held by new students, degree results achieved, student/staff ratios, graduate employment levels and retention levels.

Alistair McCall, editor of the guide, said: “Our league table rewards universities which have placed great focus on providing top quality teaching.”

“If a university provides a great student experience and offers good graduate job prospects, plus a strong track record for degree completion and outcomes, good rankings and students will follow.”

In the spotlight

The University's Vertical Studio module gave first and second year Architectural Studies students the opportunity to project animation and imagery onto some of the University’s best known buildings this autumn.

Students learned how to translate designs, surveys and theoretical discussion into 3D modelling and animation, giving them the opportunity to explore themes and techniques outside those of normal design projects.

“Innovative methods and tools were used in a way which explored architecture outside the studio. The results engaged the public through an exciting and novel medium,” says Nick Humes, Research Associate and Module Leader.

Nick hopes that this new way of looking at buildings not only “energised the facades, but also provided the students with a new understanding of architectural techniques,” something that can assist them in future career development.

Reducing the threat of bioterrorism

Researchers from Cardiff are working with scientists from the USA, Turkey and Georgia to develop a vaccine that could be used if anthrax is used in a terrorist attack, as was the case in the US postal attacks of 2001.

Cardiff Microbiology Professor Las Ballie, from the School of Pharmacy & Pharmaceutical Sciences, is leading a NATO project that will study the potential misuse of anthrax.

“Currently, the majority of the world’s population is susceptible to infection with Bacillus anthracis, the bacterium which causes anthrax.”

However, as natural human infection of anthrax is rare in NATO countries, scientists are conducting research in regions where anthrax represents a significant disease of animals and humans, such as the Caucasus. In addition to NATO countries being prepared for the threat of anthrax attacks, the establishment of a research centre in Georgia will ultimately help improve the living of people in that region.
Recognition for two decades of research

Having spent 20 years looking at the causes, prevention and treatment of schizophrenia, in October Professor Mike Owen and Michael O’Donovan from the University’s MRC Centre for Neuropsychiatric Genetics and Genomics were awarded the distinguished Lieber Prize for Schizophrenia Research in New York.

The professors’ work involves finding out which genetic variations make people more susceptible to the disease, and the way psychiatric disorders are classified may be revised as a result of their findings.

The $50,000 prize rewards the achievement, as well as providing further incentive to carry out future research.

“It’s great for science in Wales and great for Cardiff University, which has really backed us over the past 20 years,” said Mike Owen.

Michael O’Donovan continues: “Psychiatric genetics has not always been a popular area of research – it still isn’t. But while the job isn’t finished, enough progress has been made in this area of research to merit the team’s reward and to move the field forward.”

Cardiff’s new structure

The University took on a new look in September as three Colleges, each under the leadership of a Pro Vice-Chancellor.

The College of Arts, Humanities and Social Sciences
Pro Vice-Chancellor and Head of College – Professor George Boyne
The College consists of 11 Schools: Business; Planning and Geography; English, Communication and Philosophy; European Languages; Translation and Politics; History; Archaeology and Religion; Journalism, Media and Cultural Studies; Law; Lifelong Learning; Music; Social Sciences; Welsh.

The College of Biomedical and Life Sciences
Pro Vice-Chancellor and Head of College – Professor Dylan Jones
The College consists of nine Schools: Biosciences; Dentistry; Healthcare Studies; Medicine; Nursing and Midwifery Studies; Optometry and Vision Sciences; Pharmacy and Pharmaceutical Sciences; Postgraduate Medical and Dental Education; Psychology.

The College of Physical Sciences
Pro Vice-Chancellor and Head of College – Professor Karen Holford
The College consists of seven Schools: Architecture; Chemistry; Computer Science and Informatics; Earth and Ocean Sciences; Engineering; Mathematics; Physics and Astronomy.
Trevithick thank you

Anyone who has studied engineering, computing, physics and astronomy at Cardiff will doubtless have memories of the University’s Trevithick Library.

The complete refurbishment of the library in 2009 has been met with resounding praise from everyone who uses the facility, with its highest ever visitor numbers since it reopened.

Between 40 and 50 people leave their bodies to Cardiff University each year. Without donations of this kind, dentists, doctors, surgeons and pathologists of the future would be unable to get experience of the human body that is so vital for their training.

It’s to honour those who have donated their bodies to the University that Cardiff’s Anatomy Laboratory, the largest anatomy room in the UK, has recently unveiled a unique piece of artwork by renowned artist Tom Phillips.

