

Imperial College
London



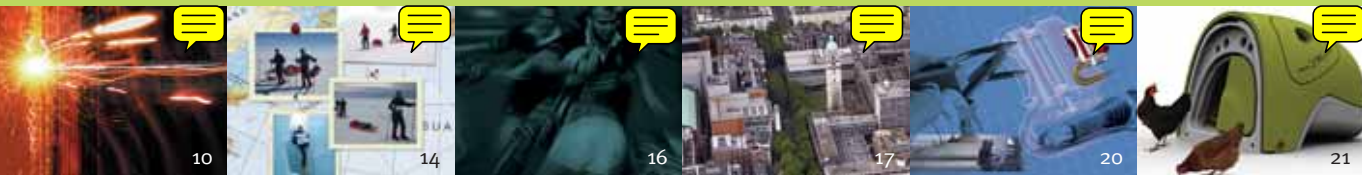
staying connected

ISSUE 26 SUMMER 2005 POSITIVE ENERGY_INTREPID
EXPLORERS_THE URBAN HEN COOP_SPORTING TRIUMPHS
OLD AND NEW_PLUS ALL THE NEWS FROM YOUR ASSOCIATION

IMPERIALmatters

Alumni magazine of Imperial College London including the former Charing Cross and Westminster Medical School,
Royal Postgraduate Medical School, St Mary's Hospital Medical School and Wye College.

in this issue ...



REGULAR FEATURES

- 1 editorial by Sir Richard Sykes
- 2 letters

NEWS

- 4 news from Imperial
- 8 faculty news

ASSOCIATION

- 22 chapter news
- 25 international news
- 26 alumni focus
- 29 books
- 30 obituaries
- 33 honours

FEATURES

- 10 **energy**_how Imperial is addressing global issues
- 14 **an Antarctic challenge**_a record breaking attempt to reach the Pole
- 16 **my moment of glory**_a sporting triumph remembered
- 17 **future success in fundraising**_Development Advisory Board alumni members
- 20 **engineering design**_an enhanced collaboration with the RCA
- 21 **the good life**_four alumni make a success of innovative design

IMPERIALmatters

DESIGNED AND PRODUCED BY IMPERIAL COLLEGE COMMUNICATIONS FOR THE OFFICE OF ALUMNI AND DEVELOPMENT

EDITOR LIZ GREGSON

EDITORIAL ASSISTANT NATALIE EASSON

MANAGING EDITOR/PRODUCTION MANAGER LIZ CARR/SASKIA DANIEL

FEATURES EDITOR ALEX PLATT

DESIGN JEFF EDEN

PRINT PROLITHO

DISTRIBUTION MERCURY INTERNATIONAL

building the connection IS PRODUCED BY THE OFFICE OF ALUMNI AND DEVELOPMENT

IMPERIAL MATTERS IS PUBLISHED TWICE A YEAR. THE NEXT ISSUE WILL BE PUBLISHED IN JANUARY 2006 AND THE COPY DEADLINE IS FRIDAY 11 NOVEMBER 2005

ADDRESS FOR MAGAZINE ENQUIRIES:

LIZ GREGSON, OFFICE OF ALUMNI AND DEVELOPMENT, IMPERIAL COLLEGE LONDON
SOUTH KENSINGTON CAMPUS, LONDON SW7 2AZ
e.gregson@imperial.ac.uk

© IMPERIAL COLLEGE OF SCIENCE, TECHNOLOGY AND MEDICINE, 2005. ALL RIGHTS RESERVED.

regular features



- 1 editorial by Sir Richard Sykes
- 2 letters



editorial

DEAR ALUMNUS

Welcome to the latest edition of *Imperial Matters*, your alumni magazine.

As Imperial moves towards its Centenary in 2007, we're planning how best to commemorate this momentous occasion. One hundred years is a significant milestone in our history and the next hundred years will no doubt be even more important. So we'll be looking forward to a bright future for this remarkable institution as well as celebrating the achievements of the past hundred years. As our plans develop, we'll keep you posted.

Just before this edition went to press, it was announced that Professor Peter Knight, Head of Physics, and Professor Gordon Conway, Professor of International Development, had received knighthoods in the Queen's Birthday Honours. Some of you were lucky enough to be tutored by Peter and Gordon and, like all of us at the College, will be delighted to receive this news. Both Peter and Gordon continue to show outstanding leadership in their own ways and we're immensely proud to be able to share in their achievements at Imperial.

And it doesn't stop there. In this issue, we share the part that Imperial academics played in the Cassini-Huygens mission to Saturn as well as the story behind the successful private placement of stocks in Imperial Innovations, which you may have read in the media recently. In different ways, both of these stories exemplify how Imperial continues to achieve global recognition and investment for its world class leadership in science, technology and business.

On pages 8-9 you can read about the significant achievements of the new Principal of the Faculty of Physical Sciences, Professor Michael Duff, as well as those of Professor David Begg, Principal of Tanaka Business School, who recently celebrated two years in post.

On page 14 is a feature on two of Imperial's newest alumni, David Ward and Adam Rumley, who are about to embark upon a

record breaking expedition to the South Pole. They stand in a long line of intrepid explorers who have studied at Imperial and I'm sure you'll join me in wishing them luck and look forward to reading about their adventures in subsequent editions of *Imperial Matters*.

Also enclosed with this edition is a copy of the new look *building the connection*, your donor relations newsletter, which has been redesigned to reflect the increased number of donors to the College.

On a final note, thank you for your continuing support of Imperial, particularly through initiatives such as the Student Opportunities Fund, which is helping to make a real difference to the lives of students studying at Imperial.

I look forward to welcoming you to some of our alumni and annual donor events this Autumn.



letters

Imperial Matters welcomes letters for publication, by post or by email. We reserve the right to edit them for length. Unless you specify otherwise, letters may also appear on the Imperial College alumni website as part of the online edition of *Imperial Matters*.

Engineering status in the UK

Listening to a recent Radio 4 interview with the Secretary of State for Education and Skills on the subject of examination reform, I was, as usual, depressed to discover that even at ministerial level there is the inevitable association of the words 'engineering', 'practical' and 'vocational' in an unbreakable trio. 'Academic' it seems is exclusively reserved for the 'pure' arts and sciences.

One despairingly concludes that neither participant ever gives a passing thought to how the everyday miracles of mobile phones, digital television and satellite navigation have been made available to a world of consumers; or that we have at our immediate disposal water to drink, fuel for warmth and food to eat. Do those in the corridors of power ever consider that it is engineers both in academia and in businesses around the world who have brought this about, not 'under-achievers' who aren't expected to pass their A levels and so got shunted on to the 'vocational' route?

In my daily experience the perception of an engineer in the UK today is of someone who can, with appropriate training, hold a spanner without dropping it on to his/her (steel-toed) boot. This is despite the fact that some of the world's best engineering talents were born, educated and practised in Britain over the last 400 years.

To me the underpinning of all economic activity is the exchange of manufacture and raw material, and that engineering skill is the prime mover in making this possible. Before we are relegated to second-class world status, the DFES, together with the Institutions, must, as a priority, raise the profile of engineering in the UK, particularly among the young. As we delay, hard earned skills in manufacturing are being lost forever with every day that passes, both in the boardroom and on the shop floor.

BOB ACUTT (Mechanical Engineering 1969)

The growth of Westminster Medical School

As an alumna of Westminster Medical School, I was very sad some years ago when it was announced that my daughter could not join my old medical school but would have to go to a 'rival'. However, since I began to receive *Imperial Matters*, I have been amazed to learn of the huge range of departments of which Westminster has become a family member. This must surely lead to a much wider range of activities than was possible before, and so to a more broadly based medical education. How lucky today's students are!

TOM KEEBLE (Westminster Medical School 1959)



We have had a great response from more alumni who remember waltzing with the King or climbing the forbidding Queen's Tower, as well as some stories from our more mature alumni who responded to our request in issue 25. Here are a few more of your memories.

Strictly ballroom

I am delighted to be able to add the full story to Manfred Kosten's reminiscence (*Waltzing with the King*, issue 25). The centenary was a very grand occasion and once the presentations were over, everybody mixed freely and the King and Queen talked to every student who drifted near. There came a moment when six of us girls found ourselves talking to the Royal couple on our own. We knew that the King and Queen loved ballroom dancing and I said: "Would your majesties like to join us?" She looked at him with a sparkle in her eye and said: "It would be fun, wouldn't it!" Spontaneously they came with us – out of the back door and across to the Royal Albert Hall.

From there on Manfred's memory is absolutely correct. There were few couples on the floor, and since the King and Queen's visit was unscheduled it was only because some of the band spotted them standing with us, and stopped what they were playing that anyone looked. Hard to imagine this happy episode happening today – imagine...

GWYNETH RANKIN (Botany 1944)



Manfred's letter certainly brought back memories, I must have been dancing very close to him as it happened exactly as he described! During the formal part of the evening the King made a speech which he started rather hesitantly, his stammer being evident at times. We students were all standing in the centre of the hall and we showed the then normal sign of student approval at appropriate times, by stamping noisily on the floor. This interrupted his speech, but the King started laughing and became visibly more relaxed and a rapport developed.

Some days later, we heard that the College authorities had intended to give us a major dressing down for this but had been snookered by a personal message from the King, saying that he had not enjoyed an evening so much for some time! As a first year student it was an introduction to College life that I will never forget.

ALAN BURDETT (Mechanical Engineering 1950)

I read with particular interest Manfred's letter about the centenary celebrations in November 1945. I was there too, dancing with my partner in the Royal Albert Hall, within a few feet of the royal couple.

Apart from the ball, the College was open to guests during the day with all sorts of demonstrations in progress. Certainly at Guilds, in the alleyways behind the Goldsmiths' Lab, there were demonstrations of flame-throwers and FIDO, (the fog dispersal system for airfields), on which the College had performed research during WWII.

DAVID PECKHAM (Mechanical Engineering 1952)

Same tower, different views!

In the 1960s the Gliding Club helped to (legitimately) strip the old West London Air Terminal of all its equipment when it moved to new premises next door. Our newly acquired equipment was all stored in one of the rooms in the base of the Queen's Tower and, as the captain of the Gliding Club, I was given a key. I well remember giving fellow Civil students unofficial guided tours of the tower. I decided that this had gone a little too far when, one evening, some of my more inebriated friends started to ring bells which resounded all over South Kensington!

MALCOLM BAILEY (Civil Engineering 1964)

I was a postgraduate student in Physics in the early 1950s. Getting to the top of the Queen's Tower (Colcutt Tower as it was then known) presented a challenge but the door to the tower was kept locked. We knew that the tower housed bells and one lunchtime my colleagues and I heard the bells ringing. We realised that during this practice the door to the tower would probably be left unlocked so we dashed across and were proved right.

We climbed the stairs, very careful not to be seen as we passed the door to the bell-ringing chamber. When we got to the belfry the sound was so intense I was worried that it might rupture our eardrums. I remember opening my mouth because I had been told that it would help to balance the sound pressures. The view from the top was magnificent and well worth the risk. We lingered there picking out landmarks until we realised that the bells had stopped ringing. The speed of our decent to avoid being seen and not locked in would qualify, I have no doubt, for the record books!

M T BROWNE (Physics 1952)

That's the last lot of letters we'll be publishing on the subject of the Queen's Tower in Imperial Matters for a while. But do not despair. Due to the popularity of this item, we have established a tribute page to the tower on the alumni website (www.imperial.ac.uk/alumni/tower) and we welcome your contributions... Ed



In safe hands

Frequent complaint is made by chemically orientated colleagues about the stultifying effects of today's health and safety regulations on teaching and research, particularly the latter. This led me to think of my student days at Imperial, a particular memory being the chemistry practicals which took place in a huge white-tiled laboratory, lit by pendant lamps with green lampshades from the high ceiling above the old wooden benches. On dark winter afternoons, the thick fumes arising throughout the lab were certainly visible and the smell of gas (H₂S) discernable from the fume cupboards. By today's regulations we should not have survived!

First as an industrial researcher and then, since 1960 as an academic, I have watched safety regulations move from the sensible and appropriate to ludicrous 'nannying' which can, in my view, only serve to restrict course enjoyment and entrepreneurial activity.

DR JAMES CHARLES (Metallurgy 1947)

Confessions of a Guilds spy

I arrived at Guilds in October 1950, four days late, having just finished a live ammunition battle course on cold and rainy Dartmoor. I was an unfamiliar face in the eyes of the Guilds Union hierarchy and, at that time, they were looking for such a person.

The Morphy Cup boat races were coming up and the previous year's event had been a disaster for the Guilds when some dastardly Mines students had gained control of a bridge under which the boats passed on their way to the finish line, proceeding to pour sacks of soot onto the heaving Guilds oarsmen and disrupting the race completely. The Guilds Union had no intention of allowing such sabotage to happen again and for this reason, I was approached and informed that I had again been selected by the President to act as a 'Guilds spy'.

My mission was to infiltrate the forthcoming Mines Union meeting and, should I survive, report back on any future plans to mess with any Guilds events. I was told, in order to get into the Mines meeting, all I needed to do was 'look a bit weird and act like a simple miner'.

I went to the meeting and took my place, not daring to look left or right. Half way through, two students from the RCS were ceremoniously given back their trousers, having been 'debugged' at some previous tussle, and then courteously escorted from the room amid loud cheering. The meeting dragged on but there was not even a hint of plans to disrupt any future Guilds events. At the end of the meeting, I left with nothing to report, but with my Guilds spying status intact!

ALAN L MILLER (Mechanical Engineering 1953)

Please send your letters to:

Imperial Matters

Office of Alumni and Development

Imperial College London

South Kensington campus

London SW7 2AZ

or by email to matters@imperial.ac.uk

news



- 4 news from Imperial
- 8 faculty news

Making an exhibition of itself



April saw the launch of *A Vision for Exhibition Road: A Space for the New Century*.

The project, which focuses on the Exhibition Road corridor and pedestrian tunnel, as well as the wider South Kensington area, aims to integrate vehicular and pedestrian traffic whilst preserving the road's important function as a vital transport link. The ethos for the area is an emphasis on encouraging careful driving and considered behaviour from pedestrians.

The overall design aims to set new standards of urban design which will

accommodate changes in demand over the next century.

Kensington and Chelsea councillor Merrick Cockell explained: "This is the most significant intellectual highway in Britain but this is not evident from the design and identity of the street. What we are presenting is a visionary scheme but, at the same time, a realistic and achievable one – a scheme that will allow Exhibition Road to regain its place as a cultural centrepiece."

To ensure this feeling of 'equal and inclusive access for all road users', the streetscape will be redesigned, with the use of a bold paving design and coordinated street furniture. There will also be showcases of public art for the area's users to enjoy.

The Rector said: "Imperial is proud to be an integral part of one of London's greatest thoroughfares. All the partners in this venture are world class, and we need to offer our visitors and staff an environment that reflects that expertise and standing. With our new main entrance, I believe Imperial has made a major contribution to the innovative and creative setting we all hope the Exhibition Road project will deliver."

Following public consultation, implementation is due in 2006-09.

College collaborates in cancer care

Researchers from Imperial and the University of Texas M.D. Anderson Cancer Centre met in March to launch a joint initiative aimed at advancing scientific discovery of novel cancer therapies. The

agreement builds upon professional relationships between clinicians and researchers at both institutions and represents another step forward in the global fight to eradicate cancer.

The collaboration agreement calls for the establishment of a research programme focused on identifying new molecular targets for cancer diagnosis and treatments that the two institutions will carry out over the next few years. Both are internationally renowned for their commitment to, and excellence in, translational medicine, which drives pioneering cancer research from the laboratory to patient therapies at the bedside.

By working together, Imperial College and M.D. Anderson hope to maximise their strengths in basic science research and clinical programmes, accelerating the speed of scientific discoveries.

