Subtext 2

Spring 2007

A touch of glass
Blowing new life into an ancient art

Better living through chemistry
Two professors discuss molecules, music and breadmaking

Anatomising Alice
Archaeology? Arthritis? Paging Dr Roberts

Fighting talk
When politics and academia meet over the microphone

University of BRISTOL

Subtext

Welcome

What *is* this place? Besides being a leading centre for higher education and research, I mean. There are over 5,000 members of staff at the University of Bristol. Who are they? Why – and how – do they do what they do? How did they get here?

Subtext tries to come up with a few answers and, in the process, to introduce the University to itself. Our online news pages at bristol.ac.uk/news are the place to go for the latest about research, achievements and so on; *Subtext* takes a more leisurely approach. We want it to be a good read, but also to be as thoughtful and enquiring as a university magazine should be.

Our thanks to those of you who sent in comments after the first issue. One reader remarked that it was 'refreshing and exciting to see real people at the heart of the University's new publication'. This issue features another selection of real people, of whom we ask searching questions. How did an academic deal with an argumentative MP on live TV (p14)? How does a quietly spoken administrator in Senate House see the world (p6)? And what was day-to-day life like for a couple of undergraduates who went to Cuba (p16)?

For a few answers, read on.

Nick Riddle
n.riddle@bristol.ac.uk

Put the Vice-Chancellor on the spot

The next issue of *Subtext* will include a page or two about Professor Eric Thomas. Email your questions to news-team@bristol.ac.uk and we'll put the best ones to him. There are no rules other than **keep it short, don't be too rude** and **make it interesting**. Thus 'Are you prepared to review Car Parking Regulation 3c?' probably wouldn't get through, but 'Do you ever miss delivering babies?' might.

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Communications and Marketing Director
Barry Taylor

Assistant Director/ Head of the Public Relations Office
Jill Cartwright

***Subtext* editors**
Hilary Brown, Nick Riddle

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Public Relations Office,
Senate House, Tyndall Avenue,
Bristol BS8 1TH
Tel: +44 (0)117 928 8895
Email: news-team@bristol.ac.uk

Subtext No 2, February 2007

LORENA BARBA

Dr Lorena Barba, lecturer in the Department of Mathematics, was born in Valparaíso, Chile. Her path to Bristol took her via Pasadena, and along the way she experienced early bereavement, discovered a skill for inventing cocktails, and got an academic wake-up call in California.

PAUL GROOM

I went through my schooling and my undergraduate degree under the dictatorship of Augusto Pinochet. Fortunately, my family did not suffer during the times of oppression. My grandfather retired from the army one year before Pinochet took power. His five daughters may have had socialist opinions, but knew how to stay out of trouble.

There were always shortages in those days. My mother sometimes had to queue for hours for commonplace items such as oil, or flour, or sometimes toilet paper. Other products were in bizarre abundance: powdered milk, for example. There was a rumour that schools had so much of the stuff that students used it to mark the football field. I also remember the curfews; when I was a teenager, the only parties you could go to were ones that lasted all night. We called them 'fiesta toque-a-toque', or curfew-to-curfew parties.

It wasn't until I went to university that I realised the level of repression. Several outspoken students disappeared, presumably to a detention camp. Protests occurred often, and the police would storm the campus in riot gear. One of the physics teachers used to pass out salt to put under our eyes (it's supposed to help with the tear gas). I'll never forget the smell and taste of tear gas.

When I was 13, my father was sent to the United States, to serve in the Naval Attaché. We spent two years in Maryland, and the most important result of that experience for me was learning English. Being bilingual has changed my life.

My father died in a plane crash when I was 17. He was a flying instructor in small, single-engine airplanes. He was teaching me to fly; I was always the last one on his list of students for the day, so I would wait for him at the airport. This time I waited and waited until it got dark. The other pilots didn't let me go on the search flights. A friend of my father, who was always very composed and formal, came to speak to me with tears running down his face. He drove me home, and we faced my mother. Here was this 50-year-old man, without a word coming out of him. I had to tell my mother myself that Dad was dead.

When I was young, everything came easy to me; not so now! Research is really hard work, but still fun. I enrolled at Universidad Tecnica Federico Santa Maria in Valparaíso with the year's second-highest admission scores. The student with the highest got a full scholarship, but there was nothing for the second highest. I was so upset about this, especially because I knew that my mother couldn't afford the fees.

During my university years in Chile, I took any job I could find to make a little money: teaching assistant, private teacher, and various summer jobs as a waitress and a bartender. I invented several cocktails that were quite popular one summer: one was called Pink Floyd and it had rum, cream and a red syrupy thing called 'granadina' on crushed ice.

When I turned 21, I left home. This is certainly not common in Chile (at least back then), especially for a girl. It was quite risky because of the financial concerns and being still at university. I do feel proud that I was successful at being economically independent at a young age, but boy was it hard!

After I graduated in mechanical engineering, a couple of classmates and I opened a small consultancy business. At first we did a lot of heating, ventilation and air-conditioning projects for industry. Later, we did more challenging projects in process engineering, and also machine design. But we worked long hours, and after running costs, salaries, investments in marketing and growth, and taxes, there wasn't much left! For seven years we struggled. In the end we provided jobs for seven people, and we had a consortium with other firms. It was exciting and challenging. But it wasn't what I wanted.

All this time, I continued studying. I took part-time postgraduate courses in renewable energies, and I started thinking about doing doctoral studies abroad. It took two years to prepare for this move: researching universities, taking the required tests (English and other topics), and saving money. Days before taking a plane to Los Angeles, I was paying off the last of my student debt.

I was ecstatic to get a place to do a PhD at the California Institute of Technology (Caltech) in Pasadena. I thought that, once I got there, the sky was the limit. I hope I never forget the thrill that I felt during the shuttle ride from Los Angeles to Pasadena: watching the palm trees poking everywhere above the rooftop level, and feeling the speed on the freeway and the warmth in the air. I felt happy and proud.

Then came the cold shower. My ego was shattered after my first exam, only two months after arriving. I got 21 per cent! I called my mom and cried on the phone like a baby. It was the first time in my life that I felt studying was not easy. I was used to being always at the top; but at Caltech, everyone was the very best, and most were better than me. It was crushing. I still can't believe the amount of hours that I put in to catch up! I had a support network of Latin American students in my class, and I became very good friends with a girl from Argentina. We worked together almost every night for the first year, and in the end I passed all my courses.

The reason I came to the UK was – simply – love. My partner was offered a job here in Bristol, and it was a good offer. I could have stayed behind and made it easier for myself, but I would always have wondered if we could have been happy together. That's just not the way I operate. I take risks; I've done it many times in my life, and I've paid the price, but I've also reaped rewards. He and I are still together, and it's been totally worth all the troubles that I've put myself through.

England has offered me opportunities, and I'm grateful for them. I can't say I've adapted completely: the cold weather and the cultural differences are still difficult. I grew up in the main beach resort in Chile! I also have a very loud and obnoxious personality, which is normal for an opinionated Latin American woman, but which totally clashes with the British manner. This is not a plus, if you know what I mean. Especially in a male-dominated science department.

And while we're on that subject, let me just say that there is still a long way to go for women to be equals in UK science! Not that it's any better in Latin America, but it certainly is better in the US. Here, it's very subtle: women are encouraged on the surface, but in reality, your male colleagues would rather ignore you.