The marble artwork (right) bears the inscription ‘Alive we thought beyond our lives to give our bodies as a book for you to read’, words that will be considered by the 800 undergraduate and 100 postgraduate students who regularly use the laboratory. In addition to the dental, medical and biomedical science students who benefit from these donations, the laboratory is also used by students of radiography, physiotherapy, podiatry, art and optometry, and for medical and surgery training sessions and courses.

Bernard Moxham, Professor of Anatomy in the Cardiff School of Biosciences, said: “This valuable learning experience is due entirely to the generosity of donors who leave their bodies to the University, and, in doing so, give a gift of life and knowledge for future generations.”

Body of research

In November, Griff Rhys Jones brought an element of celebrity to the celebration of the work of Cardiff’s flagship Sustainable Places Research Institute.

As one of the UK’s best-known television personalities, Griff knows a thing or two about adopting the long view, which is perhaps one of the reasons he decided to become patron of the Institute in 2011.

A Cardiff University Honorary Fellow whose father was a graduate of the University, Griff said: “The Sustainable Places Research Institute is a brilliant example of how our research is helping to create a sustainable future for communities around the world. Across the University there are other such examples.

“Alongside our research, staff and students are working hard to ensure our day-to-day operations are generating less waste and are as efficient as possible.

“What Cardiff has achieved to date is something to be proud of, but as a University we need to take the next step. Cardiff can be one of the greenest universities in the UK, one that sets the standard for other institutions and organisations – we mustn’t be afraid to think bigger.”

Long-term thinking

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A lifetime of service

Cardiff was honoured to have one of the University’s longest-standing benefactors visit in September. Captain Ken Nelson (below), who was born in South Wales, was studying for a degree in civil engineering when his studies were interrupted by the outbreak of the Second World War. Service in the Army and Royal Air Force was followed by a return to the University to complete his studies, before Captain Nelson took a job with the Victoria Water Commission in Australia, his adopted country where he remains to this day.

Throughout his career as a water engineer, Captain Nelson has been contributing to the Nelson Scholarship Fund, with a total donation of £150,000.

Along with a tour of the School of Engineering, Captain Nelson had the opportunity to meet with students who have benefited from his generosity over the years.
Cardiff is internationally recognised as one of Britain’s top research-intensive universities. Meet four of the University’s postgraduate research students leading the way ahead

Mandayachepa Nyando

Caring for victims of HIV/AIDS in Malawi

‘Mayi is an old lady in her 70s. She looks after her niece, who is 11 years old and HIV positive.’

It’s hard not to be moved by the first sentence of Mandayachepa Nyando’s research paper, but unfortunately this is a situation all too commonplace in many African countries, including his homeland of Malawi.

‘The small animal’, as HIV/AIDS is known in Malawi, directly affects an estimated 12% of the population. This was one of the factors that led to Mandayachepa’s decision to do a PhD on HIV/AIDS in Malawi, and follows a master’s in Nursing also taken at Cardiff.

“The majority of caregivers are mothers who live in rural areas,” says Mandayachepa. “They are less educated and are amongst the poorest in the country. Resources are very limited for caring for children living with HIV/AIDS, and the carers struggle to get materials and food resources for their family members.

“The women described their child’s illness as a heavy burden. Caring for a child who has a lifelong illness such as HIV and AIDS is a difficult task. In addition to looking after this child, they also talked of taking care of other children who are HIV negative.

These women demonstrated that they are highly motivated and resilient, however, their role as carers is largely unrecognized.

Mandayachepa’s research has found that, as well as having the responsibility of looking after a child who is HIV positive, women are often having to look after their husbands and the burden of financially supporting their family also passes to them.

Mayi continues: ‘My husband – the problem is that he is a farmer and he is also touched by the small animal and he has problems finding money as well. He gets sick often and sleeps in the hospital frequently.’

“It’s a disastrous situation for the HIV and AIDS orphans,” continues Mandayachepa, “because they won’t grow up within a family. Some have suggested there will be social disintegration in Malawi because of this.”

Although it’s hard to believe, Mandayachepa often found these people, facing the toughest of situations, were able to present a positive face to the tragedy around them. “The mood of caregivers was generally positive about the future, although my interviews rekindled sad memories and experiences.”

The future’s bright

www.cardiff.ac.uk
Joe O’Connell

The politics of punk

The punk rock years have taken on an almost mythical status in the history of UK popular music. As well as giving young people the opportunity to rebel against the norms of the day, the genre was also a voice for many against Thatcherism, the establishment, racism, and the 10-minute prog-rock guitar solo.