Over £20 million raised from City tech transfer deal

Imperial and its technology commercialisation company, Imperial Innovations, have jointly raised over £20 million from institutional investors. The private placement of shares in Imperial Innovations is the first by a UK university-owned technology transfer business.

The College will use its £10 million from the sale to support its financial strategy of building capital for its academic mission. Imperial Innovations will invest its £10 million back into the spin-out companies it helps to generate, speeding up the process of formation, development and growth.

The College remains a 71 per cent stakeholder in the company that it formerly owned. It has agreed an exclusive 15-year pipeline agreement with Imperial Innovations, which allows the company to commercialise technology originating from Imperial's research activity.

Susan Searle, chief executive officer of Imperial Innovations said: "This fundraising was possible because of the combined support of Imperial's inventors, entrepreneurs and management, together with Imperial Innovations' management team."

Innovations has generated revenues of £30 million from spin-outs and licences since 1997. Together with Imperial's academic inventors it has established equity holdings in 54 spin-out companies and completed a total of 74 licence deals. Over 1,000 jobs have been created through its spin-out companies.

>> NEWS IN BRIEF >> NEWS IN BRIEF >> NEWS IN BRIEF >> NEWS IN BRIEF >> NEWS IN BRIEF >> NEWS IN BRIEF >> NEWS IN BRIEF >> NEWS IN BRIEF >> NEWS IN BRIEF >>

Imperial research recognised at top level Prime Minister, Tony Blair, and Patricia Hewitt, then Trade and Industry Secretary, visited Imperial in April following the announcement of a £10 billion investment in UK science.

They visited the laboratory of Professor Donna Blackmond, Professor of Catalysis, who carries out research in the Departments of Chemistry, and Chemical Engineering and Chemical Technology. Her work on understanding how chemical reactions can be improved by catalysts is essential to help industry develop cost effective new medicines for

diseases such as cancer, heart disease and AIDS.

The government funding, which will be rolled out over the next three years, is aimed at closing the research gap with the USA. It will focus particularly on biotechnology, climate change science, and on promoting collaboration between universities and industry to encourage commercialisation of research.

Come fly with me A new flight simulator at the College is enabling students to fly their own designs for the planes of the future.

Using the MOTUS simulator, students can programme any aircraft design into a computer and then test how it would perform in all the conditions that a real aircraft might face, including turbulence and extreme weather conditions. The simulator is the only one of its kind in the UK, the only one in an aeronautics department, and one of only 22 in the world.

Students have previously tested their project designs using computer models. Many of the handling characteristics of an aircraft are so subtle that they can only be established through flying a model,

actual or virtual.

A screen outside the cockpit enables observers to watch the flight and alter the conditions in which the plane is flying. All data on the aircraft's performance are stored by the computer meaning that flights can be replayed and analysed.

Imperial hope for allergy sufferers A research team from Imperial and Royal Brompton Hospital have discovered a way to decrease allergic reactions to cats by increasing numbers of CD4+ regulatory T-cells.

Key target for foot and mouth drug

Imperial scientists have recently published a complete picture of foot and mouth disease's key replication enzyme, an advance that could aid the development of new drugs to control the disease without recourse to vaccination or slaughter.

By solving the structure of the foot and mouth disease virus (FMDV) enzyme named 3C protease, researchers from the Division of Cell and Molecular Biology and the Department of Chemistry have taken an important step towards developing protease inhibitors, a class of anti-viral drug that has proved hugely successful in controlling HIV.

The structure paves the way for their development by revealing the atomic details of the key viral enzyme that would serve as a target for drugs.

3C protease's function is to help the virus replicate itself. A drug that binds and inhibits FMDV 3C protease would stop its spread by blocking its replication and thus its ability to infect a herd.

"In an outbreak we would 'dose up' the animals and in theory they would be protected immediately," said Dr Stephen Curry, senior author of the paper published in the *Journal of Biological Chemistry*.

In contrast, vaccines take several days to have effect and that allows further spread of the disease."

"Our work is a very first step in developing an effective drug to do this. We can see what the enzyme looks like and it gives us an idea of what sort of shapes and types of molecule could bind specifically to the enzyme and block it."

The Imperial researchers are now designing a molecule to act as an inhibitor.

Together with Professor Robin Leatherbarrow of the Department of Chemistry, Dr Curry's team has probed the specificity of the 3C enzyme in the hope of developing peptide-like inhibitors, similar to those successful in tackling HIV. Professor Leatherbarrow is mapping out the key amino acid sequences that the protease snips in-between, a process called 'peptide cleavage analysis'.

"We've determined the key features of peptides that are recognised by the FMDV 3C protease. Now we can start working on making the inhibitors," said Dr Curry.

Protease inhibitors were developed against HIV in the 1980s and 1990s, the first going on sale in 1996. Interactions between the drugs and the HIV virus produced drug-resistant strains, reducing the treatment's effectiveness.

Although the same strategy is being adopted, Dr Curry does not foresee the same happening with an FMDV protease inhibitor due to the intrinsic differences between the diseases:

"HIV is a very long term infection, taking 10-15 years to overwhelm the body. That gives the virus plenty of time to develop resistance to anti-viral drugs. FMDV is highly contagious, much easier to get than HIV and has a rapid onset, which is why outbreaks tend to spread so rapidly," said Dr Curry. "If you wanted to control an FMDV outbreak you could, in theory, swamp the livestock population with anti-viral drugs for a few weeks and hopefully eradicate the outbreak very quickly."

The structure took over four years to solve, the start of the research pre-dating the 2001 foot and mouth outbreak. The greatest problems came in making crystals of the 3C protease, so that its structure could be solved by X-ray crystallography – a particularly taxing task for then beginning PhD student and first author of this paper, Dr James Birtley.

The work was supported by the Biological and Biotechnological Sciences Research Council, the Fleming Fund (Imperial College London), and the Medical Research Council.

Imperial professor over the moon

The Cassini-Huygens mission to Saturn is the most ambitious effort in planetary space exploration ever mounted. David Southwood, PhD Physics 1969, on secondment from Imperial's Department of Physics to the European Space Agency, told us how it felt to be part of the project.

"Everybody knows now that Huygens entered, descended and landed safely at Titan. But what did it feel like for me?"

It has been not only a major technical and scientific success for ESA but also something very personal for me. The outcome exceeded my wildest dreams and it makes a memory that nobody can ever take away.

The stakes were high – this was tougher in many respects than landing on Mars – but the science is going to be wonderful.

The night before, I woke up from a dream where I was tearing at the probe back plate to release the parachute. This had been recurrent since Christmas and no doubt is associated with last year's loss of the British Beagle lander on Mars. The nightmare is now over though and all is glorious day.

In the Darmstadt ops centre, the teams were overcome with what Huygens had done. Tears came to the eyes of hardened scientists and engineers, including my equivalent in NASA, the associate administrator, Alphonso Diaz.



>> NEWS IN BRIEF >> NEWS IN BRIEF >> NEWS IN BRIEF >> NEWS IN BRIEF >> NEWS IN BRIEF >> NEWS IN BRIEF >> NEWS IN BRIEF >> NEWS IN BRIEF >> NEWS IN BRIEF >> NEWS IN BRIEF >>

There are a number of types of T-cells in the body including T-helper 1, which are important in autoimmune diseases, T-helper 2, which are important in allergies, and T-regulatory cells. In allergic diseases, the body produces too many T-helper 2 cells, and not enough T-regulatory cells. This can result in asthma, hay fever and allergic eczema.

The researchers discovered that by increasing the levels of CD4+ T-regulatory cells they were able to control the extent of the allergic inflammation. They injected cat allergen synthetic peptides into volunteers to

stimulate the growth of the regulatory cells, and found the extent of the allergic reaction was reduced.

Imperial students up to the IBM challenge

A team of five Imperial students from the Faculty of Engineering have won the IBM Universities Business Challenge 2005, beating more than 130 teams from universities across the UK. The students demonstrated their skills running fictional businesses for four months, before taking the first prize of a trophy and £1,000 at the final held at IBM's south bank building.

The Imperial team acted as management consultants for a fictional brewery, a wine bar and a games company over the three rounds of the competition and experienced all aspects of running a business, from making marketing decisions to purchasing factory space.

The team comprised Saurabh Pandya, Yi Zhang, Wei Feng, Zhi Lim and Chao Yi.

Imperial researcher keeps memory of Guinea Pig Club alive

The true story of an exclusive drinking club with an unusual

membership policy has won Imperial research associate Dr Emily Mayhew a prestigious TV documentary prize.

Her programme, *The Guinea Pig Club*, documents a club that was open only to those who had cheated death in World War II and suffered a permanent disfigurement.

Praised by the judges for its original journalism and the strength of its storytelling, the documentary won the best history programme prize at the Royal Television Society awards held in March. It was based on Dr Mayhew's book *The Reconstruction of Warriors*, which came out of her PhD

Imperial news

The most emotional moment was early on, getting the direct signal from a massive radio telescope in Green Bank, USA. The back plate had to have left and the parachute had to have deployed. At that time we had no idea that the science data was okay, but we had qualified engineering success. I said, 'the baby is out of the womb, we haven't yet counted the fingers and toes and we do not know how it is going to grow up'. I don't know how my children feel about my using their births as the reference point for such a cathartic moment in my life but it is the best I can do to express the emotional wave and the adrenalin rush.

More steps kept being taken. The engineering and science data started coming back to Cassini – so Cassini had turned and now faced the Earth. Then came the downloaded data and eventually the images and everything else that we wanted – but more. Our little 'ET' kept phoning home until Cassini went over its new horizon – but we could still hear it bleeping away through the radio astronomy network after the USA, then Australia and then China!

Eventually, after about six hours, our little baby expired with the batteries frozen to death on the other side of the solar system. We had only been guaranteed its life for two or three minutes once it got down. By the end of Friday, I think I got to be 'over the moon' at about 23.30 our time – after that I could no longer find words.

The scientists now are filled with wild surmise. The science to come is breathtaking. It is not just for today. It is history. It is forever. Scientists, as yet unborn, are going to work on the data we have now returned.

If this were just science, it would be exciting enough – but it isn't, it isn't clean enough for science. Nor are there one or two persons responsible, or one single result – there is a massive team worldwide who got us here and all the scientific debates lie in the future. We were explorers. We were experiencing a new and strange world hitherto hidden from us. It was more like Captain Cook than Albert Einstein. In fact, it was more like Captain Kirk than Captain Cook.

So now I have to wind down but life doesn't have to give me much more.

Thank you, gods and titans."

Robo doc does the rounds

Imperial and St Mary's NHS Trust are piloting a scheme where medical robots will cover ward rounds.

Remote presence (RP6) robots allow a medical expert to visually examine and communicate with a patient from anywhere in the world via the machine using wireless technology.

The robots, which staff have nicknamed Sister Mary and Dr Robbie, can also be used for surgical teaching and even videoconferencing. The robots are controlled with a joystick from the remote site. The doctor 'driving' the robot can view the patient, ask questions, read

patient records, and look at X-rays and test results from the console. The patient sees the doctor's image on the robot's screen or 'face'.

Although the robot does not physically examine the patient, it allows face-to-face contact between the doctor and patient, providing immediate access to specialists.

Parv Sains, project leader, Surgical Specialist Registrar and Research Fellow, said benefits include allowing patients direct access to experts worldwide and to the doctor who performed their surgery, even if they cannot be physically at the patient's bedside.

"If a specialist is at a conference in California but their medical opinion is needed for a St Mary's patient, or to deliver a lecture to junior doctors, the RP6 robot provides an instant and global link at any time of the day or night.

"Our robots will certainly never replace all doctors on ward rounds, but they are a communication tool which allows a doctor to have direct contact with their patient if they are unable to get to them. "If we look at a lot of the current strains on the NHS, many senior doctors with skills and knowledge are required to be in several places at once. The robot is a solution in potentially providing their expertise from a remote location and may be a significant step for patient care."

The robots are being trialled in a general surgery ward and the A&E department at St Mary's Hospital, with training at Imperial's Academic and Clinical Skills Unit. This is the only UK location and one of just a handful of sites in the world: there is one other in Europe and three in the USA.

The RP6 robots are the latest strand in the pioneering integration of robots into healthcare by Professor Sir Ara Darzi, head of Imperial's Division of Surgery, Anaesthetics and Intensive Care, and a practising surgeon at St Mary's.

He said: "This is a revolutionary concept which opens new avenues for telemedicine research and integrates technology with healthcare at a grass roots level, increasing the interface between patients, clinicians and teaching staff."

As part of the pilot, a study is evaluating how patients respond to the robots, specific communications skills required for remote presence teleconsultation, and potential applications of the technology in clinical healthcare delivery and training.



DAVID GORME/EMERSON

research under the supervision of Professor David Edgerton.

Pioneering Sussex surgeon Archibald McIndoe treated the men in the Guinea Pig Club, mostly airmen with horrendous burns at a time when plastic surgery was in its infancy. His patients called themselves the 'Guinea Pigs' because of the experimental nature of their treatment.

Dr Mayhew based her history of science PhD on the Guinea Pigs after growing up with their story. Her grandmother was one of the nurses who cared for the injured men. From October, she will be part of Imperial's

new Master's programme in creative non-fiction writing.

Creative mentorship rewarded One of science's least recognised skills has been acknowledged for the first time as two awards for mentoring in science were announced in March. Tom Kibble, Imperial Professor of Physics and Innes Cuthill, Professor of Behavioural Ecology at Bristol University are the first recipients of this prestigious prize.

Nature and NESTA (the National Endowment for Science, Technology and the Arts) set out to find examples

of outstandingly good management in UK labs – in particular the way lab heads empower their students.

Five distinguished researchers nominated Professor Kibble for the lifetime achievement award. They mentioned qualities including his approachability, an ability to listen to others and give constructive opinion, and the skill of working with students to foster the confidence to reformulate ideas into sensible avenues of pursuit.

Tanaka calls for supermarket change Researchers from Tanaka have found that older people who

rely on home shopping services could be left out of the online shopping revolution as councils struggle to introduce technology-based alternatives.

The report by Professor James Barlow, Tanaka Business School, and Dr Mary Breeze, Dolphin Society/Bristol City Council, looked at the problems of replacing costly and complex council home shopping services with new approaches based on the use of the internet.

Professor Barlow said: "Most people today wouldn't think twice about using the internet for a range of

Students continue to impress at Internship Centre

The Internship Centre, run by the City and Guilds College Union, has gone from strength to strength in the past five years, providing vital job experience for students in the Faculty of Engineering. The Centre, which is run entirely by student volunteers, acts as a central resource to help students find summer placements relevant to their degree programs.

In addition, the Centre organises career presentations by a range of employers and has developed an internet database of employer details. Their annual Internship Fair also provides an excellent opportunity for students to meet recruiters and organisations offering a variety of summer placements and graduate careers.

In 2004 the Internship Fair was held in the College's new main entrance and attracted over 1,500 students and lots of high profile employers.

Following on from that success, the Internship Centre has undergone a recent transformation and will be re-launched this summer as the Engineering Union's Careers Service. New facilities include an improved website which you can see at www.cgcu.net/internships.

This year's Internship Fair will be held in October in conjunction with the Careers Advisory Service, the Faculty of Engineering and the Engineering Chapter Alumni Networking Event.

If you would like to attend the Fair, be added to the Internship Centre database or are interested in giving a careers presentation for engineering students, please contact Anne Windberg Baarup, Internship Centre Coordinator, at internships@cgcu.net.

Golden anniversary for Wolfson Foundation

When the Wolfson Foundation celebrates its 50th anniversary in July 2005, it will be commemorating half a century of providing support for scientific and medical research. Through a commemorative publication and a series of events, including a dinner hosted by the Royal Society on behalf of British universities and the scientific community, the Foundation will be looking back at how it has helped to address the needs of society through scientific and medical research since its creation in 1955.