Bristol in pieces

DAVE PRATT

TWENTY QUESTIONS

Ian Dunnachie is Senior Assistant Registrar in the Academic Registry. He also has a private hypnotherapy practice (www.iandunnachie.com) and is an experienced Reiki Master.

What is your favourite meal? Hot yak butter tea and a stale chappati in a camp somewhere in the Himalaya.

If you were offered one superpower, what would you choose? The ability to communicate with all people in their first language.

Cat or dog? Fond of all animals, but only keep cats at the moment – low maintenance, affectionate and utterly ruthless.

Which historical figure would you invite to dinner? Temujin (Genghis Khan), with interpreter, please (unless I've been granted my superpower).

What do you sing in the shower? The blues.

What is your greatest character flaw? I'll confess to impatience, and keep quiet about the others.

Native Americans believe we all have a Spirit Animal. What would yours be? Jaguar, I suspect.

Favourite spot in the world? Lake Mansarovar, western Tibet – magical.

Least favourite spot? The economy cabin of an aircraft, sitting behind some inconsiderate person who's put their chair into the recline position.

One book, one piece of music, one film. *A Child's Garden of Verses* by Robert Louis Stevenson; *Mr Tambourine Man* by Bob Dylan; and if I have to choose just one film, it must be *Casablanca.*

Who would you banish to a desert island? How big is the island? Probably simpler just to banish myself. A desert island has its attractions.

What does the world need more of? Robust compassion and resonator guitars.

What is the University of Bristol for? Providing my hypnotherapy practice with a steady stream of clients.

What has been your biggest life-changing experience (so far)? Walking the pilgrimage route around Mount Kailash in Tibet (and getting there and back).

Something you wish you'd known about life when you were 18? How quickly it passes after you are 18. And the dangers of inherited behaviours.

'My philosophy is this…' Breathe in, breathe out. Put one foot in front of the other (if you can). Smile, always smile, and be as kind as you are able. Everything else follows.

When and where were you happiest? Early childhood in Glasgow, playing with my late sister. A brief interlude of innocence.

Where will you be ten years from now? Running an inspiring hypnotherapy practice and retreat in South West Ireland – West Cork or Kerry – with the occasional night off to play banjo or guitar in the local pub.

How would you sum yourself up in one line? Another fine personification of the Caledonian antisyzygy*.

Is there a question you'd like to be asked? The Chieftains wonder whether you'd like to join them on a track for their new album?

*'The Caledonian antisyzygy': A personality rife with contradictions – a defining trait of the Scottish character, according to writers such as G Gregory Smith and Hugh MacDiarmid. Smith wrote in 1919: 'Oxymoron was ever the bravest figure, and we must not forget that disorderly order is order after all'.

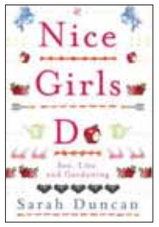
THE PLUG

***Nice Girls Do* by Sarah Duncan**

Anna is a researcher into historic gardens; Oliver is heir to a splendid 18th-century house and garden. Anna delves into the garden's past, and begins to realise that her own future is bound up with the mysteries she encounters. *Nice Girls Do* is the second novel by Sarah Duncan, a lifelong learning tutor in the English Department. Her first novel, *Adultery for Beginners*, was shortlisted for the Joan Hessayon New Writer Award.

***Sport in the USSR: Physical Culture–Visual Culture* by Mike O'Mahony**

Sport pervaded the cultural life of the Soviet Union. Dr Mike O'Mahony, Lecturer in the Department of History of Art, looks at the development of state-sponsored *fizkultura* (a neologism derived from the Russian word for physical culture) and its role in forming the Soviet New Person. The book examines presentations of Soviet sportsmen and women in popular culture, from literature and film to crockery and paintings, and explains the eventual collapse of the Soviet sports machine.



THINGS YOU NEVER NOTICED
2. THE PHYSICS CARVINGS

These carvings have adorned the spandrels over the main entrance of the HH Wills Physics Laboratory since Sir Ernest Rutherford opened the building in 1927. The idea is believed to have originated with Arthur Tyndall, Professor of Physics at Bristol from 1919 to 1948. The carvings represent two discoveries in experimental physics. The image on the left shows the dispersion of sunlight by a prism (as discovered by Isaac Newton in 1666); on the right are the tracks of alpha particles from radium, commemorating the work of the physicist CTR Wilson, who in 1911 became the first person to see the tracks of individual alpha- and beta-particles and electrons.

JAMIE CARSTAIRS

TIM GANDER

A DIFFERENT NOTE

Sarah Rigden is like any other student – she just happens to have four teenage kids and play half a dozen brass instruments. She talks to Hilary Brown about the trials, tribulations and triumphs of being a mature student.

Sarah Rigden has snatched an hour for a cup of tea and a chat between taking her youngest daughter to the orthodontist and racing off to finish an essay. Then she's got to get to band practice.

Somehow she finds the time to play the flugelhorn in three brass bands. She took up brass playing when she was 11, at the same time as her father, who was 45. He accumulated a collection of instruments that he left her when he died – a trombone, a tuba, a flugelhorn, a cornet, a soprano cornet, several harmonicas and an ocarina (an ancient flute-like wind instrument). 'He developed Bell's Palsy and kept trying different instruments to accommodate his paralysis. I've played all of them, but the flugelhorn is my favourite. There's only one of them in a brass band, and I like to stand out from the crowd.'

Forty-one-year-old Rigden has never done things by halves. She even failed her O-levels spectacularly. 'I took nine and failed eight of them,' she remembers without a hint of embarrassment. And why should she be embarrassed? She's now in her final year of a Social Policy degree and loving it.

'I hated school,' she confesses, 'and work wasn't much better. I did five years as a legal secretary but it bored me to tears.' She became a full-time mum – there wasn't much choice as her husband worked away a lot. By the time her third child started senior school, she was beginning to think there might be something else out there – but what? 'I had no idea what the options were, so a friend whisked me off to my local college, Soundwell, and sat me down for an interview.'

She enrolled on a Return to Study course and studied Maths and English GCSE. 'I did my English GCSE at the same time as my eldest daughter. We were on holiday in France and the pair of us would have to stay behind to revise while everyone else went down to the beach. I was astonished when I got a C in Maths, and even more astonished when I got an A in English.'

'I can be up studying till three o'clock in the morning as that's the only time the house is silent.'

She went on to do an Access course at City of Bristol College and suddenly the possibility of going to university was real. 'I applied to Bath Spa, the University of the West of England [UWE] and Bristol but I never believed I'd get into Bristol. I was born here and we'd always been in awe of "the building at the top of Park Street". My dad was a car mechanic and my mum a care assistant and no one in the family had been to university.'

Now she's here, she couldn't be more comfortable. 'When I imagined being at university, I did think it would be strange to be surrounded by 18-year-olds, but it's not an issue. I'm a student ambassador and go out to schools to talk to pupils about applying to university, and those kids think it's a bit odd that I'm the same age as their mums. My eldest son is at UWE and his friends always assume I'm a postgrad. I'm glad he went to UWE and not Bristol, as I would draw the line at having to meet him for lunch.'

It can be tricky juggling a degree course with the demands of four teenagers all living at home: 'I can be up studying till three o'clock in the morning, as that's the only time the house is silent.' But it has benefits. 'I think my studying has encouraged the kids. My younger son already knows he wants to be a teacher and which subjects he wants to study.'