Joe O’Connell, a trained instrumentalist who first came to Cardiff to study clarinet, before coming to Cardiff University, is dedicating his PhD to punk and the politics of the bands, and people who followed them.

“There always had an interest in popular music and politics, and the time the two came together in a way as never before was during the post-punk era,” says Joe. “While initially punk wasn’t political, some punks saw the potential for political discourse and activism within the genre, especially with the rise of the National Front.”

“Rock Against Racism was a grassroots musical protest movement formed in 1976, and between then and 1979 almost 800 events took place under the RAR banner, including two caravans that drew crowds of up to 100,000 in Manchester and London.” At its peak the National Front became the fourth largest political party in the UK, successfully stirring up tensions between minority and white working class communities.

This fascist organisation’s popularity was boosted by numerous speeches by Enoch Powell, while musicians such as David Bowie and Eric Clapton seemed to play to these views.

“Some interesting field work has included interviewing members of a punk band called Alien Kulture. This band, which was formed after members went to a RAR gig in London, comprised three first generation British-Pakistani members. They say Rock Against Racism as a natural home when many around them seemed to be questioning their right to be in this country. Interestingly, although Alien Kulture were firmly against the establishment at the time, two members of the band have gone on to work in the financial services in London!”

And what about today – is there still a strong association between popular music and politics?

“In the late 70s the Labour and Conservative parties were about as far apart politically as it was possible to be. Nowadays there doesn’t seem to be that fragmentation to the same extent, perhaps that has meant young people don’t feel the need to rebel through music. However, a song such as ‘Ill Manos’ by Plan B shows there’s still anger with the system, and that gets played on BBC Radio 1.”
Giving postgraduates the edge

Cardiff’s mission: to attract the world’s brightest postgraduate researchers. With cutting-edge facilities and greater investment in training and support, students are already reaping the rewards, reports Sian Phillips

In the not so distant past, starting a research degree was often the beginning of a meandering journey of languorous study over an indeterminate number of years. Nowadays, the postgraduate experience couldn’t be more different.

“The vast majority of research students at Cardiff University complete their doctorate within a four-year limit,” says Professor Ken Wann, Deputy Dean of the University Graduate College (UGC), which opened two years ago to support postgraduate students.

“It’s a big ask,” he says. “We want our postgraduates to produce high-quality research – this is vital for our reputation and can help secure funding for the University – but they are also teaching and interacting with undergraduates. We also want the research students to develop a skillset that might be useful for them beyond their years at Cardiff. It’s a very demanding few years.”

“Cardiff is one of the UK’s top research universities. It’s our vision to be a location for world-class research and to attract the highest-quality research students from the UK and overseas,” says Professor Terry Marsden, Dean of UGC.

“To ensure Cardiff attracts and maintains a vibrant research community, we opened the University Graduate College, which works across the schools and colleges. The aim is to develop and improve the PhD experience by supporting postgraduate students with training, providing excellent study facilities and increasing the capacity for research.”

UGC has also fulfilled the function of building a more cohesive postgraduate community. Over 500 research students begin their PhD work at Cardiff University each year, and they and their supervisors are all members of UGC. Previously, there were four graduate schools arranged by disciplines (social sciences, arts and humanities, physical sciences and engineering, and biomedical and life sciences) and although there were four graduate schools arranged by disciplines (social sciences, arts and humanities, physical sciences and engineering, and biomedical and life sciences) and although individually each was highly effective, there wasn’t much connection between them.

“When we created UGC, we wanted to make sure that all research students had the same experience – that they all had the same access to any training and development support, good facilities and dedicated workspaces in which to do their work, and access to everything they need to carry out their PhD,” says Professor Wann. “We wanted to make it very attractive for postgraduates to study at Cardiff.”

Training and development

One of UGC’s functions is to offer an extensive training and development programme for postgraduate researchers – around 200 different courses in all.

“There are the expected courses such as presentation skills and project management, as well as topics like understanding the impact of research on policy, or engaging with schools and communities,” says Terri Delahunty, Head of Administration for UGC.

The UGC Programme was shortlisted for the 2010 Times Higher Education Award, Outstanding Support for Research Students.
for Early Career Researchers. Its success, says Professor Wann, “has certainly added to the completion of PhDs. We want support for everyone who is beginning to use T witter for doing research, with a decent standard of living, without having to find a job on the side. It enables them to rent a nice place to live, and to join sports teams as well. In this way, I can really focus on my PhD itself, and not have to worry about money.”