Imperial College London has enjoyed a privileged association with the Wolfson Foundation for almost the entirety of this period. The Foundation made its first grant to the College in 1959 towards a

new biochemistry laboratory and equipment. In the intervening years, many projects at the College have been made possible through the Foundation's support, embodying the common goals of the two organisations.

Most recently the Foundation has provided grants to major projects at Imperial including support towards the refurbishment of the Department of Biochemistry, and the construction of the Wolfson Genetic Therapies Centre, as well as a grant towards the Wolfson and Weston Research Centre for Family Health at the Hammersmith campus, which facilitates improved clinical treatment of human reproductive and neonatal disorders.

The Wolfson Foundation also generously contributed funds to the creation of the Wolfson Surgical Technical Laboratory in 2002. This facility enables collaborative work in the areas of surgical simulation and robotics, imaging, patient safety and the teaching of new surgical technical courses. In particular, the laboratories provide a unique environment where surgeons can practice the latest surgical techniques before transferring them to the operating theatre.

More recently, the College has been fortunate to count the Wolfson Foundation as a donor towards the Centre for Brain and Musculoskeletal Repair, a current major project for Imperial which will enable research into the mechanisms of debilitating neurological and rheumatic disorders.

Imperial College is grateful for all of the support provided to its projects by the Wolfson Foundation and wishes them very best wishes for their 50th anniversary celebrations.

Alumni Weekend 2005

We are sorry to inform readers that the Office of Alumni and Development has cancelled the Imperial College Association Alumni Weekend planned for 9 and 10 July 2005. This difficult decision was taken in light of a mixed and rather limited response from the alumni base to the Weekend.

In investigating why sign-up for the Weekend was not as far-reaching as we would have hoped, overriding feedback was that although the Weekend event programme sounded strong, alumni were more interested in focused reunion events. Based on this and other input we have received, the Office of Alumni and Development will be looking closely at its events strategy to develop a programme better attuned to alumni needs.

We would like to take this opportunity to thank those who did book for your continued interest in the life and work of Imperial. We hope that you will consider attending future alumni events at the College and look forward to seeing you in the future.

>> NEWS IN BRIEF >> NEWS IN BRIEF >> NEWS IN BRIEF >> NEWS IN BRIEF >> NEWS IN BRIEF >> NEWS IN BRIEF >> NEWS IN BRIEF >> NEWS IN BRIEF >> NEWS IN BRIEF >> NEWS IN BRIEF >>

shopping activities, but many older people are unable to do so – not necessarily because they don't have access to a computer, don't know how to use one or don't trust the internet. The big problem is many don't have a card they can use to pay for goods online. Overcoming this will require collaboration between the banks, the supermarkets and local councils, and there is no sign of this happening."

Professor Barlow explained that the problem is worsening as the number of older people living independently increases, and social services struggle to support them: "Some councils have

responded by trying out internet and phone shopping schemes – but much more needs to be done. The government is introducing initiatives to combat this 'digital divide', including public access points and wired up communities, but these initiatives do not overcome the mobility issues that prevent some people from shopping in the first place."

Planning permission granted for new halls Westminster City Council have agreed to pass to the Deputy Prime Minister unopposed, Imperial's application for planning

permission to build two new student halls of residence, on the south and east sides of Prince's Gardens in South Kensington.

The two new buildings will provide six halls of residence with a mix of accommodation types, catering for different student needs and budgets. The halls will replace the existing Southside building and, when sufficient funds are made available, Linstead Hall. Both of these have suffered ongoing deterioration since being built 40 years ago.

The new building plans have been specifically drawn up to complement

existing architecture in the area. The new buildings will be the same light colour and height as the surrounding 1850s terraces, and therefore lower than the existing buildings.

The planned accompanying restoration of the Prince's Gardens square will recapture the spirit of the original gardens, with new London plane trees being planted in open grassland and full restoration of the original railings and central urn.

It is hoped that demolition of the Southside building can start this summer, with the new hall being ready for occupation in autumn 2007.

PROFESSOR MICHAEL DUFF IS THE NEW PRINCIPAL OF THE FACULTY OF PHYSICAL SCIENCES.

New principal for Faculty of Physical Sciences



DAVID GRAEME BAKER

BY ALEX PLATT

What is your professional background?

This is a welcome return to Imperial for me. I gained my PhD in theoretical physics here in 1972 under Nobel Laureate Abdus Salam. I returned to Imperial as a member of the academic staff in 1979, taking leave of absence to visit the Theory Division at CERN, first in 1982 and then again from 1984 to 1987 when I became Senior Physicist. I took up a professorship at Texas A&M University in 1988 and was appointed Distinguished Professor in 1992. In 1999 I became Oskar Klein Professor of Physics at the University of Michigan and was elected to serve as first Director of the Michigan Center for Theoretical Physics 2000-05.

What are some of the things you'd like to achieve now you are settled in?

The faculty is made up of the Departments of Chemistry, Maths, Physics and History of Science, Technology and Medicine; each recognised worldwide for its excellence. In this respect I join the Faculty in a great position. With no radical changes needed, my main goal is to maintain our high standards and to ensure the provision of the finances to do this. When you are performing at a level so close to the pinnacle of excellence, it's much easier to go down than that little way further up. Our challenge is to maintain what we're doing and to do it in the most efficient way possible.

What inspires you about Imperial?

Quite simply, it is the fact that the College is one of the best in its field. I join in exciting times, many things are happening and I'm happy to be a part of it. For example, we have just launched the new interdisciplinary Institute for Mathematical Sciences.

What do you consider to be the biggest challenge facing you at Imperial?

Well, as you'll see from my background, I have a history here and very fond memories from my time as a PhD student. I left the UK in

a time when funding, salaries and morale were all very low in the higher education sector, but I always had a pipe dream to return and was delighted when I was offered the post here. My background is primarily based in academia so the challenge for me is making a success of this type of administrative role. I welcome the new challenges and direction at this time in my career. I do have the chance to research here with my physics Professor hat on, but have yet to find the time to fit it all in! Another challenge for the College, unusual in British university life for its provision of mainly science courses, is that we need to maintain diversity in our students and faculty.

What challenges do you feel face higher education as a whole?

Despite Imperial being one of the best Colleges of its type in the world, we still face serious competition with those in the USA. I believe, as unpopular as this may be with some people, that we need to consider American funding methods to compete. With scholarships and bursary schemes, those with the talent can get to study whatever their backgrounds.

How do you envisage maintaining a relationship with our graduates?

Strong relationships with our graduates are of utmost importance. It's fantastic to keep those who invested some of their lives into the College informed, but also, from a more pragmatic point of view, we welcome the support that alumni donations bring. It's important to communicate the many positive things coming from Imperial.

What was the last book you read?

I'm currently reading Ian McEwan's latest novel called *Saturday*. It chronicles a day in the life of a successful neurosurgeon when everything he takes for granted is suddenly called into question. I'm only half way through so I can't tell you how it ends....

DAVID BEGG, PRINCIPAL OF IMPERIAL'S TANAKA BUSINESS SCHOOL, HAS JUST CELEBRATED TWO YEARS IN POST. HERE HE DISCUSSES HIS VISION FOR THE FUTURE AND WHAT HE HAS ACHIEVED SO FAR.

The business of science ... the science of business



JAN CHLEBIK

BY ALEX PLATT

What brought you to Imperial?

Being Principal of Tanaka Business School, while Richard Sykes is Rector, was the chance of a lifetime. Imperial is a worldwide brand. Once I knew Richard aimed to create the business school that Imperial ought to have, I wanted the job.

What did you see as your biggest challenge when you started here?

Strategically, Imperial needs a business school that will add to the value of the Imperial brand worldwide. For this, we had to match the Imperial standard, focus on Imperial strengths, be embraced by the rest of the College, and become an asset in forging Imperial's external relationships. When I arrived, the Business School was over the road, and viewed by Imperial with some scepticism. And if Imperial was lukewarm, the outside world could scarcely be expected to enthuse.

During the last two years, we have taken steps to meet all of these goals. Not only is Tanaka now physically the portal to Imperial, we are collaborating more and more with the other faculties, both in research and teaching. Externally, major companies take us seriously and we have leapt up the world rankings for business schools.

So, what was the hardest part about making this come about?

We repositioned Tanaka, focusing much more tightly on Imperial strengths, integrating science and business. For example, all of our MBA students carry out a technology venture project, a feasibility study on a piece of Imperial intellectual property – an idea trying to become a spin out company. This leverages Imperial to maximum effect. We also restructured the Business School faculty. We created opportunities to bring in top academics and build up areas where we intend to be strong by releasing posts that fitted the Imperial brand less well. Ultimately, we've changed what we do, and how we deliver it.

Where do we go next?

One exciting thing at the moment is our new MSc Management course, proving hugely popular with over 500 applicants since January, allowing undergraduates with a technical background to

go straight into management education before seeking a job. Top employers think this is a powerful combination.

We also want to offer lifelong learning to all Imperial students, for whom graduation should not be the end but merely the beginning of the next phase. Imperial alumni need to belong to a high quality network, and regularly receive valuable updates in the fast moving knowledge economy. Electronic delivery will be part of how we service alumni all over the world and ensure they retain a competitive edge for the rest of their lives.

In research, we are building global excellence in the areas of finance, risk management, healthcare management, innovation and entrepreneurship. We are also aiming to start a centre for intellectual property that will conduct research on how to create, defend, and exploit business opportunities.

So what does Imperial need to do to remain in this strong position?

Globally, we are competing with universities with billions of dollars of endowment. We can't take it for granted that British students will go to British universities. American universities are opening programmes in London. We must keep improving academically, and to finance this we must use all our resources wisely and productively. Tanaka Business School needs to be an asset to Imperial as it strives to meet that challenge.

What or who inspires you?

I get satisfaction from doing the right things for the right reasons, and from offering quality services that leave all parties better off. That is also the best way to build productive long-term relationships.

When you're not working, how do you relax?

I enjoy music and sport, gardening and cooking. We also have a house on a Greek island, which I no longer get to visit often enough, but during August I find the tensions of the year evaporating in the sun, and the waistline inches put on in the service of Imperial gradually worked off again by swimming across the bay....

features



- 10 energy_how Imperial is addressing global issues
- 14 an Antarctic challenge_a record breaking attempt to reach the Pole
- 16 my moment of glory_a sporting triumph remembered
- 17 future success in fundraising_Development Advisory Board alumni members
- 20 engineering design_an enhanced collaboration with the RCA
- 21 the good life_four alumni make a success of innovative design

BY ALEX PLATT AND NATALIE EASSON

Energy



JAN CHLUBIK

INTRODUCTION BY DEPUTY RECTOR, PROFESSOR LESZEK BORYSIEWICZ

EVERYTHING WE WANT TO ACHIEVE NEEDS AN ENERGY SOURCE AND WHERE WE ARE GOING TO GENERATE THAT ENERGY IS FAST BECOMING A CRITICAL QUESTION FACING THE WORLD TODAY. WITH THIS MIND, IMPERIAL HAS RECOGNISED ENERGY AS AN ACADEMIC PRIORITY, AND WE ARE TAKING THE LEAD IN SEVERAL AREAS OF THIS TOPICAL DEBATE.

MANY IMPERIAL ACADEMICS ACROSS EACH OF OUR FACULTIES are involved in researching current and potential sources of energy. Where can we find new energy sources using natural and sustainable materials? How can we implement cleaner energy systems to minimise the risks of global warming? How do we best use nuclear energy and dispose of its waste safely? And how we can encourage and implement sustainable and efficient use of energy in day-to-day life? But of course this list is by no means exhaustive or confined to the College campuses. We collaborate widely with external bodies such as the Carbon Trust, and other government and regulatory bodies related to the provision and use of energy.

The success of the several spin-out companies specialising in the field of energy shows that we are committed to finding functional solutions that can be implemented, perhaps most noticeably through Ceres Power which specialises in fuel cell technology and was floated on London's Alternative Investment Market in 2004.

Our pioneering College-wide *Energy Futures* initiative is bringing scientific engineering and medical expertise together. Our commitment to the cause is further exemplified by the recently established National Energy Research Centre at Imperial's South Kensington campus and our hosting of the first ever Energy Roundtable back in February 2005, headed by the College's Research Director for the Energy and Environment Office, Dr Tariq Ali, to discuss challenges and opportunities as energy systems change.

Global warming

The threat of global warming and, more importantly, how to reduce its risk is one of rapidly growing significance. The Kyoto protocol has already set targets for countries to reduce their emissions by 2012 but many scientists are urging that deeper cuts need to be made by countries with the largest emissions of harmful gases, including the United Kingdom, to stabilise atmospheric carbon dioxide (CO₂) and reduce the risk of climate change reaching dangerous levels.

CARBON CAPTURE

Dr Jon Gibbins (Mechanical Engineering) is working to develop methods for capturing CO₂ before it is emitted from power plant chimneys. This could be used soon in the UK, but the main application is in fast-developing economies such as China and India. CO₂ capture is not an option for power plants in these countries now but, provided some simple and essentially zero cost changes are made to the basic plant designs, it should be possible to add it at a later date. Dr Gibbins is also coordinating the UK Carbon Capture and Storage Consortium, a group of 15 universities and research institutes funded by the Research Council's 'Towards a Sustainable Energy Economy' programme.

STORING CO₂

Professor Martin Blunt (Earth Science and Engineering) is studying issues surrounding the long-term storage of CO₂. When injected into sealed geological 'traps' deep underground, the high pressure environment helps the CO₂ to form a liquid-like phase. Over a period of hundreds of thousands of years, this liquid CO₂ will slowly dissolve in the water present in the pores of the rock and also react with the rock itself to form solid carbonates.

CO₂ may be injected into old North Sea oil and gas reservoirs for extra production – offsetting the cost of CO₂ capture and storage. Britain is in a particularly good position to benefit from geological storage of CO₂, provided we act fairly quickly before the existing infrastructure is removed.

With enough underground storage capacity worldwide to hold a significant part, and possibly even all, of the CO₂ produced from available fossil fuels, this method of carbon storage could considerably reduce the amount of CO₂ emissions globally.

CLIMATE CHANGE

Professor Michael Grubb (Life Sciences) is a leading international researcher on policy responses to climate change and aspects of limiting greenhouse emissions. He is a member of the Imperial College Centre for Energy Policy and Technology (ICCEPT) which is dedicated to understanding how improved energy efficiency and technologies can combine global growth with environmental protection, and the international political processes that can create incentives for their adoption.

Professor Grubb focuses upon the economics of innovation and investment in low carbon technologies, energy efficiency economics and policy, and the international politics of negotiating solutions to climate change including the progress of the Kyoto protocol and negotiations on future options.

IMPERIAL STIMULATES POLICY DEBATE

A large portion of harmful greenhouse gas emissions (GHGs) are produced by the generation of energy and some electricity generation plants produce more GHGs than others. Combined cycle gas turbines, for example, generally produce less GHG emissions than coal-fired power stations with nuclear power stations and wind farms producing no direct GHGs at all.

It is also apparent that the GHG emissions reduction achieved by reducing electricity demand at a particular moment depends on which type of generation plant responds to that change in demand.

When policy and regulation is being formulated, it is important to consider which plant will respond to the measures and why. It is also important to consider the longer-term implications, such as what types of plant will or will not be built in the future in view of actions taken today.

ICCEPT is researching these phenomena in an attempt to gain an understanding of the complex interactions inherent in the problem, and to help inform policy debate in the area.

Nuclear energy

Nuclear power produces enormous amounts of energy through the fission of uranium atoms. Supporters of nuclear energy believe that it is preferable to the use of fossil fuels as it is cheaper, more sustainable – with some reactors likely to last for hundreds of years – and does not emit CO₂ gases into the atmosphere.

IS NUCLEAR POWER SAFE?