Are there any advantages to being a mature student? 'I don't know that older necessarily means wiser. But you have more life experiences to draw on. My brother Andy died of alcoholism when he was 38 and this inspired my dissertation, which is about people who have been in residential rehab for drug or alcohol abuse and how their housing situation subsequently affects their recovery and abstinence. When Andy came out of rehab he went into a flat in the centre of Gloucester near all the pubs, which was the worst place for him to be. He had no professional support and although my mum tried to help he wouldn't talk to her, and it was a downward spiral of drinking and rehab until he died.'

Her ability to empathise with people has helped with case study interviews for her dissertation. A caseworker at one of the hostels in her comparative study said she would make a good support worker. 'That's all very well, but you don't need a degree for that,' she says. 'I'm still not sure what I'll do but now that I've gone to the trouble of doing a degree, I'd like to use it.' Suggestions on a postcard, please.

COLIN BELL

ANATOMISING ALICE

COURTESY BBC

Could Alice Roberts, Senior Teaching Fellow in the Department of Anatomy, be the ultimate all-rounder? Barry Taylor talks to her about the many strands to her life.

COURTESY BBC

Dr Alice Roberts is a whirlwind of a person who packs an unfeasible amount into life. Try this for size: she's a medical doctor and bio-anthropologist with a strong interest in evolution and embryology; she conducts archaeological and forensic research on human skeletal remains; she's only a year away from completing a PhD on arthritis; she teaches anatomy to everyone from first-year medics to Oxford postgraduates and senior consultants; she's involved in projects to enthuse state-school children about science; she's a successful television presenter and author; she's an artist, a surfer, a climber. And she's only 33 years old.

At the time of this interview, Roberts is still filming her anatomy and health series for BBC Two, *Don't Die Young*, which is to be screened early in 2007. In the programmes and the book of the same name, she explains how our vital organs work and how we can improve our chances of avoiding disorders. As in *Time Team*, *Extreme Archaeology* and both series of *Coast*, her presentational style is calm and authoritative. There is real substance, too – producers know that if they want 'science lite', Roberts is the wrong person to call.

Not that everyone is convinced. She acknowledges that for some academics, serious science and popular television just don't mix. But like fellow *Coast* presenter Dr Mark Horton and *Rough Science* front-person Professor Kathy Sykes, who also work at Bristol University, Roberts is driven by a passion to share knowledge with the public as well as with students and other scientists.

'In *Don't Die Young*, I wanted to get over the wonder of anatomy,' she says. 'It's difficult because I've got quite a high gore threshold, whereas most people don't. We'll see how much dissection and surgical detail make it into the programmes – especially since they go out before the nine o'clock watershed.'

If television is the glamorous end of Roberts' work, forensic science can be the opposite. Not long ago she found herself donning protective gear and a gas mask to sort through tons of pig carcasses in an underground vat on a local farm. The police had had a tip-off – false, as it turned out – that a human body had been secreted there.

'In *Don't Die Young*, I wanted to get over the wonder of anatomy'

Roberts, who was born and raised in Bristol, arrived at the University in 1998 as a 25-year-old medical demonstrator, having qualified in medicine at Cardiff, gained another degree in anatomy and worked as a hospital doctor. 'It looked like I was going down the surgical path – teaching anatomy is very good training for that – but then my boss moved on and I got the lectureship,' she explains. She still sounds excited.

She has always been a strong advocate of the use of cadavers in the study of anatomy. 'There's a deep, primal instinct against taking a sharp knife and cutting into a human body,' she says. 'In fact, dissection was banned between Roman times and the Renaissance. But there's still no substitute for it. Manikins are very useful tools and medical imaging has come on in leaps and bounds, but they should be used alongside traditional cadaveric anatomy because it really deepens understanding.'

It is an approach that stands Bristol in good stead. Roberts says that while some other universities have shrunk their anatomy departments and closed dissection rooms, anatomy is thriving here. The subject will get a further boost later this year with the opening of a new Clinical Anatomy Suite combining cadaveric anatomy with the latest technology. The suite will form part of the groundbreaking Applied and Integrated Medical Sciences (AIMS) Centre for Excellence in Teaching and Learning.

But while Roberts loves teaching, research has never had to play second fiddle. Even when she was a medical demonstrator, she would 'nip down to the basement of the Bristol Royal Infirmary and open dusty boxes of bones' to pursue her investigations into various diseases.

So where will she be in ten years' time? 'I don't make plans like that,' she replies. It does seem, though, that Bristol has a good chance of holding on to her: she's clearly stimulated by her students and colleagues, including the archaeologists for whom she does some teaching and the earth scientists and biologists with whom she likes to explore aspects of evolution.

And that hints at the subject matter of a TV series she may make one day. 'I'd love to do something on comparative anatomy,' she says. 'If you go back early enough in embryology you can see where things have been tweaked to turn you into a land animal. Did you know that a human embryo at five weeks has things on the side of its neck that look like gills?' The fact that at Bristol, medical teaching takes place in the same building as veterinary teaching makes it that much easier for her to pursue such questions.

In case you were wondering, Roberts does manage to have a private life as well. She and her partner, Dave, a field archaeologist, met when they were both students at Cardiff University. They bonded over several memorable summers spent excavating an important Viking site on Anglesey.

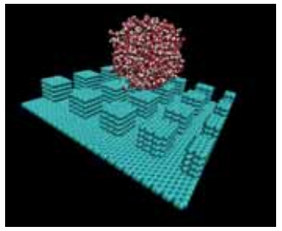
Recently, they moved out of their cramped Bristol flat with its tiny patio garden to somewhere more spacious just outside the city. There, Roberts has discovered yet another passion: growing vegetables. It sounds idyllic, although the wild deer that live nearby have developed a taste for the produce. Fortunately, the couple's border terrier – 'Bob; he's a bit feral' – is there to repel invaders.

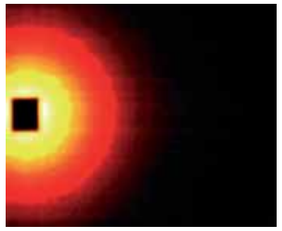
Opposite: Top and middle: on the set of *Don't Die Young*; bottom: on location for *Coast*

BETTER LIVING THROUGH CHEMISTRY

Professor Terence Cosgrove and Professor Julian Eastoe, members of the Colloid Research Group in the School of Chemistry, have known each other for over 15 years. Nick Riddle sits in on their wide-ranging discussion which begins with memories of their first close chemistry encounters.

DAVE PRATT





Above: Professor Julian Eastoe (left) and Professor Terence Cosgrove in Bristol ChemLabS, a new HEFCE-funded Centre for Excellence in Teaching and Learning
Left: Professors Eastoe and Cosgrove share a passion for research in colloid and interface science, from nanodrops on surfaces (far left) and the physics of neutron scattering (centre) to surfactants and all things 'soapy' (right)

Chemical beginnings

TC: In second-year Chemistry, at school, we were making some different materials, and they were all brightly coloured. I loved the colours, and I wanted to know how they were made. And then I realised I could make them myself.

JE: I got turned on by the coolest experiment in chemistry: making nylon. You take two totally different liquids and you make a solid. If you put these two liquids together, they tend to separate, but where they meet – at the interface – they react and form a disc of polymer. That's the nylon. If you poke down with some tweezers through the top liquid, and you start to pull that disc upwards, you start to expose new molecules, so you get more reaction. The more you pull it away, the more new molecules meet and react. It's called the Indian Rope Trick. I'll never forget seeing that; it'll probably flash before my eyes when I come to the end of this mortal coil.

TC: I used to do that as a demonstration in my lectures – it's quite impressive. But the ammonia it gives off… They had to evacuate the lecture theatre.