Professor Wann says that the dedicated space will further enhance UGC and he anticipates some unexpected outcomes: “Having a ‘collusion area’ for UGC is very exciting because some of the best ideas and best discussions come from corridor chats.”

Since 1999, there has been a Graduate Centre in the students’ union building on Park Place in which postgraduate students can socialise in a café bar, use the IT room, or meet in the lounge.

For his PhD, Euan Murchison, a human rights researcher, says, “The knowledge network has been very useful as it has given me a chance to familiarise myself with different aspects of multiculturalism. In addition, the financial support that my scholarship has given me is very important. Without it, I would have had to study part time, and it would have meant taking much longer to complete my thesis.”

On a university level, the University Graduate College offers funding for postgraduate students to organise conferences and the like to develop practical skills that will be helpful for us in our careers.”
The Cardiff Rare Books Collection is a huge boost to the University’s standing as a centre for research in the humanities, discovers Tom Burnett

Inside the room that houses the University’s recently acquired Cardiff Rare Books Collection, I’m almost nervous at the thought of being able to look amongst the 14,000 or so dusty volumes that make up one of the UK’s most important collections of texts. The books are kept in a vault in the basement of Cardiff’s Arts and Social Studies Library, and with one turn of a handle an entire room of bookcases moves silently along runners concealed beneath the floor.

Peter Keelan, Head of Special Collections and Archives, and Rare Books Cataloguer Ken Gibb show me around, and it’s quickly apparent that their joy at securing a collection of this importance hasn’t diminished in the slightest.

“There are so many books of huge importance for those studying the humanities,” says Peter. “The collection includes examples of incunabula, as books printed before 1500 are known; over 400 ancient bibles dating from 1540 onwards; atlases, including a world map published in 1492; a set of 17th-century Restoration plays; 17th-century copies of Shakespeare’s works and many examples from the private presses of Victorian publishers.”

“With no university in Wales until the later 19th century, it was the great families of the day – the Howells, Butes and Corys for example – who built up the libraries that form much of this collection. There are also texts from scholarly families, people who had been to Oxford and Cambridge who then continued to collect for their private libraries.”

“These collections were either donated to or bought by Cardiff City Council over the years, but as the municipal library’s remit has become more about new books rather than old texts, the collection ended up in storage, available only to those who knew of its existence.”

“One of the most exciting aspects is that you are given a glimpse into the personalities of the people who owned these books,” continues Ken. “A gentleman’s library exhibited his taste in authors and subjects, but the marks he made within these books show the personalities of the people who owned these books.”

“The books are already being used for research and will help to attract the next, with notes inside the front cover giving us a glimpse into the past.”

Ken is halfway through a three-year cataloguing programme funded by the Esmée Fairbairn Foundation, and admits that he does sometimes lay awake at night thinking about the enormity of the task.

“I’ve worked with ancient manuscripts at a number of institutions, including the Bodleian Library at the University of Oxford, but this is the first opportunity I’ve had to catalogue a collection almost from scratch. The books have been largely untouched since the 1950s, so the first task is to find out what’s in the collection, what condition the books are in, and to keep people informed as to the gems we’re finding, which we do through the Special Collections and Archives blog.”

And how do the archivists envisage the collection will be used in the future? Does the condition of many of the books mean they’re going to be kept under lock and key?

“The marks made within these books show what collectors were thinking.”

“The books are already being used for research and will help to attract the

Peter Keelan (left) and Ken Gibb in the Salisbury ‘stack’, Cardiff University’s unique collection of Welsh literature and reference books
best scholarly minds to Cardiff, they will also be available for members of the public to browse through using Turning the Pages equipment and software, which can be lent out to libraries around the country,” says Peter.

University Archivist Alison Harvey adds: “We work with academics to find out what’s currently being studied and how the collection could enhance this. As archivists, we build up knowledge of what’s in the collection, both through cataloguing and in our heads. We encourage people from the University and wider public to come and see us to find out how we can help with their research or interests.”

But that’s not to say the collection is open for general viewing. With some of the books perilously close to disintegration, many will have to wait for the texts to be conserved, digitised or written about in the blog to find out what secrets the collection holds.

However, the collection means that Cardiff’s stock as a centre for research excellence has skyrocketed – it really could be called a ‘laboratory for the humanities’ – thanks to the efforts of those determined to keep a collection of such importance both in the UK and in the public realm.

Janet Peters, Director of University Libraries and Chair of the Board of Research Libraries UK and one of the figures instrumental to bringing the collection to the University, said: “With today’s public libraries having a very different remit from that of the past, Cardiff Council Library Service decided to sell the collection to raise funds to further modernise the city’s libraries.