Safety is a key element of sustainability arguments for the future use of nuclear power. A group of Imperial academics, led by Dr Chris Pain (Earth Science and Engineering) has been sponsored by the UK Nuclear Installations Inspectorate for almost a decade to study the safety of nuclear criticality – that is, to ensure that large quantities of fissile materials (uranium and plutonium) do not accumulate, potentially leading to extensive radiation damage.

The need to understand and so prevent unwanted criticality of nuclear materials extends to future generations of nuclear reactors, specifically in how their fuel is handled and transferred to waste repositories. Dr Pain's group has developed computer-based models which link together nuclear, fluid flow and structural effects, using detailed models of the processes involved.

STORING NUCLEAR WASTE

Professor Robin Grimes (Materials) is involved with research into storing nuclear waste. He explains: "There are many types of nuclear waste and ways in which it can be contained. However only a limited number of materials are capable of encapsulating high levels of radiation." Professor Grimes is hoping to develop methods that will predict why some materials can contain radiation better than others using atomic level computer simulation and novel molecular dynamics techniques.

CONTROLLED FUSION

Nuclear fusion, which leaves minimal waste, is the next generation of nuclear power after fission. The Plasma Physics Group undertakes research in both inertial confinement fusion and magnetic confinement, the latter in cooperation with the Joint European Torus project at the UK Atomic Energy Authority's Culham Laboratory.

In inertial fusion, through use of the Vulcan laser at Rutherford-Appleton Laboratory, Imperial is the leading laboratory exploring fast ignition with the petwatt laser.

At the College itself, in collaboration and with the support of Sandia National Laboratories and the US Department of Energy, our 2.4MV, 1.5 MA pulsed power generator explores the physics of wire-array Z-pinches, the most powerful and efficient sources of the soft X-rays which are used extensively in indirect drive inertial confinement fusion.

KEEPING THE NUCLEAR OPTION OPEN (KNNO)

KNNO, a major initiative with which Imperial is involved, was launched early 2004 to establish a four-part work package of research which will contribute to the UK's option for nuclear electricity generation. KNNO will be a multidisciplinary consortium programme, based at Imperial and led by Professor Grimes.

Dr Simon Walker (Mechanical Engineering) is leading work package one. He says: "Nuclear power can provide a safe, environmentally benign and very economical means to generate electricity. It is crucial that the UK retains its strong capability in

science and engineering in this area." The Imperial-led KNNO programme is a very significant contribution to this and a fitting reflection of the nuclear power related research and teaching spread widely throughout the College.

Imperial is also host to the UK's sole civilian nuclear research reactor. Based at the Silwood Park campus, the reactor provides courses for other universities and government departments as well as strategic services supporting nearly a fifth of UK electricity generation. Other activities around the reactor include pharmaceutical trials through to the assessment of food contaminants.

Sustainable new energy sources

In the light of global issues such as the Kyoto treaty surrounding the future of energy provision and use, the development of new energy sources that are cost effective, renewable and sustainable is vitally important.

MICRO POWER STATIONS FOR THE RESIDENTIAL SECTOR

Early versions of the type of technology which could potentially create a power station that could be housed in a kitchen cupboard – primarily based around Stirling engines and gas engines – are already becoming available on the market. They are virtually silent, compact, reliable and, perhaps above all, good for the environment.

Cutting edge technology such as a solid oxide fuel cell-based systems are not far behind. Modelling work at ICCEPT has shown that micro combined heat and power (micro-CHP) systems, when combined with thermal energy storage, can save the average UK household more than £100 per year, whilst simultaneously almost halving global warming gas emissions.

Not only is this a desirable objective, in terms of government aspirations for emissions reductions, it also can potentially provide social policy goals such as more reliable heat and power to households through less reliance on grid electricity. ICCEPT is also investigating the scales, applications, pathways to market, and justification for investment in these technologies.

PHOTOVOLTAICS

Photovoltaic technology makes use of the abundant energy in the sun, converting light energy into electrical energy. It has little impact on our environment and can be used in a wide range of products, from small consumer items to large commercial solar electric systems.

Molecular and polymer photovoltaic devices are at a key stage in their development and the next five years will be fundamental to establishing the viability of this potential. At present no front runner is clear (at least for solid state devices), but progress is likely to enable one or two device concepts to take the lead, and indeed establish the extent to which such devices can compete against inorganic photovoltaics technologies.

Imperial is collaborating widely with industry, including companies such as BP, MERCK and Konarka, in the area of molecular photovoltaic research, producing the largest combined effort in Europe and possibly the world. Additionally, the Department of Physics houses one of the broadest and largest academic programmes in molecular and polymer-based photovoltaics within Europe.

Also related to this area is SolarStructure, a spin-out company that is looking to develop building integrated concentrator photovoltaics in the glass facades of commercial buildings and schools through collaboration with a leading multi national market leader in prestige office building.

SPIN-OUT SUCCESS

Imperial Innovations Ltd has helped to spin-out companies that are working to provide new energy sources.

HydroVenturi Ltd

HydroVenturi Ltd is a renewable energy and hydro services company, which has developed an innovative patented technology that can be used to extract energy cost effectively from tidal streams and rivers, remediate moving water, and desalinate water, with minimal impact on the environment.

www.hydroventuri.com

Ceres Power

Ceres Power was established to develop and commercialise novel intermediate temperature solid oxide fuel cells (ITSOFCs) for a wide range of applications. This stems from work carried out in the Department of Materials where high performance materials for metal supported ITSOFCs operating at temperatures in the range of 500-600°C have been developed, providing a considerable drop in the operating temperature to conventional SOFCs which require temperatures near to 1,000°C.

Ceres Power was the 2005 winner of the Gold Medal from the Institute of Materials, Minerals and Mining for its 'significant contribution to the industrial application of materials'.

www.cerespower.com

Turbo Genset Inc

Turbo Genset Inc has initiated commercialisation of the technology it developed in relation to low weight, small size, high speed permanent-magnet machine systems for power generation, transportation and industrial applications. The machine systems' applications include mobile power generation, distributed power, standby power and hybrid turbochargers for medium to large diesel engines for trucks and locomotives. The technology also has a promising future for use in hybrid vehicle power trains.

www.turbogenset.com

LOW CARBON INCUBATOR PROGRAMME

A funding contract has been awarded to Imperial Innovations Ltd as part of the Carbon Trust's £2.7m low carbon incubator programme. Innovations was selected from among 32 applicants, together with LIFE-IC in Sheffield and Angle Technology Limited in Surrey. Its portfolio of more than 60 spin-out companies created in the last six years include seven that are based on low carbon technology, including Ceres Power, STS and HydroVenturi.

All three incubators, sometimes known as business accelerators, specialise in low carbon technology and provide a range of business skills to assist technology developers commercialise their research work and build their businesses. Each will work to bring early stage, low carbon technologies to the market place, providing up to £60,000 of advisory support per qualified start-up company.

Brian Graves, head of the physical sciences and engineering team at Imperial Innovations, commented: "We are very pleased to have received this Carbon Trust incubation contract. Not only does it recognise our track record in inventing and commercialising low carbon technology, it also provides us with the resource to enlarge and accelerate activity in this area."

Energy use

WORLDWIDE

The first *Energy Futures* seminar, held at Imperial in May 2005, focused on how global energy demand could be satisfied in a sustainable way. The topic was addressed by a range of speakers from Imperial and Shell. Professor Nigel Brandon, who holds the Shell Chair in Sustainable Development in Energy and Chair of *Energy Futures*, said: "The *Energy Futures* programme is an exciting opportunity to bring the unique range of expertise available at Imperial College to bear on this very important issue."

ON SITE

The environment is very much on the agenda for the College. Following extensive workshop activity between academics, students and the estates division, the College will implement an updated energy policy. Since 2001, when a policy was first put in place, our energy demand has risen due to large scale capital investment, utility prices have escalated sharply and new legislation has been brought in to help the UK achieve targets for controlling carbon emissions.

Adoption of the policy, which occurred in the same week that the Kyoto targets were formally adopted by the UK, is timely as Imperial continues to develop academic priorities in the fields of energy and environment.

The new energy policy will serve as a cornerstone of an environmental policy, which is to be brought forward for approval later in the year. A gap analysis of present environmental actions has been completed to inform the new policy, which will address issues of building sustainability, waste management, and recycling. Based on workshops, it will promote adoption of a College-wide environmental management system, bringing measurable benefit from new and existing initiatives.

Energy and medicine

Imperial scientists have discovered the bacteria which causes meningitis needs sources of energy in the body such as lactate and glucose to survive and spread round the body. Dr Chris Tang (Infectious Diseases), who led the research, said, "This discovery goes to show that even bacteria needs to eat healthily in order to effectively do its job."

Solar energy conversion

Professor James Barber was made a Fellow of the Royal Society in June for elucidating the structure of the water splitting complex from plants, the single most important solar energy conversion process on the planet, responsible for all oxygen in the atmosphere and most of the Earth's terrestrial biomass.

feature

An Antarctic challenge

BY LIZ GREGSON AND NATALIE EASSON

IN 1912, TOWARDS THE END OF THE SOUTH POLE EXPEDITION which eventually took the lives of Robert Falcon Scott and the brave men who accompanied him, Scott recorded: 'Had we lived, I should have had a tale to tell of the hardihood, endurance and courage of my companions which would have stirred the heart of every Englishman.' Instead, he continued: 'these rough notes and our dead bodies must tell the tale.'

Since then, these courageous and raw sentiments have undoubtedly stirred men and women to brave the journey to the South Pole in spite of, or perhaps because of, the sheer challenge and uncertainty involved. This summer, final year students David Ward and Adam Rumley, Department of Physics, will be preparing for an attempt to become the youngest unsupported team to reach the South Pole.

Adam and David are no strangers to the world of expeditions. In 2004, they became two of the youngest people to make an unsupported crossing of Greenland. Between them, they have a wealth of skills in polar travel, mountaineering, ice climbing and trekking, as well as an exceptionally strong team relationship. David, who will lead the expedition, is under no illusions that this will be the hardest challenge he has faced to date, something that has been recognised by the Winston Churchill Memorial Trust, who have made him a Churchill Fellow and provided financial support to the expedition.

The pair are also recipients of the 2005 Exploration Board Award and their official patrons for the expedition are Sir Richard Sykes and Professor Robert Schroter. Professor Schroter is sure that the endeavour will prove more than a physical challenge for David and Adam. "This impressive challenge has grown out of David's and Adam's previous expeditions to Greenland, where they both came to love the polar regions whilst respecting the tremendous difficulties of travel there.

"After making a successful crossing of the Greenland ice cap

in 2004, they have been simply impelled to journey to the South Pole. Whatever records may be set by them on completion of their arduous trek, the most important outcome for each of them will be their inner personal journeys of increased self awareness, competence and leadership."

David and Adam plan to ski over 1,100km, completely unsupported, in some of the most inhospitable conditions on the planet. Starting at the edge of the Antarctic continent, they will haul two-metre long 120kg sledges, containing enough food, fuel and equipment to last the entire journey, an expected 50 days. There will be no resupplies, no kites, no corner cutting.

They will begin the challenge at the end of October 2005, flying from London to Punta Arenas, the southernmost city in South America. After a few weeks reorganising shipped out equipment and liaising with their logistics team, they will fly to Antarctica in a chartered Hercules, landing on a blue ice runway at Patriot Hills. After final preparations they will fly to their start point, Hercules Inlet, at the edge of the Antarctic continent.

Asked to describe how he imagines the journey will develop, David said: "During the first few days we will ski the steepest section back towards Patriot Hills, climbing almost 700m. With full sledges and unaccustomed bodies, we anticipate that this is going to be the hardest section.

"As we move onwards to the first plateau, the skiing becomes easier but temperatures will begin to plummet. Midway to the Pole, the Trans-Antarctic mountain range will come into view, a welcome change from the flat white landscape of previous weeks.

"Then the battle of the second major climb begins, and exhaustion and our fight with altitude starts to set in. Finally, as we reach the South Pole plateau, unimaginable winds and lethal temperatures, perhaps reaching -55°C , will hit us. Eventually, we will spot the shadow of the South Pole, and a few excruciating days later, the South Pole itself!"





feature

Asked about the motivating factors behind the challenge that he has set himself, David explained: "To us, this is more than just another record attempt. This is a journey of development, a true show of drive and commitment and most importantly, a realisation of a dream."

David and Adam plan to communicate their journey to the outside world via a dedicated website where they will post daily dispatches, photos, and audio and video clips. The site will also track the exact position of the team, along with information such as temperature and wind speed, and will include an automatic email facility, updating subscribers on daily progress. Please visit www.antarctic-challenge.org for more information.

Tied in with the expedition, David and Adam have planned an education programme encompassing both schools and universities, including online resources for classroom teaching throughout the expedition, and inspirational talks afterwards. The pair hope the motivational messages that their plans evoke will inspire young people about the importance of following a dream. The programme will also provide education in general about the fragility of the Antarctic environment and its importance in the context of scientific investigation.

If the way that David has thrown himself into the world of negotiations, formal dinners and meetings in order to gain financial backing for the expedition is anything to go by, we can be confident that, come October, the pair will succeed in their goal to reach the Pole. We wish them good fortune and look forward to catching up with them when they return.

For further information about the Antarctic Challenge please email david.ward@imperial.ac.uk.

David and Adam follow a long line of intrepid Imperial explorers. We talked to some of them about the enduring memories of their own expeditions.

Dr Nigel Fitzpatrick (Materials 1965, PhD 1968) went in search of the 'Jewel of the Nile' in July 1965. The 'Jewel' was in fact a century old rusty barrel of a percussion drum found by a tribe in Northern Uganda. Nigel's expedition team intended to search the area in advance of a full archaeological dig and Nigel remembers the



effect that their presence had on the locals. "The locals were at first frightened by our appearance within the fortifications and mistook us for the ghosts of the former inhabitants." Undeterred, Nigel and his team went back to the same spot in 2004 to carry on their explorations and were relieved that their arrival was less of a surprise to the locals this time around.

In 1990, **Charlie English** (Electrical and Electronic Engineering 1990) and **Dr Philip Gribbon** (Physics 1990, MSc 1991, PhD Biological and Medical Systems 1995) decided to take up the challenge of running across the Karakoram Highway, North Pakistan. Charlie recounts: "Our trip to the Karakoram included and directly led to the other most exciting things I've ever done. I often think about the night we were taken on horseback by two highly intoxicated tribesmen to the Chinese police, where we were arrested for being where we weren't allowed. Everyone ought to be able to do these things!"

Dr Philip Wickens (Biology 1991, PhD 1995) led an expedition to Parmir in Tadjikistan to collect botanical specimens for the Natural History Museum in 1992, achieving five British mountaineering firsts in the process. Phillip and his team trained for the expedition to Parmir by, amongst other things, climbing trees in Hyde Park, presenting an unusual sight for early morning strollers.

Greg Yeoman (Environmental Technology 1989) is a seasoned traveller having cycled across Australia and part way over the Antarctic. It was, however, his Trans-Siberian journey in 1993 that conjures up some of Greg's fondest expedition memories. "It was a great opportunity to explore a country that had always been portrayed as a threatening and mysterious place. The truth, of course, was quite different, and the Russian people were some of the friendliest and most hospitable I've met anywhere. Rather than satisfying my curiosity about the world, the trip stimulated it, so every atlas is now a source of potential routes and reasons for exploration.

"Having completed such a tough trip (we cycled 8,304 miles in five months), I can put things in perspective and approach new challenges positively without being daunted. One of the best things about this and other trips I've completed is talking to people afterwards and seeing them inspired to tackle something themselves."



Jan Evetts (Chemistry 2000) journeyed to Slovenia with the Imperial College Caving Club in 1998. For him the preparation and team building aspects of the trip are the best bits. "It's the adventure: the planning and preparation, the coming together of people and equipment – all building the anticipation. On our arrival, there was an intense effort to set-up a deep camp underground and explore the remotest parts of the system, and map our discoveries. Altogether it was a great shared experience."