JE: I did a Physical Chemistry course in my final undergraduate year at the University of East Anglia, and there was this one experiment that amazed me. You take some simple gases, which existed at the dawn of the earth's history, and you seal them in a jar. When you pass a very high voltage through the gases, some solid material forms at the bottom. If you scrape that stuff out, you find that it's got the very building blocks of life in it: amino acids, these complex molecules that eventually generate living beings. And that's when I went, 'Oh – *that*'s what it's all about'.

Collaborating

JE: We collaborate on research, but also we work together on the day-to-day running of the Colloid Science Groups, and on the teaching of the undergraduate programme, which is the root of it all – you need to inspire the students. So having someone like Terry is a great asset because he walks into a room and talks about chemistry, and science, and you can't help but leave that room saying, 'I've been in the presence of someone who's essentially crazy'. About science, I mean. If you don't get turned on to chemistry by a man like Terry Cosgrove, then there's no hope for you – you should try some other subject.

TC: But Julian's exactly the same. We're very similar.

JE: We travel a lot in our business, which is one of the perks of being a university academic. And about once a year I bump into Terence somewhere; I'm in Ohio or something, in an airport, and there he is, and we both ask, 'What are you doing here??' You turned up in San Diego once. I'm walking down the street, and there you are.

What *is* chemistry, anyway?

TC: It's very difficult to capture chemistry in a soundbite. For me, it's making molecules. I collect my atoms and my toolkit and put them together to make a new molecule. That's what we're good at – joining atoms together in ways that can be useful. And those uses cover everything from smoke detectors, shampoo and lubricants to drug delivery and new kinds of fabric.

JE: It's the same for me. We take the earth's resources and fashion them into new, exciting and potentially useful material.

TC: But the beauty of the subject is that everyone has their own definition. There are university chemists who probably haven't made anything since they were undergraduates. Not every chemist sits in a white coat with safety glasses and making smells. But if you want to make a new semiconductor, for instance, you need a chemist, because it involves putting atoms together in a complicated way.

JE: If you want to understand about global warming, you need a chemist.

TC: And if anyone's going to solve the global warming problem, it's going to be chemists.

JE: Although chemists get blamed for causing the problem…

TC: But what you're really blaming is society's need for more energy, regardless of the cost. All the chemist is doing is answering a need.

JE: The main questions are: Can you make something, and how quickly can you do it? It's no good if you discover a cure for cancer but it would take you a billion years to make it. A chemist might find a route that could generate this cancer-curing material, but then you'd need another bit of chemical insight to work out how to generate this wonderdrug quickly.

Why do it?

JE: I was walking the dog in the rain last night, and I was thinking about why you would want to become a research scientist in a university environment. And it's because the possibilities are totally endless. You're creating new forms that could have potential use – in other words, you're contributing to the growth of civilisation, in material terms.

TC: This morning I was doing a computer simulation with molecules. Tomorrow I might be in the lab mixing up something. You can be a cook one day, and you can be doing electronics the next day.

Saying something wrong

TC: With your students, you're looking forward to the day that they challenge you. Then you feel you've overcome something, an intellectual barrier, for them to realise that you're not always right.

JE: I'm a visiting professor in China, and that's a great challenge. In a deferential society, it's extremely difficult to get an open and honest discussion going. People don't want to say something wrong, so they'd rather say nothing. I've always tried to make it clear that I'm not frightened of being exposed for misunderstanding or ignorance. In fact I'd rather that happened, because that way I'm going to learn something. I've been going there for about five years, and this year I felt I'd cracked it. But that's only in one group. The minute I stepped outside of that group, into the wider culture, my heart sank and I realised how much more work there was to be done.

Getting it across

TC: I've got a thing about entropy. It's a very complicated thing, entropy. If you put a rubber band between your teeth and pull it quickly it heats up – and if you let it go quickly it cools. And that's to do with entropy and the second law of thermodynamics, one of the universal laws that help you an awful lot in chemistry. The word 'entropy' is everywhere these days – there's a stage play about it, and there's a pop group called Entropy. But it's a really dense concept and it's incredibly difficult to explain without getting a piece of paper out and covering it in scribbles.

JE: It's hard enough to explain what a molecule is. You mention the word 'molecule' and all of a sudden you've lost a lot of people.

In my experience, anyway. Maybe I've got the wrong way of saying molecule. I should try saying merrrla-cule. *(Laughter)*

You know how a sandy beach is made up of individual grains? Well, all materials are made up of individual molecules. It's just that a molecule is about a million times smaller than a sand grain.

I see public engagement as a challenge – I think we've got to get better at it. And we're definitely better than we used to be. About 12 years ago, we started giving public lectures on chemistry. The first year was hopeless; we tried to explain about molecules and so on – and we got nowhere. The next year we changed our approach; we got undergraduates to come up with a liquid formulation for making bubbles, using washing-up liquid, distilled water and glycerine. You could take away a recipe card and make this stuff at home. That worked a lot better. If anybody asked 'Why does that work?', that was our cue to say 'How much do you want to know?' Everyone's seen bubbles, so we take it from there. In some of these conversations we got down to the molecular level. But if you come in at any other level than the everyday, you have a difficult job getting anything across.

TC: You can start with simple questions: How do you get drunk on beer, which is 95 per cent water? Or why can a few picograms of polonium kill you? There are so many interesting questions in chemistry.

JE: It took us years to get to a point where we realised what was needed. That was in the early days of public engagement at Bristol. And now it's so much better – we've got a Professor of Public Engagement in Science, Kathy Sykes, for example.

TC: You also need to get things across when you're trying to explain a project to a grant-making body or a sponsor. And they say, 'Okay, say you've got a million dollars; how are you going to spend it?' And you've got to be able to distil all this stuff. This guy's got a million-dollar cheque book there and his pen is poised, and he says, 'Just explain to me how this thing of yours works…'

The chemical life

JE: As a scientist, you're never really off duty. It doesn't mean to say you can't have normal human relationships. My wife has no scientific background whatsoever.

TC: Chemistry is your life – it becomes your way of looking at the world. Like looking at nanoparticles in dispersion: if two or three particles come together, they might love each other and combine to form a bigger object, or hate each other and fly apart. So it's these molecular forces that govern matter. But if you look at the universe, it's basically the same thing – a dispersion of planets in the cosmos…

JE: Be careful – the physicists might take issue!

TC: I like the fact that there are *lots* of aspects of chemical reaction that we still don't understand. It seems unscientific, but if you try the same reaction over and over, you'll always have some attempts that just don't work... nobody knows why.

JE: For example, I make bread by hand every Sunday. It's really therapeutic to work on the dough with your hands. I've done it for about 20 years, and even now maybe once a year it'll go wrong and you can't work out what happened. You keep the recipe the same, and sometimes it rises too fast and the whole thing becomes top-heavy and it kind of splurges out. It's impossible to cut as well.

TC: But you get that lovely smell. Most chemical smells – around here anyway – are not very pleasant. But if you're cooking food, it's completely different.

JE: I get quite attached to some of these chemical smells, though. I quite like diethyl ether, for some reason.

TC: I like toluene.

JE: Toluene's horrible! It's like rank petrol.

TC: Well, I did my PhD in toluene, so…

JE: So it has an association for you.