“But there was huge interest from the private sector, many will have to wait for the texts to be conserved, digitised or written about in the blog to find out what secrets the collection holds.

To find out more, take a look at http://scolarcardiff.wordpress.com/

Hidden gems

Tiny monsters
This 1667 edition of Robert Hooke’s Micrographia gave biologists the chance to study tiny organisms for the first time, and was the country’s first scientific bestseller.

Works of art
William Morris, a giant of the Arts and Crafts movement in the late 19th century, established the Kelmscott Press in order that book publishing could become an art form once again. The collection includes embroidered book covers and elaborate fonts, and even has proofs with scribbled comments and suggestions by Morris himself.

John Dee
The book signed by John Dee is a copy of Summa contra gentiles by Thomas Aquinas, published in Paris in 1519. Dr Dee, as mathematician and astrologer to Elizabeth I, had a library of 4,000 books, however his house was looted by a mob in 1583 and, although many of the books were recovered, Dee eventually had to part with them due to his straightened circumstances.

John Gould’s pictures of birds led to him becoming the most celebrated ornithologist in Victorian Britain. The subjects were stuffed skins sent back from the Americas, and he only saw a live hummingbird later in life when he travelled to the US.

Above: John Gould’s pictures of birds led to him becoming the most celebrated ornithologist in Victorian Britain. His subjects were stuffed skins sent back from the Americas, and he only saw a live hummingbird later in life when he travelled to the US.

Killing cancer cells and bringing the spark of life to human embryos are among the developments being pioneered at Cardiff, discovers Katrina Hendley

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Breakthrough thinking

Killing cancer cells and bringing the spark of life to human embryos are among the developments being pioneered at Cardiff, discovers Katrina Hendley.
Luke Piggott, a PhD student based in the School of Biosciences, is proving a little elusive. He has played a leading role in the breast cancer research breakthroughs achieved in Dr Richard Clarkson’s lab, so I fear I will have to talk to him about the group’s next project. Everyone has been impressively efficient in responding to my requests for interviews, but not Luke.

Then, while Dr Clarkson is very patiently putting his lab’s complex work into context for me, I find out why Luke has had other things on his mind. After breaking off to take a phone call from his student, Dr Clarkson explains: “It’s a big day for him – he’s handing his PhD thesis in.” That’ll explain it, then.

Luke has, in fact, had something of a run of big days over the course of his PhD. Not only has he notched up two significant research breakthroughs, he’s also established himself as a professional ice hockey player for the Cardiff Devils.

“I have very long days, but the ice hockey is a great release,” he admits (after handing his thesis in). “I have very long days, but the ice hockey is a great release,” he admits (after handing his thesis in). “I have very long days, but the ice hockey is a great release.”

Luke also found that TRAIL can be used to kill the cancer stem cells in patients that have become resistant to tamoxifen, a drug commonly used to treat breast cancer. “This is particularly exciting because clinicians are running out for a therapy that will treat relapsed patients,” explains Dr Clarkson. Currently, they can only call on very toxic chemotherapies – TRAIL is far more gentle and it eliminates the stem cells. It’s a kind of holy grail, really, for relapsed patients.

The next stage of the research, then, is to test these breakthroughs on cancer cells taken directly from patients (up to now they’ve been working with tumour cells grown in the lab). Thanks to funding from the British Cancer Campaign (BCC), Luke will stay on at Cardiff University as a postdoctoral researcher and, in collaboration with the Cardiff School of Pharmacy & Pharmaceutical Sciences and Llandough Hospital’s Breast Centre, will use cells taken directly from patient biopsies. “It’s about as close as you can get to treating the actual patients.”

If the treatment proves successful – Dr Clarkson reckons they’ll have an answer in about two years – they’ll move on to clinical trials. And to TRAIL, it’s already approved for clinical trials in other types of cancer, they won’t have to contend with the usual red tape.

Just as Luke is wrapping up his PhD, another postgrad in the lab is starting out on hers. Funding from Cancer Research Wales has enabled Olivia Hayward, a pharmacy postgraduate, to spend the next three years investigating c-FLIP, with the aim of designing a drug that will inhibit it. She joins fellow PhD student Rhiannon French – funded by the MRC and the Stan Griffiths Memorial Fund – who is looking at how c-FLIP works inside the cell.

“Olive says: ‘It’s highly novel research and very relevant and important, given that breast cancer affects around 50,000 women in the UK every year’.”