TUNU

I LAST PLAYED RUGGER AS A MEDICAL STUDENT IN LONDON IN the sixties. I was at the smallest school, Charing Cross Hospital Medical School, and I played for their bottom team, the thirds. Our scrum was a group of misfits, most of whom were blind because we couldn't afford contact lenses and had to take our glasses off. Those who weren't blind suffered from Adult Coordination Deficit Disorder.

As the bottom team we rarely fielded 15 players and often had to ask to borrow a player or two from the opposition. Our captain was a wing forward called Blod Weekes, who weighed about 45 kg. Our other wing, Spider Coleman, had amazingly thin arms and legs and was selected for his ability to recite all 42 verses of Eskimo Nell in the bar afterwards.

DR CHRIS ELLIS IS A FAMILY PHYSICIAN IN SOUTH AFRICA AND A PUBLISHED AUTHOR. THIS ARTICLE APPEARED IN HIS COLUMN IN THE NATAL WITNESS LAST YEAR AND WE HOPE THAT IT BRINGS BACK SOME NOSTALGIC MEMORIES OF MEDICAL SCHOOL LIFE IN THE SWINGING SIXTIES.

My moment of glory

BY CHRIS ELLIS (CHARING CROSS HOSPITAL MEDICAL SCHOOL 1967)

Usually playing in the rain and mud in the cold English winter, we slithered around and after 10 minutes everyone was covered in mud and it was difficult to tell who was on whose side. Consequently no one really wanted the ball because as soon as someone threw you the sodden slippery thing, all 29 players on the field descended on you so you immediately threw it up in the air and made a dive for cover. It must have been a nightmare to referee, although, thinking about it, I don't think we often had a referee.

One of our favourite matches was against a team called HMS Chrysanthemum, a team of Royal Naval Volunteers who we could nearly beat. HMS Chrysanthemum was a retired training frigate moored on the Thames at the Embankment. Consequently they did not have a home field and had to play all their matches as away fixtures. To make up for this they had a Wednesday evening once a month when they invited, to their mess, the teams that they had played the previous month.

Once you crossed the gangplank and were on board you were officially on a Royal Naval boat at sea and there was no duty on the drinks. Gin was fourpence a tot. To a medical student this was as near to heaven as you could get. I only went once. I was about 19 years of age at the time and was not used to drinking gin in such quantities. There was a lot of singing and then someone asked us to go into the boardroom for a movie. I sat down and they turned the lights out and I immediately went to sleep. I missed out on a blue movie and that is the nearest I have got to one ever since.

In our school or student days we have all had a moment of glory in rugby or sport, however small. It was when we actually caught the ball and fell over the line or accidentally stopped them getting a goal. My moment of glory started on a Friday night in the Lemon Tree in Covent Garden, which was the hospital pub. It was the sixties and we were all trying to live up to John Lennon's famous dictum that if you remembered the sixties then you weren't really there. In retrospect it seemed to be a decade of great optimism and innocence, although that may be a ubiquitous feeling of the youth of every decade. We all seemed to be on a high and this Friday night we were trying to get high on Watney's Red Barrel draught bitter.

So, in walks Charlie Burton, who was the rugby correspondent for the Irish Times. It doesn't really sound like a full time job, does it? And it wasn't. His main occupation was running a rugby team

called the Public School Wanderers. A friend, Dave John, who was also a member of the third team uncoordinaters, and I, were have a quiet pint when Charlie joined us and asked us if we would like to play in his team as he was two players short for the following day's game. We explained that it was September and the beginning of the season and we were both hopelessly unfit. He then cunningly offered to buy us a round of Watney's as he knew that we also suffered from Alcohol-Medical Student Mutual Attraction Syndrome. It must have been many free rounds of beer later that we had agreed to play because Dave and I found ourselves the next day, with crashing hangovers, at St Pancras Station at midday as arranged the previous night.

As we boarded the train, Dave casually asked Charlie which team we were playing and Charlie, equally casually, replied we were playing Cambridge University first team. It was their first match of the season and they would all be out to prove themselves. At this point, I decided to go off and be sick, safe in the knowledge that there was no way Dave and I could last even one half against their eighth team. It was with a reasonable amount of nausea, dizziness and fear that we got off the train in Cambridge.

Dave managed to stop me getting straight back on the next train to London and we were driven to the grounds, where, to my horror, people were sitting down in the stands. We were actually going to be watched as well as humiliated.

In our changing room we were given a shirt and I sat down, feeling miserable, to dress. It was then that I began to realise that the other members of our team were enormous and seemed very confident and fit. This was not like the Blod Weekes team of no hopers at all. I asked Charlie who they all were and it turned out that Dave and I were the only ones who were not either an international or a British Lion. There was a South African on the team called Tommy Bedford and also the English and Welsh captains.

It turned out to be the most wonderful game. I had not realised before that you could catch the ball and run forwards. I had spent my dubious rugby career trying to catch a ball thrown at your feet and then running backwards pursued by giants. In this game the giants were all on my side. They hadn't just come for the shower and the drinks afterwards. Our scrum actually moved forwards. It was the most exhilarating feeling. My moment of glory had arrived!

IMPERIAL MATTERS CAUGHT UP WITH THE FIVE FORMER STUDENTS TO ASK THEM ABOUT WHAT IMPERIAL COLLEGE AND THEIR MEMBERSHIP OF THE BOARD MEANS TO THEM...

Future success in fundraising

BY ALEX PLATT AND LIZ GREGSON

IN 2004, IMPERIAL COLLEGE ESTABLISHED A DEVELOPMENT Advisory Board to 'provide independent and objective guidance to the College's Development Office in the realisation of its goal to broaden philanthropic income to the College'. Individuals were invited to join the Board on the basis of their motivation and desire to support Imperial College, as advocates and enthusiastic communicators of our mission and vision in the wider community.

The Board is made up of senior, successful and influential individuals, who come from a wide variety of professional backgrounds and countries around the globe. Over the next few years, the personal commitment and active involvement of this group will help to shape the College's future success in fundraising. In particular, they will play an important guiding role in our future fundraising activities and, vitally, help to raise the profile and visibility of Imperial's development efforts.

The College is particularly proud to list five former students amongst its membership, individuals who have made a real difference to society and industry worldwide in a variety of different ways. We are sincerely grateful to these former students, who through their membership of the Board, have added to the existing demands of their active lives to advance the future their former university.

The alumni members of the Development Advisory Board are:



DR MICHAEL COWPLAND
Canada

Electrical Engineering 1964
President and CEO of ZIM Technologies International Inc



PROFESSOR SIR CHRISTOPHER EVANS OBE DSC
UK

Biology 1979
Founder and Chairman of Merlin Biosciences



MR CYRUS MISTRY
India

Civil Engineering 1990
Managing Director of Shapoorji Pallonji & Co Ltd, India



SIR RALPH ROBINS FRC FIC
UK

Mechanical Engineering 1955
Former Chairman of Rolls-Royce plc and Cable & Wireless plc



DR WINSTON WONG
Taiwan

Physics 1971, MSc 1972, PhD
Chemical Engineering 1976
President & CEO of Grace Semiconductor Manufacturing Corporation



Who or what had the biggest influence on you as a student at Imperial College?

MC: Top quality engineering education in the most stimulating and renowned location plus excellent tennis and football team competition against other colleges.

CE: Dr Peter Mantle and Professor Tony Atkinson, plus doing a 8-10 week laboratory project and discovering something new!

CM: Sumant Mulgaonkar, a visionary in the industrial effort in India, was a friend of the family. He was a former student and fellow of Imperial College and from my early teens, he motivated me to come to Imperial.

RR: The other students and living in halls.

WW: No doubt about it, it was Professor Felix Weinberg, my supervisor for my PhD. Professor Weinberg was incredibly kind to me, helped me get a scholarship as a student and invited me into his home to meet his wife and children. We have become lifetime friends and he remains my respected teacher. He not only taught me about combustion, but also about humanity.

Where did you learn to do the job that you do today?

MC: Working at Nortel (telecom) and Microsystems International (silicon chips).

CE: I think I showed all of the symptoms whilst at Imperial and the full entrepreneurial syndrome burst to life whilst studying in the USA.

CM: I am the third generation that has been involved in our construction company. During my days at Imperial I spent every holiday in India working in the company. I was thrown in the deep end and a lot of responsibility thrust on me. I grabbed it with both

hands and I believe responded positively. During our formal education knowledge is pushed at us. It is only once you have to perform in the commercial world that you develop the capability to extract knowledge from people and books.

RR: Tools provided by Imperial College and Columbia. Experience provided by Rolls-Royce. Inspiration provided by my predecessors.

WW: I'm not sure that it's something you learn. I am lucky that my education helped to lead me here. That's why I feel it's so important for me to contribute where I can.

What does the 'you' of the future look like?

MC: Excellent training in technology and governance, strong motivation and communication, large information handling capacity, good gut feel.

CE: Usually not very glamorous. They will definitely look younger because they will be encouraged from a younger age to embrace enterprise.

CM: The civil engineers of the future will be leaders, implementers, innovators and most of all they will truly be able to assess risk and manage it.

RR: They will be as dedicated as those of the past.

WW: I wish I had a crystal ball! I believe in fate and in God. I work very hard and believe that this is the way to achieve our purpose in life.

What was the last great idea you heard about?

MC: Taipei's mobile city project using wireless mesh networks to provide broadband to 90 per cent of the entire city by end of 2005. Great productivity enhancement for global competitiveness.

CE: About 20 minutes ago, a fantastic new product for...I think I'd better keep it under my hat for a month or so!

CM: An idea, which I am currently pursuing, which involves the creation of integrated work, leisure and residential environments in India that can give a quality of life to the inhabitants at price points which are unheard of.

RR: Underground gasification of coal.

WW: Well I'd like to say it was one of mine, but it isn't my place to say that! On a recent visit to the College I was encouraged by how many good ideas there are. I hope that they are given the chance to be put into practice.

What does your ideal day look like?

MC: Very active and interesting.

CE: Going fishing 7.00, breakfast on the terrace, shooting 10.00, personal trainer in gym 11.30, do big deal over lunch, rugby (Wales) at 3.30, down the pub all night.

CM: An ideal day is one in which I have a balance of time for action and reflection. I haven't had one for a long time!

RR: One of real achievement.

WW: My ideal day is one that builds memories, or helps bring them back as ultimately that's all we end up with. I recently visited Imperial College to celebrate a donation that I had made to the Institute of Biomedical Engineering. That was an ideal day; I met up with my respected teacher, Professor Weinberg, and spent time with the Rector; something I would never have dreamed of as a student!

How do you relax or spend your spare time?

MC: Family, friends, dogs, tennis, squash, music. Discovering!

CE: Mucking around with my kids, training, shooting, fishing, learning guitar, messing around with wine, books and fast cars.

CM: I love reading and playing golf.

RR: Race historic cars.

WW: I'm a complete bookworm and I relax by reading a whole range of things. I study religion, history and read novels. Business is very competitive and there really isn't much time to relax. Reading helps me to switch off.

What challenges does Imperial College face today?

MC: Getting its story out to all the potential partners and students and creating opportunities worldwide.

CE: Trying to be the number one science university on the world scene. Being in the UK means funding exciting initiatives will

always be harder for Imperial than its US counterparts.

CM: Imperial has to become more marketing oriented and refresh its brand. Especially in countries like India.

RR: Size and location – both good and bad.

WW: Imperial has lots of treasures. We need to try and make the College more commercial, some of these great ideas could be incredibly beneficial to society. The challenge is to develop them further.

Are you optimistic about the future of Imperial College?

MC: Yes! Oxford and Cambridge quality, plus the most central and impressive location can enable Imperial to become the world's top international university.

CE: Yes, very confident. Sir Richard Sykes does not like to lose and Imperial has all the ingredients to become one of the very best places on earth to do science.

CM: Under the leadership of Sir Richard Sykes I see a great deal of positive change and I am sure the future is very bright.

RR: Yes.

WW: I'm very optimistic. It seems the College not only has good ideas, but good management, professors and students. As part of the Development Advisory Board I hope we can go some way to offering guidance on fundraising activities and spreading the word about Imperial and its vision for the future.

What is the last book that you read?

MC: *The Da Vinci Code* by Dan Brown.

CE: *That Attitude Book* by Graham Pepper.

CM: *Winning* by Jack Welch.

RR: *Armageddon* by Max Hastings.

WW: *Mathematical Techniques in Finance* by Ales Cerny, who is a lecturer at Imperial. He links what I did in physics to finance and it's a very good book.

What three words best describe you?

MC: Intense, warm, playful.

CE: Resourceful, creative, streetwise.

CM: Analytical, tenacious, potentate.

RR: Apprehensive but persistent.

WW: Sincere, diligent, warm.



Engineering design

BY LIZ CARR AND CHARLOTTE STONE

A NEW INITIATIVE SEES IMPERIAL AND THE ROYAL COLLEGE OF Art (RCA) expand their relationship beyond the unique joint MA course in Industrial Design Engineering, launched in 1980, which brings together engineers and designers, providing them with the professional skills to make it as twenty-first century innovators.

Now the colleges have set up a formal collaboration where they will develop shared industrial contacts, promote opportunities for collaborative research, and set up funded 'triangle projects' combining scientific invention, commercial skills and user-centred design. This will foster an approach to research and innovation that delivers new value through the world class design and creative competence of the RCA, and Imperial's strengths in the technical, scientific, medical and business domains.

The collaboration was established as part of a £1.1 million award to the RCA from the UK Government's Higher Education Innovation Fund. Part of this award enables Imperial and the RCA to fund the co-development of a portfolio of products for licensing to industry by accessing RCA's user-centred design expertise, as well as its rapid prototyping service (RapidformRCA, funded by the London Development Agency).

One of the first areas to benefit from the collaboration is keyhole surgery. Dr Herbert Arnarsson, a surgeon at Imperial, has designed new laparoscopic devices. One acts as a 'stopper' during surgery and helps prevent damage to underlying tissue and organs. The other is a port cleaner which stops any blood, fluid or debris from obstructing the surgeon's view during an operation.

After filing for patents Imperial Innovations contacted InnovationRCA, a network giving business organisations access to the expertise of its graduates, for assistance with design and rapid prototyping.

Tony Hickson, Head of Medicine and Life Sciences, Imperial Innovations, explained: "Since graduate RCA industrial design engineers already had experience in the design of surgical instruments, this seemed the ideal way of matching innovative

ideas with design expertise at the highest level." The final design has been shortlisted for the Medical Futures Innovation Awards 2005, which will take place later in the year.

Imperial's Business Development team have now recruited John Cass (Industrial Design Engineering 1996), as a dedicated business development manager to facilitate this collaborative effort and to lead the development of engagement and research collaboration with creative industries in general.

He explained: "The potential benefits of combining great design with technology invention are enormous and the scope can be very broad. Designers and researchers think differently, work differently and have different objectives. By building a framework where the different cultures are understood, respected and can work together we are developing an environment which actively supports this collaborative approach. Our successful projects so far are a testimony to this approach."

Please contact John Cass on **+44 (0)20 7594 1041** or j.cass@imperial.ac.uk

Science, Business and Design

28 September 2005 evening event

Tanaka Business School, London Design Festival

As part of Imperial's first ever event within the London Design Festival, you will have the opportunity to hear about the latest research and new collaborations on the exciting boundaries between science, business and design. The event will feature talks from a range of inspiring thinkers culminating in a debate on how these different worlds can collaborate and learn from each other.

If you are interested in design, and how designers can work together with researchers, please join us – but book early as places are limited. To find out more please contact **+44 (0)20 7581 4949** or email design-festival@imperial.ac.uk.