TC: Yes. Anxiety and pain. *(Laughter)*

CHEMISTRY – THE MUSICAL

LIBRARY OF CONGRESS

Left: Professor Eastoe emphasises the importance of algebra using a song by Johnny Cash (1932-2003) who, although not a chemist, was no stranger to barbiturates

Right: Alexander Borodin (1833-1887), a member of the group of Russian composers known as the Mighty Handful, was also a respected chemist noted for his work on aldehydes

Left: Sir Edward Elgar (1857-1934) invented a device for making hydrogen sulphide gas. He called his laboratory 'The Ark' (Photograph by permission of the Royal Society of Chemistry)

Music and chemistry might seem to make for an unstable compound, but as Professors Cosgrove and Eastoe point out, the two elements have been known to combine rather well.

TC: Did you know that several composers were also chemists? Borodin is the famous one. And Elgar had a chemistry lab in a shed behind his house.

JE: I sometimes use a Johnny Cash song to try to teach students the importance of mathematics. It's called 'Straight A's In Love', and he's singing about how his teacher says, 'Learn your algebra', but he only gets C's and D's. So even Johnny Cash knew the importance of algebra.

TC: There's a Flanders and Swann song about the second law of thermodynamics.

JE: Which you absolutely love, don't you? You played it during some lectures.

TC: They didn't really take it in. Then there's Tom Lehrer's 'The Elements', about the periodic table. Actually, that song put my career back years, because he sings them in the wrong order!

DAVE PRATT

POP GOES THE WEB TRAINER

Nick Riddle meets Jez Butler to discuss his 20-year career in indie pop and the rewards of being big in Japan. And Spain.

'I was really looking forward to getting this', says Jez Butler, taking a yellow folder down from a shelf in his office. On the cover, Bugs Bunny lounges against a giant Warner Brothers logo. 'I signed a publishing deal with Warner Chappell and they sent me the sheet music for my songs. It's like something out of *My First Recorder Book*.' He shakes his head. 'They must have fed the music into a computer and it came up with this.'

Luckily, Butler makes music for the love of it. He's also accustomed to the false promises of the entertainment industry, which is one reason why he hasn't given up his day job as Web Trainer at the Computer Centre (another is that he actually quite likes his work).

Butler was born in Grimsby to musical parents. 'Dad learned to play the piano during the war in POW camps in Germany,' he says. 'He was taught by Vic Hammett, a famous Wurlitzer organ player – if you go round charity shops you can still find his records.' His mother also played piano, so when he started learning, giving up wasn't an option. 'Actually, it was my Mum who suggested I learn the drums, and that became my main instrument.'

He was hooked on pop music at the tender age of seven. 'I saw Wizzard on *Top of The Pops* in 1973 when "See My Baby Jive" was No.1,' he remembers. When Butler arrived in Bristol as an undergraduate at the Polytechnic – now UWE – he formed his first proper band. 'We did a few local gigs and we were booked to play a festival with Hawkwind at Worcester Racecourse in 1987, but we got axed because they ran out of time.'

'We were booked to play with Hawkwind, but we got axed.'

Butler's move to the University of Bristol's Computer Centre coincided with his joining a local band, the Groove Farm, and for the next two years he spent all of his work holiday driving a van around the country. 'We had some indie chart success, and some fairly big gigs, supporting bands like The Wedding Present – it was a really amazing experience.' The Groove Farm's album, *Plug*, became a John Peel favourite. But life on the road was tiring him out. 'Driving to Brighton for a gig and getting back to Bristol at four in the morning, then getting up for work … I was completely shattered.'

Phase two of his pop career began when he left the Groove Farm to plough his own furrow. He put out a single in 1997 on see-through turquoise vinyl (the sleeve was designed by school chum Jez Conolly, who also works in Information Services at Bristol). And on the other side of the world, somebody took notice.

'We pressed 500 copies, of which 200 were imported to Japan by Cornelius (aka Keigo Oyamada, a highly successful musician and producer). The record had a cult status in Japan. The first I knew about it was when a Japanese A&R man emailed me and said, "You should work with Mike Alway at Cherry Red Records".'

Here we enter an eldritch world of svengali businessmen, light psychedelia and mysterious vocalists. Butler produced a string of albums for various labels, all by bands that, strictly speaking, didn't exist. Mike Alway would come up with a name – Tomorrow's World, Death by Chocolate, Mild Euphoria and so on – and Butler assembled a backing band in a makeshift studio in Bedminster. Singers would turn up to do the vocals, among them a former Downing Street secretary called Angie Faye-Tillett, Radio Four Wimbledon commentator-cum-chanteur Louis Philippe and Simon Turner (Britain's answer to David Cassidy in the early '70s).

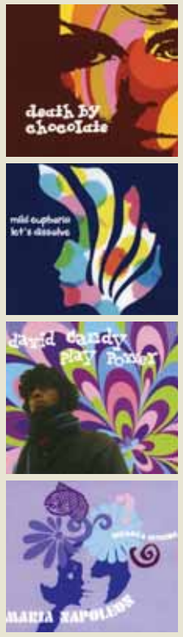
The time has come to pin Butler down: how does he describe his musical idiom? He takes a deep breath. 'It's a late-'60s light psychedelic jazzy pop, basically. There's a big French influence, especially Serge Gainsbourg.' Gainsbourg has never been especially popular in the UK. It follows, then, that Butler's output doesn't shift many units in the home market. But in mainland Europe, Japan and, increasingly, the US, it's a different story. 'The European labels we've worked with have both been Spanish,' says Butler, 'and in the USA, our label mates have been bands like Mogwai, Arab Strap and Black Box Recorder.'

In 2002, Butler again scored high on the hip-o-meter, when Iggy Pop nominated the second Death by Chocolate album for the prestigious Shortlist Awards (the US equivalent of the Mercury Prize). That came at the end of two productive years, during which Butler released nine albums ('I'm not sure how I packed it all in – weekends, rainy lunchtimes, things like that').

The University has benefited from Butler's musical skills: he recently supplied the music for an online video on the Bristol website. But mostly, these two strands of his career remain separate. His most recent album is *Continuous Electric Now*, and soon to be released is a Butler-produced album by Japanese pop star Hideki Kaji.

Aptly for someone whose day job is based in IT, the last few years have seen Butler's musical career progress thanks to digital technology. 'The Bedminster studio had to close, so now I'm completely PC-based,' he says. 'I've tried to recreate the sound we had, with a lot more success than I expected. Virtual studio technology has made huge advances.'

The same can't be said of Warner Chappell's transcription software. Butler closes the yellow Bugs Bunny folder with a bemused chuckle and re-shelves it, next to a batch of his recent albums and a copy of the single that started it all, shining quietly in all its translucent turquoise splendour. *You can hear some of Jez Butler's music at www.boum.co.uk.*



Left: Listen to the colours… psychedelia spills out of Butler's albums and onto the covers

FIGHTING TALK

For academics studying politics, being interviewed by the media can feel more like a wrestling match. But they can also find themselves advising public figures and getting an inside view of politics and broadcasting. Dr Sarah Childs, Senior Lecturer in the Department of Politics, talks to Nick Riddle about the pros and cons of media appearances and the value of a little preparation.

Let's say you're listening to the radio. BBC Radio Four, perhaps, or Radio Bristol. A discussion is under way: some meaty issue torn from the headlines. The presenter brings on an expert from the University of Somewhere who offers a few snippets of commentary. A second interviewee, probably a politician, takes issue with most of the points raised by the first. A restrained altercation follows. The presenter closes the interview and moves on to the next piece. The whole thing has taken three minutes, and as far as you're concerned, it's now eddying downstream, part of the flow of radio.