TACKLING NEGATIVE TUMOURS

Finding a method that kills off breast cancer stem cells is a major coup, but it isn’t the only groundbreaking research in this field taking place at the School of Biosciences. Another research group, headed up by Dr Matt Smalley of the European Cancer Stem Cell Research Institute, is investigating another potential breast cancer treatment. This group has been funded by the British Cancer Campaign to investigate whether high activity of a cell protein called Lyn kinase creates the conditions for triple negative tumours, the most aggressive form of breast cancer.

“We’re trying to understand in more detail what Lyn kinase does in normal cells and breast cancer cells,” explains Dr Smalley. “We know that it has a druggable target – that we could design molecules that would inhibit its activity – so if our hypothesis is correct, that would be a real possibility. It would be a big step forward because targeted treatment isn’t currently available for triple negative tumours.”

That, though, is a little way down the line and the next three years will be a crucial time for the lab. This project will start in January 2013, and Dr Smalley is hoping to have two postgrads working in his lab over the next year. “We’re very new so we don’t have any postgraduate research students yet, but I think it’s really important to have them in the lab. They bring a great sense of fun and enthusiasm – and they tend to ask difficult questions.”

As both research groups are moving towards therapies for breast cancers that are currently very difficult to treat effectively, many others could benefit too.

In a discovery that could help couples going through IVF treatment – 45,264 couples a year in the UK, according to figures from the Human Fertilisation and Embryology Authority – Cardiff researchers have found that injecting a missing protein into eggs can kick-start embryo development.

This research, carried out in a model of human infertility, could dramatically increase the chances of a successful pregnancy where there is a problem with the sperm – around half of involuntarily childless couples who seek IVF.

“Two of the researchers behind this study – professors Tony Lai and Karl Swann – are the scientists who first discovered that sperm transfers a vital protein to the egg on fertilisation, which sets off all the biological processes necessary for the development of an embryo. That protein is PLCz (PLCζ) and initiates a process called egg activation – if it’s missing or defective, the sperm won’t activate the egg.

Their latest achievement, along with fellow researcher Dr Michal Nemikos, is to prepare active- i.e. viable – human PLCz protein and obtain positive results that had previously only been observed in the laboratory.

“We’ve shown that when an unfertilised egg is injected with human PLCz, it responds exactly as it should do at fertilisation,” explains Professor Lai. “We’re working to design a kit to indicate the likelihood of a man’s fertility, by determining the presence of PLCz in sperm. If missing, the active protein could be added during IVF.”

Alongside this, the team will continue with other PLCz-related research. “We want to establish how many cases of infertility are related to a lack of PLCz and test its safety in activating eggs for later development,” says Professor Swann.

Both professors are keen to point out that postgraduate students have played an important role in this research. Not least of these is Michal Nemikos who, although now qualified, was the first PhD student to study PLCζ following its discovery and has remained involved with the team – in fact he was the lead author of the recent study, published by Fertility and Sterility.
Welcome to the Cardiff Network. I hope that you’ve all had a good year and that if you were in the UK, you enjoyed a summer full of celebrations — with both the Queens’ Jubilee and the amazing London 2012 Olympics. For those of you overseas, I hope that seeing both of these events reminded you of happy times spent in the UK, and in Cardiff in particular.

Congratulations to all of our alumni who helped make the summer of 2012 such a success.

You will have noticed this year that we have greatly improved our website and our electronic communications with you. The regular CardiffConnect email newsletter goes to all of you who have an email address for. If you are currently missing out, please contact us at alumni@cardiff.ac.uk and we’ll add you to the mailing list.

Increasingly, we are also sending School specific newsletters out, so again, don’t miss out on your copy. Record numbers of you have joined our LinkedIn Group this year — thank you for that — and I hope that you find it a useful network for your business.

Talking of which, if you would be interested in utilising the fantastic student talent that we have here in Cardiff to help in your workplace, we have launched the Alumni Mentoring and Placement Scheme. Details can be found on our website if you would like to register your interest — visit www.cardiff.ac.uk/alumni/amp. You can also follow us on Twitter @CardiffAlumni or join us on Facebook. If you are on Twitter yourself, let us know and we’ll follow you — and re-Tweet any success you have along the way to all our followers.

Wherever you are, stay in touch — and do keep us up-to-date with your news — you might even find yourself in a future issue of the Cardiff University Magazine!
network

Ed Green
BSc, MArch, MPhil and PhD

The recession has forced many families to rethink their house moving plans. One solution has been to develop underused parts of the house, such as the attic, garage or basement, to increase the amount of living space available.