The Good Life

BY LIZ GREGSON

IN THE FINAL YEAR OF THEIR STUDIES, INDUSTRIAL DESIGN Engineering graduates Simon Nicholls, Johannes Paul, James Tuthill and William Windham hit upon a cracking idea.

The four students came up with a design for an urban hen coop, aptly named the eglu. Following their graduation in 2003, the four set up their company, Omlet, took their design into production, and have been inundated with requests ever since. The eglu has clearly struck a chord with the general public, with their company website, www.omlet.co.uk, attracting attention from eager customers and the media alike.

Delivered direct to your door with a beginner's guide to raising hens, free installation and two organically reared chickens, the eglu promises to deliver a supply of eggs for all the family. In keeping with the environmentally friendly element of the company's offering, eglus are made in the UK and at the end of their life can be 100 per cent recycled.

The revival of the humble egg in the UK is widely accepted to stem from a 1998 TV programme, where TV chef Delia Smith famously instructed viewers on how to boil the perfect egg. It was calculated that an extra 1.3 million eggs were sold in Britain each day during the *How to Cook* series – 54 million eggs in total.

A more recent survey by market research company Mintel suggests that the consumption of eggs rose by eight per cent from 1999 to 2003. In the same period, sales of free range eggs by volume rose from 24 per cent to 30 per cent, representing a 38 per cent rise in sales overall.

Mintel's research forecasts an optimistic future for the eggs. The market is expected to continue growing by 1.3 per cent in volume terms with an even higher value growth



due to consumers trading up to premium organic brands.

On the back of this latter trend, Omlet have found a niche of environmentally conscious consumers who are willing to take the next step and become urban egg producers in their own right.

The company has positioned its offering as an easy and fun way to keep chickens that lay healthy, great tasting eggs.

Reports in the consumer sections of newspapers such as *The Times* and *The Independent* seem to concur, often extolling the contemporary feel of the coops which are produced in bright primary colours, and citing the amazingly yellow yolks of the eggs produced. Future plans for the company include an eglu that can hold up to four chickens, for customers who want to expand their Hocks, as well as eglus for rabbits and ducks.



Whatever your thoughts on Omlet and their eglus as a concept, there is no

denying that it is a great example of innovative design that works for everyday life. It is clear that people like Simon, Johannes, James and William now, and in the future, will provide huge benefit to the InnovationRCA project with their aptitude for user-centred design.

association



22	chapter news
25	international news
26	alumni focus
29	books
30	obituaries
33	honours

welcome to the Imperial College Association pages

On the following pages we are pleased to bring you news from the alumni groups in the UK and overseas and many more individual alumni who have been making the news.

The overriding theme for this issue's alumni focus is alumni reuniting, and we tell you about how the Interactive Alumni Services can help you keep in touch with your former classmates and friends on page 28.

Honours and awards have been coming in fast for alumni and staff of the College since the beginning of the year and there is a full listing on page 33.

The Royal School of Mines Association celebrate their ninth successive Bottle Match win over rivals Camborne on page 24, while on page 25 we celebrate the attempt of our alumni in France to reactivate their Association. Meanwhile, on page 26, we bring you news of how alumnus Dr James Barron has danced his way to success.

Read on to find out more...

Agricola Club

Future of Wye campus

The Agricola Club remains deeply concerned about the long term plans for Wye, the campus, its facilities and its staff. The one certainty is that agricultural sciences teaching and research have come to an end. Applicants for the business-related undergraduate courses for the forthcoming academic year are at an all time high, a very positive note in the current climate. But will this be sufficient to support the infrastructure of the campus long term? And what of the buildings, land and laboratories? Some sharing of facilities has started with Christ Church, Canterbury, but this is small scale at this stage.

The Future of Wye Campus group, headed up by Agricola Club President Tim Calcutt, continues to strive to offer support, help and ideas to the Imperial management.

Working with the students

The Club committee met a number of representatives of the student body for supper prior to the January committee meeting and the students then joined the committee meeting. We had a very constructive discussion and we hope that they will join us again in future. The aim of these discussions was to see to what extent the Club can further help current students on campus and, most importantly, to ensure that the Club continues to be attractive to current graduates. Consideration is being given to the name of the Club as it is essential that this continues to appeal to all students graduating from the Wye campus now and in future.

We are working on a number of initiatives to make the Club attractive to current students and recent graduates. These include assistance with careers, introductions, networking and work experience with which members of the Club are well placed to assist. We hope that a number of Club members will be able to assist in talking to students about various careers early in 2006.

We continue to offer current students and alumni our support through our part funding of Agricola Scholarships. In addition, the Club has most recently offered to assist the postgraduate association with the refurbishment of the Wheelroom/Hub, and the undergraduates with some sponsorship for the 2005 Commemoration Ball.

AGM and Dinner

The 2005 AGM and Dinner will be held on Saturday 24 September 2005. It is always an enjoyable reunion affair but on the more serious side, the Club Committee will be looking to elect a new Treasurer, Secretary and Journal Editor. This is not a mass walk-out; merely terms of office expiring. Some new blood would be welcomed!

The Wye Journal

The latest edition (Volume XVII, No 3) should be with you by the time you read this. This is 'leap' year as far as publication of the address list goes but please take the opportunity to update your details on the form provided. And take time to read some of the content; there are some interesting news snippets and successes, not least the number of books members have had published as well as one of our members being admitted to the Inner Magic Circle! Finally, if you have snippets of news, please send them in NOW!

Visit our website at www.imperial.ac.uk/wyecampus/friends/agricola.htm to read the latest Club activities.

Tanaka Business School Alumni Network

The last six months at the Tanaka Business School have been packed with events and new additions to the services provided to alumni.

In February the Tanaka alumni team held an event in partnership with Teach First. The event attracted around 130 alumni and current Tanaka and Teach First students who were treated to a talk entitled *Successful Entrepreneurship* by Caroline Plumb, Managing Director and co-founder of the research and recruitment company Freshminds (www.freshminds.co.uk). Caroline, who was shortlisted for Entrepreneur of the Future at the Growing Business Awards 2004, discussed how the 'rules' of successful entrepreneurship have

changed over the last 50 years. She asked the question ‘Are there certain qualities, ideas and competencies that are essentially timeless to success, or is all success in entrepreneurship based solely on an awareness of the environment at that particular time?’

The Tanaka alumni team are pleased to announce the launch of the alumni portal. This new networking facility enables alumni to become thoroughly interactive with the School, as well as fellow former students of the School. The site, tailored especially for Tanaka alumni, includes features such as discussion boards, career resources and job postings, a calendar of forthcoming events, photographs from previous events, as well as an alumni homepage section where alumni can design their own page to let everyone know what they’ve been up to since graduating. We anticipate that the portal will make it easier for alumni to network with former classmates, whether for business developments or for important events in their lives. This service is another component in building the foundations for a vast alumni network, a network that will last a lifetime.

As a member of the Tanaka alumni network you can now sign up for a lifelong Imperial College alumni email address, to which any mail sent will be forwarded to your personal email account. This means that if you ever change your personal email address you won’t need to let all your contacts know – simply contact us and alter the forwarding details. To sign up please visit

www.imperial.ac.uk/alumni/interactive.

Visit our website to see the latest information about your alumni network at www.imperial.ac.uk/tanaka/alumni.

Charing Cross and Westminster Medical School Alumnus Society

The Committee said farewell to their outgoing Chairman, Dr Malcolm Phillips (CXHMS 1964), in January 2005, and welcomed Dr Angus Kennedy (CXHMS 1979) in his place. Following the ‘last’ Annual Dinner, the Committee is investigating new ways to promote regular meetings of alumni of the three former Schools (the Charing Cross HMMS, the Westminster MS and the CXWMS). They hope to report progress before long.

If any alumni are interested in receiving copies of the Imperial College School of Medicine *Gazette*, a magazine produced usually twice a year by students of the current Faculty, please contact the Honorary Secretary by email. The charge is expected to be £20 for a year’s subscription.

The contact for alumni of all three former Schools is the Honorary Secretary, Peter Griffiths, peter.griffiths9@btinternet.com.

PETER GRIFFITHS
HON SECRETARY

City and Guilds College Association

A busy six months has included some prestigious speakers and social events for CGCA members and students. Guests at our traditional Christmas Lunch at 170 Queen’s Gate heard some astute observations about management and leadership from Vice Admiral Sir Jeremy Blackham, talking about his experiences in the Royal Navy and now in a large multinational company.

After Christmas, we were able to run one of the occasional dinners at the House of Lords, accompanied by a tour of both Houses and a talk by our host, Lord (Tim) Garden FCGI. Tim, a retired RAF Air Marshal, is well known for his contributions to media debates about crisis management and international affairs. He gave us a sobering review of global security issues from his current position in the House of Lords.

Our Annual Dinner saw a packed Saddlers Livery Company Hall when we were reminded by Sir David Brown, past-President of the IEE and Chairman of Motorola, of the rapid rate of change in information and communications technology. He laid down a challenge to us all, as engineers, to take a more positive lead in society to tackle poverty, social cohesion and sustainable development. Readers’ ideas on how

best we can respond to this challenge will be welcome.

For more information about CGCA and what we are doing, please contact Dr Teresa Sergot, our Chapter Manager at cgca@imperial.ac.uk or join us by visiting www.cgca.org.uk to receive a copy of *Imperial Engineer*. The Spring 2005 edition is an ideal indicator of the enthusiasm and dedication of Guildsmen and Guildswomen – young and old, in the UK and across the world.

BARRY BROOKS
PRESIDENT CGCA

Friends of Imperial College

Gateway to the College

Friends of Imperial College provide an opportunity for its members, which include neighbours and alumni, to enjoy many of the activities of the College including lectures, concerts, visits behind the scenes and more. At Christmas members attended *Lasers – Light up your life!* the newly inaugurated College Christmas lecture for young people. Some members brought children to see a great show that demonstrated how lasers had been developed for a wide variety of applications from telecommunications to the CD player. BBC presenter and alumnus Dr Ilya Eigenbrot, who works at Imperial on the widening participation initiative, was accompanied by Dr Karen Bultitude. Karen works for the Graphic Science Unit, an innovative science communication consultancy that specialises in taking science directly to the public. Plenty of audience participation and stunning displays made the Christmas Lecture a must for Friends next year.

Behind-the-scenes @ Mechanical Engineering

In February about 40 alumni, Friends and their guests had the chance of seeing the research going on in Mechanical Engineering at the invitation of Head of Department Professor Rod Smith. Amongst the work demonstrated in this 5* rated department we heard about research on combustion in aero engines powering the new Airbus A380; the development of artificial limbs and robotic surgery in the mechatronics in medicine laboratories; the identification of potential hazards in oil pipelines in the non-destructive testing laboratory; and long term fatigue testing of rails as part of research to identify the reasons behind recent rail crashes. Finally we explored the importance of the measurement of the crunch and crackle of biscuits in the food technology laboratory before enjoying a drinks reception. This was an outstanding visit organised with great efficiency by Professor Peter Lindstedt. Our thanks to all involved.

Sustainability or disaster

“We should treat the earth as if we intend to stay,” Julia Marton-Lefèvre told an audience of Friends and alumni at our April Lecture. She spoke on the theme of *Sustainability or disaster*. The agreements and goal setting at Rio and Kyoto are a valuable part of the process but we all need to change our personal lives as well as put pressure on politicians, who are programmed in a democracy to think only of the next few years, to be more visionary, she said. Julia showed us the green shoots of hope: wider adoption of the polluter pays principle; renewable energies; the acceptance and adoption of available new technologies (for example the gasoline-electric hybrid engine of the Toyota Prius which if used throughout the US would cut gasoline use in half); universal education, health care and family planning advice. It is a long road.

If you would like to join Friends please contact Roderick Rhys Jones at rod@rhysjones.com.

ROD RHYS JONES
CHAIRMAN

association_groups

ICSM Alumni

We held our very first *ICSM Alumni* gathering on 2 March 2005. Our guests were given a tour of the Tanaka Business School, followed by a drinks reception in the Sir Alexander Fleming Building. The ICSM jazz band accompanied the proceedings.

If you would like to join the ICSM Alumni or have any questions please contact Cecilie Sorhus on icsm-alumni@imperial.ac.uk or telephone her on +44 20 7594 9813. Visit our website for regular updates www.imperial.ac.uk/medicine/alumni/groups/.

CECILIE SORHUS
PRESIDENT



Royal School of Mines Association

It has been another good year for the RSMA, and one that has been successful in putting the RSMA on a solid footing with the Faculty of Engineering. The clubs and societies of the RSMU, within the Faculty of Engineering Students' Union, continue to attract strong support and offer the wider experiences of student life at Imperial. We believe that whilst students of the RSM and RSMA must continue to change with the continued restructuring of the College, the traditions that make the College so special to many will survive.

In February the RSM celebrated another splendid Bottle Match win, taking the current winning streak to nine years. The event, as ever, was well supported by the alumni body, and whilst rugby was the main event, the weekend also saw the RSM gaining victory over the Camborne School of Mines in football and most remarkably in squash. Discussing this feat, alumni could not remember when this was last achieved. Unfortunately, both hockey teams lost to the visiting teams.

As in previous years the RSMA's Trust essay competition is underway for 2005. Marcella Feilhaber, last year's winner, has published an edited version of her entry on the Urucu gas and oil development in the Amazon basin in the spring edition of *Imperial Engineer*. The second edition of the amalgamated publication demonstrates that the 'voice' of these two alumni groups will continue to grow and complement *Imperial Matters*.

PAUL HOLMES
HON SECRETARY

Royal College of Science Association

As mentioned in the last *Imperial Matters* all members were sent a questionnaire in the autumn asking what they would like from the Association. Once again, thank you to everyone who replied and you will have received a summary of the results. Many members valued the opportunity of belonging to the Association and wished the Association to continue, but the number who wished to play an active role was low.

It will be difficult for the Association to continue without at least some active participation, so the Committee proposed to the AGM in March that the next year would be a trial period for the Association and the position would be reviewed at the AGM in 2006.

On 1 March, members attended a daffodil-bedecked House of Lords

for a reception hosted by our Vice President, Lord Flowers. We were given a guided tour of the Commons, Westminster Hall, and had an opportunity to watch a debate from the public gallery in the Lords.

We were sorry to learn that Urmila Weller, who has supported the Association in the office for many years, will be leaving College at the end of May to move to Leicestershire. We wish her all the best for the future.

If you would like to join the Association or take a more active role please contact us on rca@imperial.ac.uk; +44 (0)20 7594 6129 or visit our website at www.rca.org.uk.

DAVID LEGG
HON SECRETARY



International round-up

It has been a busy six months for many of Imperial's International Alumni Associations, with an abundance of meetings, reunions and events.

The year got off to a great start when, during a trip to Hong Kong in January, Rector, Sir Richard Sykes and Pro Rector for Development and Corporate Affairs, Dr Tidu Maini joined the Imperial College Alumni Association of Hong Kong for dinner at the Royal Yacht Club.



VINCENT LAW

In February, alumni in France met up over a drink in Paris in an attempt to reactivate the Imperial College Alumni Association of France. For more information and to find out about future events, please email Alexandre Tedeschi (Electrical Engineering 1988) at alexandr.w.tedeschi@ingenieurs-supelec.org.

Our Alumni Group in Malaysia held their annual general meeting and cocktail reception in April. They are also busily preparing for their 10th anniversary later on this year when celebrations will include a gala dinner with a distinguished guest speaker and a golf competition. Further details can be found on their website, www.icaam.org.my.

April was a busy month for our alumni groups in America. The Imperial Northern California Alumni Association held their second Mountain Burning Jam which proved to be a great success. Over 80 guests listened to bands and watched an acrobatic plane display at sunset. The event was such a hit that preparations are already underway for Mountain Burning Jam III in July. Contact imperialbayarea@yahoo.com for further details about the Association in Northern California.