But if you're the academic in this scenario, you take away a different experience. Dr Sarah Childs has 'done' national radio several times – the most recent instances being Radio Four's *Today Programme* and *Woman's Hour* – as well as numerous interviews on local radio, and a handful of TV appearances. She confirms that the demands of the media can be a challenge.

'Journalists want you to be black-and-white about your conclusions,' she says, 'but you're trying to hold on to all the nuances and qualifications.' These are the parts that academics find so absorbing, and it's also what makes the research robust; but it's exactly those fiddly bits that journalists find a nuisance. 'They've got their job to do, and that means getting the main points over quickly and clearly to the audience without getting bogged down in details and competing interpretations.'

Conciseness is one thing; conflict is something else again. The BBC's *Today Programme* and *Newsnight* are renowned for their adversarial approach to interviewing, and Dr Childs still can't recall her own on-air encounter with *Today*'s Sarah Montague without a sharp intake of breath. Appearing as a politics expert in the media can draw you into the debating-society world of British politics – to the extent of having to square up against some rather splenetic opponents.

'I did a programme on Sky TV when my book came out (*New Labour's Women MPs: Women Representing Women*), and the producers' approach was to pick somebody in the House of Commons who'd be most likely to disagree with what I said.' They picked the late Eric Forth, the right-wing Tory MP. 'His opening line was "I think it's outrageous that you've even called your book this". So that put things on a combative footing straightaway. I had to restrain myself from arguing back and make sure that the more important points got an airing.'

Here's where a little preparation comes in handy. At a media training day run by the Political Studies Association, Dr Childs learned some valuable strategies, 'such as finding out what they want from you before you start, and how they're going to use the information they're asking you for. Then for the interview itself, there's the "ABC" approach: you answer the question, bridge it, then continue in the direction you want to take it. That's great advice – it gives you confidence.'

On radio and TV, at least you know when you're on air; when a print journalist calls you up for an interview, you need to be wary of a clever but not very endearing Fleet Street tactic. 'They'll start chatting to you, being very friendly, and you'll make an unguarded remark – maybe something about your own politics. And suddenly that becomes part of the piece. But that's a lesson you learn very quickly.'

Journalists, after all, have their own agenda, and it's not just the tabloids that want a hook. 'Someone from a broadsheet interviewed me for an article about the experiences of Labour's new women MPs, and I asked them not to use the term "Blair's babes" in their headline. But they, or rather their sub-editors, used it anyway. A more experienced academic friend once told me that if you're not prepared to have your research misrepresented, you shouldn't speak to a journalist.' In other words, you're taking a risk, but it's usually worth it.

'I think it's been really useful for my work,' agrees Dr Childs. 'It makes the research visible to political actors – whether that's parties or pressure groups – and to the general public. Last year, I appeared on *Woman's Hour* with Ann Jenkin, who is married to the Conservative MP Bernard Jenkin. She then called me, and we met to talk about the lack of Conservative women MPs. A few months later she launched Women2Win, a campaign to increase the proportion of women in the House of Commons. That was a good example of how appearing in the media meant that I was able to develop relationships with political activists and politicians, as well as contribute ideas. I also got invaluable insights for my own research.'

Sometimes, the insights are to do with the medium itself. Dr Childs and a colleague from Birkbeck College, Dr Rosie Campbell, recently contributed to a series of *Woman's Hour* programmes which marked its 60th anniversary, and got the chance to eavesdrop on the production team. 'Once we'd done our bit on air we went through to the control room while the other guests were being interviewed, and watched the production team working. And they'd talk into the presenters' earpieces, saying things like "Pull it back, they're getting too technical", or "They're going off on a tangent here". It was *really* interesting to be on the other side of the glass.'

Interesting – and enlightening. 'It made us realise how hectic and pressurised it is,' says Dr Childs. 'As soon as they start one piece, somebody else is planning the next piece and watching the timing so that everything comes in on cue. You also get a sense of *why* they ring you up and say "We want to talk to you *now*". Because that's the way they work – they're running on a hamster-wheel, and there's always the next piece to worry about. It's very different from the way we do things in academia.'

Left: Dr Sarah Childs appears on *Sky News*

'Journalists want you to be black-and-white about your conclusions but you're trying to hold on to all the nuances.'

DAVE PRATT




Above: Havana street scenes; far right: Robert Cottrell and Hayley Sharp

GAMES, DRAINS AND AUTOMOBILES

A timetable-free public transport system, a diet of beans and rice, showers that shot sparks … these were just some of the challenges facing Engineering undergraduates Rob Cottrell and Hayley Sharp when they went to Cuba to help reduce the 60-per-cent leakage rate of Havana's water system. Hannah Johnson hears their travellers' tales.

Cuba presents unique challenges for the engineer, as Rob Cottrell and Hayley Sharp soon found out. Having only collaborated with their counterparts at the Polytechnic University of Havana (CUJAE) by email before, nothing prepared them for what lay in store.

'Before the USSR fell, there was massive investment in the Cuban infrastructure, and part of this was building CUJAE,' Cottrell explains. 'But when the USSR fell, the money ran out. So instead of finished buildings there are empty concrete shells everywhere. Now the university can't finish the construction or cover the cost of taking them down.'

This lack of investment and maintenance was all too apparent in the university's water system. Poorly maintained water networks are a serious problem in Cuba, and CUJAE uses five times more water than it actually needs. The plumbing certainly left a great deal to be desired: 'They'd clearly had plans to install these brilliant bathrooms, but only the basics were there,' says Cottrell. 'Temporary showers had been put in with a plumbing fixture to turn them on and off. But when you tried turning it to hot, sparks would fly out.'

Life at CUJAE contrasted with Bristol in other ways too. The standard diet is rice, beans and fruit and many students have a five-hour round trip to campus every day. 'Public transport isn't exactly reliable,' Sharp says. 'There are no timetables. You just turn up and wait.'

As a result, the Bristol team frequently had to get up very early to allow time to travel to their meetings with the local water company. 'The Cubans are very laid back, particularly about timekeeping. It's partly the national character but a lot of it has to do with the transport system. We would joke about whether we were meeting at nine o'clock "Cuban time" or "UK time". They were always surprised how much effort we made to be punctual.'

Although usually dependent on buses, Cottrell and Sharp also enjoyed a memorable ride in one of the old American cars that fill the streets of Havana. 'A lot of people supplement their day job by offering an unofficial taxi service in their own car. Our driver was a doctor during the week and gave rides at weekends. He had this amazing big blue car. But halfway through our journey, we had to pull over so he could open the bonnet and work out what was smoking.'

From vintage Cadillacs to pictures of Che Guevara, Cuba certainly lived up to many of Cottrell and Sharp's expectations. But, increasing tourism is having a marked effect on the island's character and economy. Two currencies exist: the Cuban Peso (CUP) used by locals, and the 'tourist dollar', the Cuban Convertible Peso (CUC), which is worth far more. When Sharp tried to explain why someone in the UK would choose engineering rather than music as a career, the locals were surprised. 'In Cuba, if you're an engineer you get paid a state wage, which isn't much,' she says. 'But if you're a musician and you play for the tourists you can make so much more. What an engineer makes in a week, a musician can make in a couple of days.'

'What an engineer makes in a week, a musician can make in a couple of days.'

Some things will never change, though – including the Cubans' passion for football. With the 2006 World Cup in full swing during their visit, the engineers were inspired to stage their own international matches. And they didn't let the lack of a proper pitch stand in their way. 'We played on a basketball court,' says Cottrell. 'It was obviously going to be a really nice court once, but like so much else it was never finished. Instead, they'd knocked up a couple of metal goalposts. In Cuba you've got to improvise – that was one of the biggest lessons we learned.'