But an award-winning design by Cardiff School of Architecture alumnus Ed Green has taken this idea one step further. Using the storage containers that are usually seen balanced on the top of huge ocean-going ships, Ed has come up with S,M,L (Stacking, Modular, Lifetime), a sustainable and self-energising solution to the housing needs of the future.

“These containers are only £2,000 each,” says Ed. “They can be converted to habitable connecting pods away from the final building site. This means that tradesmen get to work in far more comfortable conditions as they can avoid the vagaries of the weather.”

In September, S,M,L beat 250 other entries to win The Sunday Times British Homes Award. The design will now be realised for the 2013 Ideal Home Exhibition, held at Earl’s Court in London and visited annually by over 250,000 proud homeowners. The completed house will then be moved to the BRE Innovation Park near Watford, to be seen by building consultants, housing experts and representatives from housing associations up and down the land.

“Four housing associations have already approached us about these houses, and hopefully this will increase after the show house is developed for the exhibitions. After the containers are adapted off site, a zero-carbon S,M,L house, big enough for a family of five, can be interconnected, weatherproofed and inhabited in just a month, and all for around £100,000.”

Zena Brenchley
MOrth and MScD, 1990-93

John O’Groats to Land’s End… a phrase that’s burned into the psyche of many a fitness fanatic or hardcore fundraiser. However, Zena Brenchley, has taken this well-worn route one step, well, one pedal of the wheels, further.

After cycling from one end of the country to the other in 2010, Zena mentioned to her husband Ian that she was still feeling fairly fresh and could probably have cycled further. Jokingly, Ian suggested that next time she could turn around and do the whole thing again. This is of course what Zena then decided to do, and in August 2012 completed the gruelling 1,779 mile round trip in just 15 days, raising £3,800 for children’s charities as she went.

Zena and Ian, who are partners at Torrington Dental Practice in north Devon, have helped raise over £50,000 for children’s charities since they opened 15 years ago, much inspired by their son Keir, who has Down’s syndrome.

Zena says she really enjoyed the 15-day slog, although it’s Ian who tells me what she really went through: “Zena’s legs were fine on the second leg, but unfortunately she lost all the feeling in her left hand, not great when you’ve got to change gears with both hands – she had to lean over and change gears with her right hand for much of the return leg.”

Michael von Bertele
Cardiff School of Medicine, 1974-79

Director General of the Army Medical Services Michael von Bertele’s retirement from the forces was marked with a portrait at the Royal Military Academy Sandhurst in Surrey.

The portrait, by Cardiff-based artist David Griffiths, was unveiled in October and marks the Director General’s official retirement from the Royal Army Medical Corps. It will hang alongside portraits of 40 previous director generals at the former Army Staff College at Sandhurst.

After leaving Cardiff with a degree in Medicine in 1979, Michael served in the Falklands, the Balkans and the Gulf, and led exercises and training as far afield as Brunei and Nepal.

As the first medical officer into Port Stanley after the Argentinean invasion of the Falklands, he describes his experiences as “the moment that convinced me that my job was worthwhile.” He spent two weeks on the surgical team in Ajax Bay, treating British and Argentinean casualties.

In 1993 he received an OBE for his work with the UN during the war in Croatia, and in 2012 was made a Companion of the Bath (CB) in the Queen’s Birthday Honours.

Of the painting, he said: “The portrait is outstanding, almost unsettling: it is like looking in a mirror. But I feel privileged to have been honoured in this way by my corps.”

Ed Green’s S,M,L design means that adding an extra room to your home has never been easier!
“After studying Welsh for my degree at Cardiff I took up an MA with a creative writing element. This included writing a short novel of 12,000 to 15,000 words,” said Anni. “The theme for last year’s prose section of the Eisteddfod was Egin [Shoots], which, after a bit of rewriting, fitted in with what I’d written for my master’s.”

Anni’s crown-winning prose (an excerpt of which can be read on the right), is set in a world where some people are incapable of imagining, while others are imagination thieves. “I’d not written something of this length before, it’s pretty complicated getting the plot together, so much so that I’d sometimes be surrounded by pieces of paper, trying to work the plot out!”

The Urdd Eisteddfod is one of Europe’s largest youth festivals, attracting over 100,000 visitors and 15,000 competitors annually. Last year’s event was held in Snowdonia, close to where Anni grew up at Sarn Mellteyrn. “I’ve always been involved in the Eisteddfod – reciting or singing – so having the festival in my home area made it pretty special for me, and as I’ll soon be too old to enter a youth festival I’m really proud to have won the crown for prose.”