Meanwhile, over in New York, more of our alumni across the Atlantic got together for a drinks evening in April. There is clearly no stopping our New York-based alumni who met up again in May for a picnic in Central Park with family members, pets and frisbees! For more details about alumni events in New York, contact Despina Crassa (Biochemistry 1998) dcrassa@yahoo.co.

The Imperial College Club of Germany held their annual meeting over a weekend in Dresden in June. A packed itinerary included guest speakers, seminars and a visit to Dresden's rebuilt Frauenkirche and Volkswagen's automotive glass factory.

Over the next few months our international alumni continue to be busy, with the Imperial College Exiles North America East 31st Reunion in the Laurentian Mountains in Canada from 30 September to 2 October and the 10th anniversary celebrations of the Association in Malaysia amongst other forthcoming events.

Finally, we would like to congratulate Dr Lim Soon Wong, President of the Imperial Alumni Association of Singapore, who was ranked 40th best nurturer in computer science research in the world-following a study carried out by the Indian Institute of Science earlier in the year.

Thank you to all of our association groups who continue to give their time and support to such great events for our alumni the world over. We really enjoy hearing about your activities so do please keep us up to date with all the events you have going on.

Imperial College London 2005 Conference Season
Conference link




If you're thinking of **Where**, think **Wye** for 2005, 06, 07, 08, 09 ...

Imperial College London's Withersdane Conference Centre offers the discerning meetings organiser year round residential conferencing for up to 50 delegates at a rate of **£90.00** per person or 300 day delegates at **£30.00** per person.




Located on the outskirts of the historic Kentish village of Wye, just 60 miles from Central London, in a designated "Area of Outstanding Natural Beauty", the conference centre provides the ideal retreat for team-building, sales training, away-days, meetings and corporate hospitality.

For more information or to request a tour please call **01233 811 711**
email wye.conferencelink@imperial.ac.uk
or visit our website
www.conferencelink-at-wye.com







University of London
Distance learning

Over 50 postgraduate qualifications available for personal and professional development including:

Agriculture, Dentistry, Economics, Environment, Finance, Health, Information Security, Law, Management, MBA, Veterinary Health, plus many more

The flexibility you need, the intellectual stimulation you crave

If you would like further information please contact:
The Information Centre (05/IMP) Tel: +44(0)20 7862 8360/1/2
Email: enquiries@lon.ac.uk

www.londonexternal.ac.uk

focus on alumni

Sports round-up

As in the past, students at Imperial continue to excel at a variety of sports at the same time as coping with the rigours of academic life. For our medics in particular, the past academic year has been both eventful and successful. Here is a round up of some of this year's highlights.

In December, Tristan Lane (Medicine) fenced his way to gold in the Men's Individual Epee Competition at the BUSA Fencing Championships in Nottingham.

Rhonda Sturley (Medicine) also brought gold back to the College in March when she competed in the BUSA Judo Championships at the University of Wolverhampton.

Also in March, the women's tennis team narrowly lost out to the University of Newcastle in the Shield Finals in Bath.

Back in London, Imperial Medicals won the United Hospitals Cup for the fourth successive year, defeating Guy's, King's and St Thomas' 32-12 in the final, outscoring their opponents four tries to two.

The same weekend, Imperial '1' came second overall at the Head of the River race and took home the Vernon Trophy as the fastest London club and Imperial '5' were the winners of the Novice Pennant.

The Boat Club were also on a winning streak at the BUSA Regatta at the end of April, when they triumphed in the coxless pairs, novice fours and the novice eights.

To round off a successful year of rowing, Simon Hislop (Medicine), an Imperial Rowing Scholar, made the British under-23 team!

Third Imperial Varsity

The third Imperial Varsity, which pits Imperial Medics against Imperial Union teams, took place on 16 February, with this year's format

extended to include hockey, football and women's rugby, in addition to the main focus of the day, the Rugby Varsity JPR Williams Cup.

This match, named after the former Welsh rugby captain and St Mary's alumnus has always proved a hotly contested game and this year was no exception.

Imperial Medicals had so far beaten the Union team in both matches, so the stakes were high for both teams, as well as the thousand plus crowd of students, staff and guests who travelled to Richmond

for the showdown.

The first half was tight with both teams working hard to spread the ball to their backs. The first breakthrough belonged to the Medics, who worked the ball loose for the first try of the match. With penalties for both teams, the score at half time stood at 8-5 to the Medics.

The majority of the second half was closely fought with Medics dominating from lineout ball and Imperial spoiling well. Pressure from the Medics finally paid off when they scored another try, closely followed by a third in the dying seconds to the delight of 600 screaming Medics in the stand. The resulting score line of 20-8 was perhaps flattering to the Medics in what had been a very close match.

Presentations were made by Pro Rector Professor Rees Rawlings and JPR Williams himself, who also awarded Medic Jon Underwood with the Man of the Match trophy.



The beautiful game

This photograph was sent in by Jack Pearson (Chemistry 1944). It was taken after the annual Royal College of Science v City and Guilds football fixture at the end of the 1943-44 season.

"Between the two colleges, we regularly fielded two elevens every Saturday against other London colleges, sometimes travelling as far a field as Reading! My only memory of my first game is standing outside a London tube station, a lone northerner, new to London, hoping desperately that my team mate, a native, would remember that he had agreed to meet and take me to the ground.

The most vivid memory was of the day we played one of the London hospitals. That afternoon they had just won the Rugby Hospital Cup, the biggest event in their sporting year. Everybody was dragged into the celebrations. Beer, food, singing and horseplay followed in abundance and to this day I fail to recall how I made it back to my digs in Earls Court.

A final memory that sums up the period well is of a match that we played somewhere in Greenford/Harrow, at a ground borrowed from another college because the RAF had commandeered the Imperial pitches. A typical London fog descended. We couldn't see across the pitch and most of the other players became invisible in the gloom. Chaos ensued and in the end the referee abandoned the game before we lost the ball.



Strictly ballroom

Dr James Barron (PhD Aeronautics 1991) danced his way to success last November when he and his dance partner and then fiancée, Rachel Peacock, won the British National Senior Ballroom Dancing Championships in Blackpool. James and Rachel followed this by winning an English Amateur Dancesport Association competition in January and they hope to add to their eventful year by dancing for England at the World Championships in Germany in September.

James took up dancing when studying engineering at Oxford University. Later, while studying for his PhD at Imperial, he went on to win national student competitions in quickstep (1989) with Jill Barrett and in the waltz (1990 and 1991) with Janet Bond (Materials 1991). James and Janet were the first Imperial student couple to be trained by the internationally renowned dance coach, Dorothy Charlton, who still teaches members of the Imperial's Dancing Society today.

"After leaving university, I didn't really dance for about 10 years before meeting Rachel. She had hardly danced at all but we partnered up and, starting at the bottom, have gradually reached this level," said James of the couple's current success.

James and Rachel cemented their partnership in June when they married. Their first dance was, of course, the waltz!



focus on alumni

Silver singers



The Imperial Male Voice Choir are set to celebrate their Silver Jubilee in 2005 and will be commemorating this landmark with a performance at Holy Trinity Church on 29 October.

Over the years, the Choir has enjoyed promoting the fact that a scientific community such as Imperial can nurture a high standard of musicianship. A number of people who have attended concerts have mistakenly assumed that Imperial has a music faculty.

They recently performed at the International Festival in Cornwall, where they came fourth in the '40 voices and under' section of the competition, narrowly missing out on one of the top three spots to choirs from Germany and Switzerland.

Having opened their doors to non-alumni some years ago, around half of the Choir's current membership are former students of the College. They are excited about welcoming back some past members for the Silver Jubilee Concert, and expect the full contingent of founder members will be present.

All alumni, staff and supporters of the College are welcome to attend the Silver Jubilee Concert at the Holy Trinity Church on 29 October 2005. Please see the alumni website for further details www.imperial.ac.uk/alumni.

The 'Old Lags' Association

Since its formation in 1967, the Imperial College Scout and Guide Club has maintained a small but dedicated membership, even though its members have all now long finished their studies at Imperial.

At College, weekly meetings would usually include a guest speaker on anything from radio comedy to National Trust properties. There were regular weekends away to areas such as the Brecon Beacons and Snowdonia, and sometimes as far a field as Scotland and other weekends consisted of volunteering for organisations such as the National Trust.

One such weekend which still springs to mind was spent clearing growth from a tributary of the River Wey next to the Guildford sewage works, and another removing fallen timber from a wood next to a nudist colony near Bracknell! This hard work proved good practice for our summer expeditions to places with challenging mountains and glaciers such as Iceland, Norway or Andorra.

An unofficial tradition of the club was the club flat, located in Queens Gate Terrace. This was originally shared by some of the Club members and passed down to others each year. In 1964, the flat was relocated to Munster Road, Fulham, where it remained in Club hands until the landlord sold it in 1971. By 1971, all the founder members had graduated, so we founded our own organisation, and although still relatively young at the time, christened it the Imperial College Scout and Guide Old Lags Association, or ICSAGOLA.

Initially, we were an all-male organisation but, by the mid 1970s, there had been several marriages and the next generation had started to arrive. The first couples' weekend was held in the spring of 1977 and that autumn children came along for the first time, which meant that we forsook our traditional hut accommodation and went upmarket, renting a group of holiday flats in the Lake District.

Nowadays, our children have become young adults, and most have graduated from university themselves. Two sons followed in their father's footsteps and graduated from Imperial. The summer camping weekends are still popular; last year we went to North Yorkshire, this year will be Shropshire and next year Somerset. We have a core membership of about 20 regular attendees but can exceed 30 if the younger generation join us.

The first grandchildren are now arriving, and retirement beckons with its shock of 'how did we ever find the time to go to work?' The 'Old Lags' of our title now fits perfectly, and although we cannot yet match the current longevity of the Blank Club, featured in the last *Imperial Matters*, we hope to get there in due course.

BY RICHARD FULLERTON (Physics 1969)

Railway Society back on track

Following our article in issue 25 which reported the attempts of College staff members Kim Winter and John Barnes to resurrect the Imperial College Railway Society, we are pleased to report that the Society held its first event for alumni, staff and students in February 2005.

The main speaker at the event was Adrian Shooter, Chairman of Chiltern Railways, a company that has been one of the big success stories of rail privatisation. The evening was attended by around 40 people, many of whom were alumni and members of the Society during their time as students, including Victor Goldberg (Civil Engineering 1946, DIC 1947), one of the original founding members.

Following the meeting, a student committee was formed and the Society has now become officially part of the Union. Membership forms are available to alumni staff and students from the Chairman of the Society, David Horton (Mechanical Engineering) at david.horton@imperial.ac.uk.

If you are interested in attending future events of the Society, look out for details on the alumni website, www.imperial.ac.uk/alumni, or in the monthly alumni e-bulletins.

focus on alumni

Alumni lost and found!

The friends you make at university often become great friends for life. However, it is all too easy to lose touch after graduation.

If this is the case for you, the 'find a classmate' facility within the Interactive Alumni Services could provide a solution. The search allows you to look for classmates by name, course, year of study, department and faculty. Additionally, the Services enable you to post your own catch-up entry, an ideal way to let your former classmates and friends know what you've been up to since graduation.

Many of our alumni have already taken advantage of the 'find a classmate' search and are now back in touch with their long lost friends and student clubs and we have really enjoyed hearing about these reunions.

For the services to continue to successfully help alumni to reunite, the more alumni who register for a free Interactive Services account the better. To register for your account, please visit www.imperial.ac.uk/alumni.

Here are just a few of the wonderful stories of Imperial friends and clubs who have been and are reuniting.

Classmates reunited

Dr Nigel Legge (Civil Engineering 1988) had lost touch with fellow classmate, Roberta, and used our find a classmate facility to contact her. The search was successful and they have since resumed their friendship.

"I want to thank you very much for the help you gave to Nigel in finding me. You have been, for me, the only way to find a great friend I was looking for," Roberta said.

Dr Melanie Pask (Biology 1987) managed to contact her Imperial friend, Al, and told us "It is great to be in touch with Al again after so long (nearly 20 years but still feels like yesterday) and to be able to catch up on old and new news."

Class reunions

Following two very successful reunions for St Mary's graduates who graduated between 1951 and 1955, a third get together will take place in the Royal Air Force Club on Sunday 25 September 2005.

Another group of 1973 electrical engineering alumni, who call themselves the Triodes, have met regularly each year since graduation. Their next annual reunion, the 35th, will take place in London on Friday 6 January 2006.

Former students of the Department of Chemical Engineering who graduated in 1960 regularly get together at the New Cavendish Club, thanks to the efforts of alumnus Tony Davis. Their next reunion will be in February 2006, although they may also be getting together for a tour of the Department of Chemical Engineering before then.



Engineering a bone marrow model

Robin Kumar (DIC Chemical Engineering 2004) has helped to develop a bone marrow model which mimics the movement of oxygen and cells in the bone marrow. On applying his qualification in engineering to clinical issues Robin explains: "I wanted to use my training as a chemical engineer to address a medically related problem."

The bone marrow model will help to give a better understanding of how sickle cell disease affects bone marrow, and will eventually assist in the development of superior drugs to fight the disease.

Although still in its early stages of evolution, Robin's model promises to benefit scientists and clinicians. He warns that there is still a way to go. "My work is a first step towards understanding some of the key aspects of bone marrow function under normal and diseased conditions as it relates to oxygen levels."

With his co-researchers, Robin has high hopes that the model will go some way to easing the pain of sickle cell disease. "We hope that it will help to decrease bone pain and improve the immune system in affected individuals in a personal, patient-specific manner." With an estimated 6,000 sufferers of the disease in Britain at present, Robin's model couldn't have come at a better time.

St Mary's alumnus seeks hope for Parkinson's patients

Dr Matthew Farrer (PhD St Mary's Hospital Medical School 1996) has been interested in science for as long as he can remember and enjoyed the time he spent studying genetics at St Mary's. 'I was really, really lucky to have superb training,' he told *Business Review of Jacksonville*. 'Many of the leading names in human genetics have come from St Mary's.'

Matthew is set to prove that he is no exception to this rule. Currently working at the Mayo Clinic, Jacksonville in the USA, he and his team have been making progress over the last seven years by linking genes to Parkinson's disease.

They have found at least six different genes related to Parkinson's – a disease that, until now, has been thought of as a non-genetic disorder. When these genes are isolated they can be cloned to create cell and animal models of the disease. Matthew hopes that these findings will benefit not only patients suffering from genetic forms of Parkinson's, but could eventually be used to seek treatment for more common cases of the disease.

Source: *Business Review of Jacksonville*

books

Stop the 21st Century Killing You

Dr Paula Baillie-Hamilton (CXWMS 1987)
Vermilion

This guide addresses the key factors underlying illnesses and disease, offers proven alternative treatments and advises readers on maximising good health.

The New Paradigm

Professor John O'M Bockris (PhD Chemistry 1945)
D and M Publishers, Texas

Professor Bockris' argues that present science is simply inconsistent with many undisputed facts and that a new paradigm is needed to make the 'impossible' possible.

Digital Processing of SAR Data

Professor Ian Cumming (PhD Electrical Engineering 1967)
Artec House

A book with emphases satellite SARs such as RADARSAT and ENVISAT.

Killer Game Programming in Java

Dr Andrew Davison (Computing 1989)
O'Reilly Media

A practical introduction to the latest Java graphics and game programming technologies and techniques.

Site Engineers' Manual

Edited by David Doran (DIC Civil Engineering 1953)
Whittles Publishing

A pocket handbook for site engineers, covering best practice, planning, health and safety, and quality.

Scottish Birds Culture and Tradition

Dr (Frank) Robin Hull (St Mary's 1955)
The Mercat Press

This encyclopaedic book explores the wealth of tradition, history and lore of birds in Scotland and the ways in which they have influenced the culture and imaginations of Scots from the Ice Age to the present day.