For more information about the Havana Water Project, go to www.ewb-uk.org/node/1892 or www.mondialogo.org/265.html.

A TOUCH OF GLASS

When is a glassblower not just a glassblower? When he's applying age-old techniques to cutting-edge research. Hilary Brown meets the Physics Department's John Rowden, who is taking his craft to new heights.

There is something of the demonic about John Rowden's glassblowing workshop in the bowels of Physics: billowing flames, work benches laden with giant coils of crazily twisted tubing, a bright red curved neon rope, beakers sprouting finger-like protrusions filled with copper wire, like some kind of medieval instrument of torture. If it wasn't for the radio playing the Arctic Monkeys in the background, you might think twice about entering.

But fear not, Rowden welcomes visitors, especially those wanting to have a go at making a glass bead. 'People just can't help wanting to get their hands on molten glass,' he says, brandishing a jar of efforts that have literally gone pear-shaped.

While Rowden could rustle up a perfectly formed necklace in the twinkling of an eye, his mind is usually on higher things. 'Glassblowing is a dying art,' he says (he is one of only 60 or so glassblowers in the country). 'It's not just a case of manipulating hot glass any more. Glassblowing can only survive if you find other applications for it.'

That is exactly what Rowden is doing in collaboration with Dr Neil Fox of the department's micro- and nanostructural materials group. 'We're taking the same old technique that is used to make a simple lightbulb, that is, putting electricity inside a vacuum, and using it in high-voltage applications, in this case to develop high-resolution field emission displays.' Such displays are everywhere – in computers and mp3 players, for example – and in future will use diamond emitters to achieve better resolution.

'We're taking the same old technique that is used to make a simple lightbulb to develop high-resolution field emission displays.'

DAVE PRATT

It suits Rowden's inquiring mind to get involved in research projects such as this. 'I'm interested in the science behind glassblowing. Working with glass is what gives me ideas, helps me work out new ways of doing things – it doesn't really matter what I'm making.'

Rowden trained as a chemist, and worked for 20 years in a chemical company in Avonmouth. 'Fifteen years into the job, I saw a colleague making glass chemical apparatus for the research department and was completely taken with it.' He qualified through the Technicians Training Scheme at what was then Brunel Technical College and followed this with an HNC in electrical engineering. When his colleague retired, he took over the job.

Now into his 14th year in the Physics Department, a typical day is still something of a mystery. 'I never know what I'm going to be asked. Questions about any one of dozens of techniques could crop up from colleagues.'

As well as the normal lab equipment you'd expect a glassblower to make, such as a Liebig condenser (a straight glass tube surrounded by a water jacket), he might be asked to cut a 100-micron (a very thin) sheet of glass to specific dimensions to make a sensor or to fit a particular instrument.

'I make unusual glassware all the time – spiral tubes, multi-layered glass, cryostats [apparatus for maintaining very high temperatures]. The most difficult thing I've ever had to make is curved fluorescent tubing for Richard Box's artwork.' Local artist Richard Box was formerly artist in residence in the Physics Department, and is well known for his 1,000 fluorescent light tube sculpture, 'Field', powered from overhead power lines. 'Richard is very critical of the shapes – things have to look just right.'

Rowden is keen to encourage people to try glassblowing for themselves: 'It can be fun and relaxing, as well as educational.' To demonstrate this, he took part in last year's Science Alive, a hands-on public engagement science event in Broadmead shopping centre, and ended up making glass animals with schoolchildren. 'They loved it – we had the younger ones squashing molten glass with a carbon tool, and putting a face on it. Some twin girls wanted to make an elephant each, so I made the body and they put the eyes, ears and legs on. One of the twin's hands was shaking so much that she put an eye in the middle of the elephant's head, so her elephant ended up with three eyes. She was quite happy with the result, though, because the models were identical otherwise, so now she could tell hers apart.'

Which brings us to one final, necessary, skill – the ability to hold your arm in the same position for several hours at a time. You don't have to have biceps of steel to be a glassblower, but if you're fussy about how many eyes your elephant has, it helps.

... A NEUROSCIENTIST

As a student, Dr Anne Cooke, Research Facilitator for Bristol Neuroscience, wasn't sure which branch of science to pursue – until a close family member was struck by a fatal neurological disease. She talks to Nick Riddle about her path to Bristol, her change in direction, and the pleasure of making connections – neural and otherwise.

I went to Cambridge University and did Natural Sciences; if you want to do any kind of science at Cambridge, that's how you start. You start off looking at all the sciences, and by the third year you've chosen your specialised area. When I started, I had no idea what I wanted to specialise in, though I knew I was leaning more towards biology than physics.

What attracted me to neuroscience to begin with was the challenge of it. When we covered nerve cells, it took me ages to get my head round it, so I put a huge amount of work into that – reading around, and getting drawn into it. I think studying the brain is the most fascinating and amazing area in science; you're delving into what it means to be human, and starting to cross from science into philosophy. And where else do you try and work out how something works using the very thing you're trying to understand?

In my second year at Cambridge I was doing neurophysiology, but still not sure of what I wanted to do. Then my uncle was diagnosed with motor neurone disease, or amyotrophic lateral sclerosis (ALS). Sufferers have progressive paralysis, but only of their skeletal muscles, so their cognitive abilities are intact. The prognosis is usually three to five years. This had a huge impact on me – my uncle was a wonderful man, a very talented musician, and one of the first things that happened was that he couldn't play the piano any more. It was very difficult to see him go downhill so quickly. Thankfully, he died before reaching the final stages of the disease.

His cousin had also died of the same disease a couple of years earlier. So that's my Mum's cousin and her brother – you do start wondering about the heredity of it. But that drew me in a personal way towards studying the nervous system, and medical research. It wasn't that I had unrealistic notions of finding a miracle cure, but I did want to play a part in medical research, and in building our knowledge of how the nervous system works – and ultimately, helping people with a similar diagnosis in years to come.

That tilted the balance. I specialised in Neurophysiology, then did a PhD in Neuroscience, then a postdoc. But I began to think that it wasn't my forte to be a career scientist. I liked working at the bench, but I felt confined by the narrow focus of lab work. I love talking to people and finding out about what they're doing, and seeing opportunities to work with others, and making connections. I wasn't getting the chance to do that where I was.

In 2002, I applied for a newly created post in the School of Medical Sciences at Bristol that took me away from the bench. There was plenty of neuroscience research going on here, but no Neuroscience Department. The research was spread across three different faculties and many different departments, and there wasn't a lot of communication between them. Professors Stafford Lightman and Graham Collingridge, with the support of the Vice-Chancellor, had the idea to create this new post – someone to connect all these bits of the Bristol brain. I had a remit to set up the Bristol Neuroscience Institute (now shortened to Bristol Neuroscience, or BN), and see if I could make the idea work. Something went right, because I'm still here! Neuroscience has become one of the University's research themes, and there are now collaborations that came about through BN.