Anni was offered a job at S4C when she was doing her master’s, and now presents Stwnsh, which is on every weekday evening. “It’s great to work on children’s television, it’s very creative and gives us a chance to be silly!”

Although he suffers from severe dyslexia and didn’t enjoy school, a childhood spent gazing in awe at the animal exhibits at Cardiff Museum set Rhys Jones in good stead for his eventual career. “I was told at school that I’d be stacking shelves at Tesco,” said Rhys. “I got into the pet trade and worked as a bouncer, but then decided I wanted to go into academia.”

Although he left school with no qualifications, Rhys approached Cardiff University and was awarded a grant to fund a foundation year in physics, chemistry and maths. Next came a degree in zoology and genetics, a Master of Philosophy in medical molecular entomology and a PhD in molecular evolution, where Rhys specialised in herpetology and parasitology. “I just fell in love with them. It’s easy to make them out to be evil, nasty creatures but if you look at the bigger picture, they’re incredible survivors,” he says.
I thought I was entering heaven when I first went to Cardiff in 1964," says Graham March. "The clean white buildings, red roads, open spaces, it was like being in Washington DC! I really couldn’t believe how different it was from Birmingham, which was still a very industrial city and very quiet after dark."

The young Graham March was similarly impressed with the new School of Pharmacy building and the facilities the University offered, although the Dean quickly reminded the students not to rest on their laurels.

"There were 35 in our class, and he said they had space for 25 next year as there were only that many microbiological cabinets to go round. I was fairly self-sufficient for my age so I knew I had to work hard to survive. I made up my mind in that first week that I’d stay in the top five throughout the course!"

Graham stayed on after his degree to take a PhD: "Studying for my PhD at Cardiff gave me the ability to think independently and logically which, looking back, was the passport to credibility and responsibility."

Moving with the times

Graham's long and varied career as a registered pharmacist has taken him through the private and public sectors, and ultimately led to him founding Special Products Ltd., a company that develops and distributes unlicensed medicines prescribed for conditions found in small populations of children.

But it was a chance meeting with a consultant while Graham was controlling medicines prescribed for conditions found in working with Great Ormond Street Hospital in London that changed the course of Graham's professional life for ever.

"I was sitting in the refectory having a cup of coffee when a consultant came and sat down with me, which was pretty unusual as they generally kept their own company. He said they were having trouble getting children to take the laboratory grade chemicals necessary for them to survive inherited metabolic diseases, but had heard that there’d been some success in the USA by making the chemicals more palatable. I'd had a look at the chemical he was talking about I knew instantly what the problem was. It was bitter and smelted awful! Babies and young children would not swallow it at all."

Graham developed a palatable liquid from the chemical that the children found easier to take. He also formulated an injection for children in a critical condition who were vomiting so severely that they were unable to take medicines orally until the condition was under control. "Babies in dire need of medical help started surviving their first few days as they were able to take what essentially looked like normal medicines, rather than hospital-developed powders that they couldn’t stand. Children with certain life-threatening illnesses were doing so well they were then able to go home. They even lived long enough to be able to take the tablets that I developed for them."

"It was then that I realised I could set up a company that developed these sorts of drugs – medicines for people with niche diseases."

For instance there might only be five people in the country that needed them. The original brief I worked out with Great Ormond Street was that I’d continue to develop whatever they needed for their patients, no matter how few people actually needed the medicine."

Since the company was founded in 1997, Graham and colleagues have gone on to develop 55 'specials' for a targeted range of therapeutic areas. These mainly involve liquids for children with rare diseases and tablets for older children and adults. The company’s products are now used in children’s hospitals throughout the UK and also overseas.

"We now employ 40 people in Surrey, and have just opened a subsidiary company in Dubai to accommodate the growing market for ‘specials’ in the Middle East. We've tried to grow beyond UK borders but I've learned that you need to build a critical mass of sales by distributing products from the UK rather than spending lots of money setting up a speculative company overseas. Our Dubai sales office reached that level earlier this year and is now thriving as an independent company."

"Studying for my PhD at Cardiff gave me the ability to think independently and logically which, looking back, was the passport to credibility and responsibility."
Watch us on YouTube

You’ll find lots of the people and schools featured in this issue of the Cardiff University Magazine on the University’s YouTube page.

Whether it’s finding out more about the President’s Scholarships, watching the incredible images that were projected onto the main university building, or seeing how the intrepid tuk-tuk travellers planned their trip of a lifetime, you’ll find a video to satisfy your curiosity!

www.youtube.com/cardiffuni