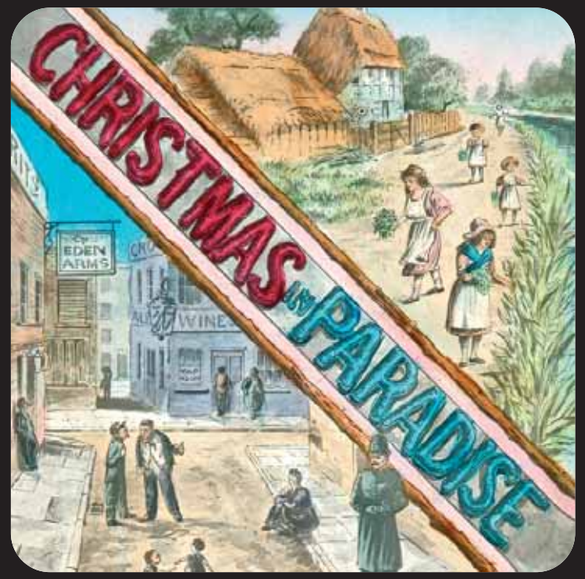
My work runs the gamut from small things – how do you use this, or has anyone got such-and-such equipment – to getting people co-authoring papers or applying for grants together. I'm also trying to create more links between the basic neuroscience research going on here and some of the clinical neurosciences at Frenchay Hospital, which is the regional referral centre and does some terrific work.

One of the things I'm proudest of is introducing scientific speed-dating at a BN Away Day. We had 250 people in the Wills Memorial Building, and in between the traditional presentations we mixed in a few unconventional things. All these academics in the Great Hall had to move on to a new partner every two minutes – there was some scepticism beforehand, but it worked really well. I like getting the chance to mix things up a bit.

DAVE PRATT

'I think that studying the brain is the most fascinating and amazing area in science; you're delving into what it means to be human.'

Left: Dr Anne Cooke in front of a print by artist Simon Whitehead
Right: Her uncle, Peter George Russell, examines a butterfly at a nature reserve a few weeks before his death



THE MAGIC LANTERN SLIDE COLLECTION

Among the extensive holdings at the University of Bristol Theatre Collection are some 400 magic lantern slides. Magic lantern shows were used to educate, entertain and mystify audiences in the nineteenth and early twentieth centuries; the Bristol collection covers a wide range of subjects including dramatic performance, art history, classics, archaeology, geography, social history and theology.

These four images are part of a set of 25 fragile hand-coloured slides that tell a story of vice, dissolution and redemption. The set, entitled 'Christmas in Paradise', was produced in the 1890s to illustrate the virtues of temperance.

The Illumination Project is now ensuring that this previously inaccessible visual resource is conserved, catalogued and digitised, and in due course it will be made available online. Funding for the project comes from the Bristol Institute for Research in the Humanities and Arts (BIRTHA) and the Arts Faculty Research Directors Fund.

Endnotes

1 'Frog Chorus' by Simon Hall is one of the images issued from current research at the School of Chemistry and used as the basis for the 2006 Chem@rt competition. The pictures were sent to schools to act as stimuli for creative writing and poetry. The project, supported by the Alumni Foundation, the Royal Society of Chemistry and the Engineering and Physical Sciences Research Council, was a great success and Chem@rt 2007 is under way.

2 Third-year medical student, Hugh Sims Williams, came second in the Sail for Gold regatta in Weymouth last October. This international Olympic classes regatta is being held every year up until the 2012 Olympic Games, at which Sims Williams hopes to compete. Aged 23, he is the youngest windsurfer in one of the UK's most successful Olympic teams, Skandia Team GBR.

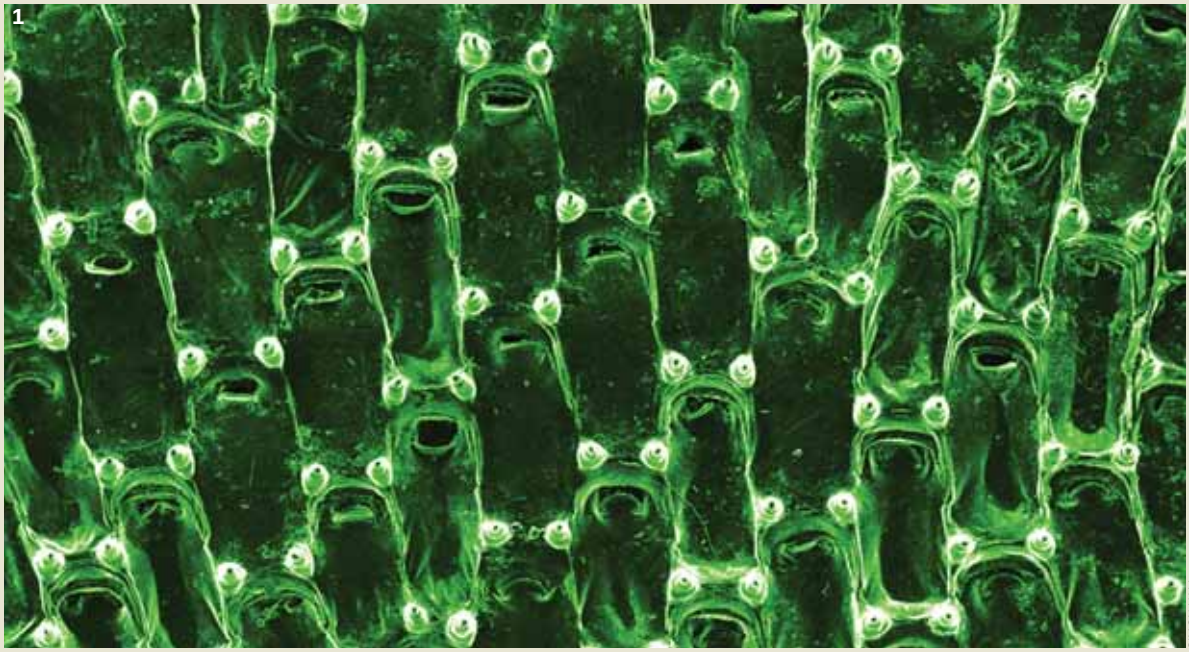
3 The art world was left reeling by the discovery by Michael Liversidge of the Department of History of Art of two paintings by early Renaissance artist Fra Angelico. Mr Liversidge was shown the paintings by the owner, a Bristol alumna, at her house in Oxford. He identified them as the two missing panels from the San Marco Altarpiece, dating from between 1439 and 1443.

4 A greater horseshoe bat (a sedentary species that rarely travels far) has been found by PhD student Jon Flanders of the Department of Biological Sciences to have flown 100 miles to a new roost. The baby female flew from her colony in Gloucestershire to Purbeck, where Flanders is conducting a 'Bats in the Landscape' project.

5 The University's new Botanic Garden was awarded the West Country TV Cup for best Outstanding Special Project in this year's South-West Regional Final of the Britain in Bloom competition, organised by the Royal Horticultural Society.

6 One of the highlights of the Wickham Theatre's autumn season was TNT Music Theatre's touring production of Shakespeare's tragedy *King Lear*. Live music was incorporated into the performance, as would have been done originally at The Globe. TNT founder members Phil Smith and Paul Stebbings are graduates of the Department of Drama. *The Guardian* described the performance, directed by Stebbings, as 'one of the most interesting developments on the current theatrical scene'.

7 Student Community Action (SCA) provided fun, games and face painting at the 12th annual kids' party last term. The event, sponsored by the Co-operative Membership, is aimed at schoolchildren from the Bristol area, including Hartcliffe, Knowle, Southmead, Avonmouth and St Paul's. SCA has more than 800 student volunteers working on dozens of projects throughout the year.



SIMON HALL

RICHARD LANGDON/SKANDIA TEAM GBR

DANIEL RUSHALL

GARETH JONES

NICK WRAY

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