The Healing Island

Dr (Frank) Robin Hull (St Mary's 1955)
Steve Savage Publishers Limited

The tale of a newly qualified GP in the 1960s sent to work on the mythical Island of Laigersay, which steals his heart and develops his skills in unexpected ways.

The Escher Cycle

Finn Jackson (MBA 1991)
Texere

The Escher Cycle provides a model for the execution of day-to-day activities while maintaining a clear vision for the future.

Urban Stormwater Management in Developing Countries

Dr Jonathan Parkinson (PhD Civil Engineering 1998) and Dr Ole Mark
IWA Publishing

Using practical examples and case studies, the book provides information to assist in management, planning and engineering design related to urban hydrology.

British-Hungarian Relations since 1848

Edited by László Péter and Martyn Rady
Chapter by Magda Czigány (Director of Library Services 1986-2000)
School of Slavonic and Eastern European Studies

A collection of papers published as part of the Magyar Magic-Hungary in Focus 2004, a celebration of Hungarian art and culture in the UK.

Equality and Becoming Free

Sabapathippilla Rajanayagam (Electrical Engineering 1932)
Minerva Press

A book asking the question: how can we pursue our own happiness while observing the constraints imposed by others?

Becoming a Nation

Sabapathippilla Rajanayagam (Electrical Engineering 1932)
Stamford Lake, Sri Lanka

A broad review of the goal towards which Sri Lanka has been working since its independence.

Home

Tim Relf (Agricultural Business Management 1990)
Piatkus Books

Tim Relf's second novel tells the story of a 28-year-old who is forced to move back in with his parents after the news breaks that his dad is having an affair and his mum's having a breakdown.

Exposed to the J-Curve: Understanding and Managing Private Equity Fund Investments

Ulrich Grabenwarter and Dr Tom Weidig (MSc Physics 1996)
Euromoney Books

A review of the private equity Fund industry including venture capital and buyout funds by two insiders.

Sara Abdulla (Mathematics 1993) is the editor of Macmillan Publishers' new popular science book list, which she launched in January 2005. The list focuses on science writing for popular appeal and Sara welcomes proposals for entertaining, authoritative books about the drama, politics, history and implications of research and discovery. Visit macmillanscience.com for further details.

obituaries

MRS PATRICIA (PAT) BOWEN (Librarian for West Middlesex University Hospital Trust)

Pat Bowen worked through Imperial's Central Library, providing library services for students on placement at West Middlesex University for some 20 years. She threw herself into her work with her customary vigour, enthusiasm and practical common sense. Pat was at the cutting edge of all new developments within the library including the advent of CD-ROM and she shared her expertise freely.

The library at West Middlesex will be named in Pat's memory – a fitting tribute to a brave and remarkable woman. She is greatly missed by all who knew her, particularly by James, her husband of 38 years, and her children, Andrew and Diana.

Provided by Richard Osborn

DR WILLIAM CHRISTOPHER BROWN (DIC Civil Engineering 1950)

Dr William Brown became a Fellow of Imperial College in 1987, an accolade of which he was extremely proud. He was an expert in long span bridges and a pioneer of aerial cable spinning and the aerodynamic box girder deck. He had many years' experience in the design and construction of long span bridges and was the lead designer for the record breaking Messina Straits Bridge which is due to commence construction this year. It is a great sadness that he will not see this particular venture through.

Provided by Mrs Celia Brown

MR FREDERICK (FRED) BUSHBY (Mathematics 1944)

Fred Bushby graduated from Imperial with first class Honours in mathematics, receiving the Sir John Lubbock Memorial Prize and the Governor's Prize in recognition of his academic achievements. After serving in the RAF Meteorological Branch, Fred embarked upon a remarkable career in numerical weather prediction spanning almost 30 years.

Fred retired in 1984, but he retained a strong interest in the Met Office and remained active in the Meteorological Club. He was also a strong bridge player, reaching the rank of Life Master and winning numerous events including the Civil Service championship.

Fred was a generous man and a natural storyteller. He will be remembered with affection and admiration by his wife, his son, and his many friends and colleagues.

Provided by Mrs Margaret Bushby

DR NICHOLAS (NICK) DAVEY (PhD Biology 1983)

Dr Nick Davey was a neuroscientist who specialised in the central nervous control of human movement. His pioneering work in transcranial magnetic stimulation (TMS) caught the public's imagination when, in 2000, he took part in a project with a French choreographer and dancer, Kitsou Dubois, to 'investigate the control of movement in weightlessness'.

Following his PhD he undertook a number of post-doctoral positions at Imperial College and the Charing Cross and Westminster Medical School, culminating in a senior lectureship at Imperial.

Source: The Independent

MR JOHN FABER (Civil Engineering 1941)

After graduation, John Faber began working for his father's consulting practice at the start of WWII, becoming heavily involved in projects associated with the war effort. After his father's death John became senior partner of the firm as it grew in both size and stature. The firm became involved in providing the NHS with large new teaching hospitals, most notably in Belfast, Manchester and London. John retired in 1975 at the age of 54 but remained a consultant with the firm for several years.

Those who knew John Faber will remember a big man in every sense. He had a larger than life personality and a wonderful sense of humour. He was much admired by those who worked with him.

Provided by Mrs Denise Faber

SIR HENRY FISHER (Former Chairman of the Governing Body, 1975-1988)

A brilliant lawyer and energetic public servant, Sir Henry's career encompassed the Bar, the Bench, the City and the world of academe in a manner that is without parallel. His interests extended to education (school and university), to penal reform and into all branches of science. His outstanding talents made him the natural choice to conduct important inquiries on behalf of the government and others.

Following a lifelong interest in scientific developments it was most appropriate that in 1973 Lord Sheffield should introduce him to Imperial College as a member of the Governing Body. From 1975-1988 he was its much-respected chairman.

Such leisure as his restless spirit allowed him was spent with his wife Felicity and children and friends, or at the keyboard. His passion was J.S. Bach, whose works he performed with great ability and affection.

Source: The Independent online

DR ALBERT FITCH (Geology 1928, PhD 1930)

After graduating Albert Fitch became a geologist. He was a much loved father, husband, grandfather and great-grandfather and proud that his son, Ralph, also attended the Royal School of Mines in the 1960s.

Provided by Mrs Barbara Fitch

MR BERNARD GLENISTER (Mechanical Engineering 1940)

Bernard Glenister graduated from Imperial at the outbreak of WWII and worked for the Bristol Aeroplane Company, specialising in aero engine research and development. Bernard was well known for the stories he told about those years, including having seen plans of the German V rockets before they began to fall on London.

Bernard later returned to High Wycombe to help run the family furniture business. He stayed there until his retirement in the late 1980s but never forgot his engineering background and could often be found down on the factory floor in his suit giving instructions to the engineers on all sorts of mechanical or electrical matters. He also never lost his love and affection for steam engines and the development of engines, exemplified by the various cars that he drove during his lifetime.

Provided by W Glenister

MR PETER HARVEY (Civil Engineering 1942)

Peter Harvey graduated from Imperial College with first class honours. Most of his career was spent in the field of public water supply in the UK, and he worked abroad in his later years as a consultant, visiting mostly underdeveloped countries. Just before his retirement, he managed a project for the supply of water in southern Cyprus.

Peter had a great interest in railways and he was past-President of the National Model Railway Association. His other interests included music, photography, the National Trust and the Retired Chartered Engineers' Association.

Provided by Elsa Harvey

MR PHILIP (PHIL) HOPWOOD (Mining Geology 1968)

A very sociable man during his time at Imperial, Phil Hopwood was Vice President of the RSM Union, Sports Editor of Felix and a spirited centre-forward for the first XI. His early career took him first to Australia and then, after an MSc in Mining Economics at Penn State University, to Guatemala and Argentina. Eighteen years based in New York and New Orleans followed. In 1994 an Anglo-American company merger transferred him back to London, where he retired in March 2004.

Phil will be remembered with great affection by all who knew him.

Provided by Lyn Armstrong (née Hawley) (Physics 1968)

MR BRIAN HUNT (MSc Geology 1969)

Brian Hunt worked all over the world as an engineering geologist before changing direction in 1972, when he embarked upon a PGCE and entered the teaching profession as a lecturer. He then worked at South London College where he was course leader for HND courses in Geological Technology.

During this time he also served as a Council member of the Institution of Geologists, where he was Honorary Secretary 1984-87. In 1990 Brian became one of the first individuals to gain the new distinction of Chartered Geologist. In retirement he enjoyed many hobbies including pottery, gardening, walking, speaking Russian and foreign travel.

He is dearly missed by his wife, Jean, and daughters, Louise and Rebecca, and by all who knew him.

Provided by Mrs Jean Hunt

MR DAVID INGRAM (MSc Electrical Engineering 1977)

David Ingram died suddenly on 1 November 2004, aged 55, as a result of a lung infection, having been recently diagnosed with a rare cancer. After 27 years' service with BT, he had been working for Network Designers Ltd in Wetherby as a computer consultant.

He leaves a wife, Anna, and two sons, Simon and Alex.

Provided by Mrs Anna Ingram

MR DEREK KIRBY (Mechanical Engineering 1946, DIC 1947)

Derek was a member of the Imperial College Gliding Club and the Rowing Club and rowed the Boat Race course twice weekly.

Provided by Margaret Kirby

MR PETER LIGHT (Civil Engineering 1953)

After graduating from Imperial, Peter spent several years working in power stations around the UK. From 1965 he was based in London with Trollope and Colls and also enjoyed a 50-year membership of the Institution of Civil Engineers, being elected Fellow in 1972.

Peter enjoyed several years of retirement at his home in East Sussex, keeping busy with consultancy work, gardening, walking and swimming. He was sadly diagnosed with mesothelioma in March 2004 and died last May.

Peter is greatly missed by all his friends and family, wife Edna, three children and six grandchildren.

Provided by Mrs Geraldine Lewis

PROFESSOR RICHARD MAH (PhD Chemical Engineering 1961)

Professor Richard Mah dedicated most of his life to chemical engineering education and research. He was a founding member of the computing and systems technology division of the American Institute of Chemical Engineers and chairman of numerous associated committees and boards, including serving as the President of Computer Aids for Chemical Engineers Corporation (CACHE) in 1986. Richard earned many professional accolades and awards and was listed in *American Men and Women of Science*, *Who's Who in America*, and *Who's Who in the World*.

He instilled a deep sense of moral values, ethics and principles and through his own example, Richard instilled these life-guiding principles in his wife, son, daughter-in-law and granddaughters. He was the beloved husband of Stella, loving father of Christopher and proud grandfather of Alison and Lauren.

Provided by Mrs Stella Mah

DR MICHAEL B MEHRTENS (PhD Mining Geology 1966)

Michael Mehrtens was a dedicated exploration geologist with several significant mining discoveries to his credit, of which three became producing mines. He lived and worked in many different areas of the world including Northern Rhodesia, South Africa, Canada, South America and the Middle East.

Mike's courage, grace and fortitude in the face of a long and devastating illness was an inspiration to all his family and friends. He is survived by his wife, Liz, his children Tim, Annabelle and Michael, and four grandchildren.

Provided by Mrs Liz Mehrtens

DR (JOHN) PHILLIP NICHOLSON (Westminster Medical School 1967)

Following on from a strong academic career temporarily disrupted by WWII, Dr Phillip Nicholson began working in the medical physics department of Westminster Hospital in 1945.

Phillip gained his doctorate, in 1956, from the University of London. Before he became Head of the Physics Department, Phillip embarked on a medical qualification – while still working full time – and in 1966 he qualified as a doctor, achieving the unusual distinction of being Dr Phillip Nicholson by two quite different routes.

Phillip remained at Westminster Hospital until he retired in the late 1980s. He continued to serve as officer of a number of scientific groups – including the Institute of Radiological Protection – until his death.

Provided by Martin Nicholson

association_obituaries

MRS MARY PAGE (NÉE BELLAMY) (Business Studies 1995)

After studying Business Studies at Wye College, Mary Page took her PGCE and entered teaching, a profession at which, along with so many other things, she excelled. During her years as a teacher, Mary also found the time to take her Master's in Education, travel, horse ride and fight a battle with cancer. When the cancer was discovered to be more serious, Mary strove to fight it head on but sadly passed away peacefully in October 2004.

Her death is a great loss to her husband Greg, her mother Joan, her father Mike, her sister Anne, her friends and all those who knew her.

Provided by Mike Bellamy and James Dixon

MR DEREK ROMER (DIC Mineral Technology 1962)

Derek Romer was an outstanding geologist, responsible in 1970 for the discovery of Europe's largest lead-zinc deposit in Ireland. Derek's passionate interest took him all over the globe as a consultant for large mining companies where he gripped the attention of his listeners with his enthusiasm and energy.

Derek was a generous and kind man whose enthusiasm was highly contagious. Perhaps his most prized possessions were a keen judging ability, a scientifically curious mind and a desire to ask probing questions.

He is survived by his wife, Ann, and his four children.

Source: The Irish Times

MR RICHARD (DICK) RUBINSTEIN (Mechanical Engineering 1948)

Dick Rubinstein embarked upon a dangerous and demanding career as leader of the Special Operations Executive (SOE) during WWII. Finding this work insufficiently adventurous, he volunteered for unspecified 'tasks of particular danger' which involved collecting intelligence on German dispositions. For this he was awarded the Croix de Guerre. Further operations followed as did another award – the Military Cross – for his gallantry and leadership with the SOE in Burma.

Upon his return to the UK, Dick took up a place at Imperial College to read Mechanical Engineering and graduated with a first class Honours degree. After an enjoyable and successful career with De Havillands and Hawker Siddeley Dynamics, he retired in 1986 where he took up role as Chairman of the Special Forces Club from 1989-1991.

Dick is survived by his wife, Gay, whom he had known since his school days, and his two sons.

Source: The Times

DR DAVID RUDD (Electrical Engineering 1947)

Dr David Rudd graduated from the Department of Electrical Engineering with a first class Honours degree. His career started with power station design but later broadened widely as his interest in the economic aspects of engineering developed.

He welcomed the advent of computer technology with great enthusiasm and was for some time a systems analyst. David spent 15 years of his career in the Ministry of Transport where, amongst other roles, he represented British interests in Brussels.

Provided by Mrs Inge Rudd

DR DEREK SYLVESTER (St Mary's Hospital Medical School 1946)

Embarking upon his first house jobs in the sector emergency hospitals, Dr Derek Sylvester returned to St Mary's as the Medical Superintendent, and was well regarded by many students and house officers. Derek later took up the post of medical officer in charge of the student health service in Bristol. His devotion to the service and the students was legendary.

Derek retired from medical practice at the age of 65 and concentrated on gardening, bee keeping and local village life – he was also an excellent shot and kept his neighbours well stocked with game!

He is survived by his wife, Gill, and their children.

Provided by H Griffiths

MR DAVID TENNENT (DIC Mining Engineering 1961)

Having completed his studies at Imperial College, David Tennent went on to start a mining consultancy company in Brisbane in 1963, still operating today. He retired in 1995 after a distinguished career in the mining industry. He always remembered his time at Imperial College fondly, the people he met and the joys of living in London.

David is survived by his wife Rosemary, daughter Sally-Anne and son Hayden.

Provided by Hayden Tennent

MR (REGINALD) HAROLD THOMPSON (Chemistry 1937, DIC Chemical Engineering 1938)

Harold Thompson was a keen athlete and during his time at Imperial won the half-mile three years running, retaining the Challenge Cup as a result. Later, he represented the AAA and Kent County. He had many interests in addition to athletics: photography, trains, maps and the piano. Harold also enjoyed travelling and had many overseas holidays to South Africa, Canada and America, as well as all over Europe.

Of all his achievements, Harold was most proud of being President of Blackheath Harriers, and he edited the Harriers' Gazette for many years.

He had a quick wit, colourful sense of humour and dedicated much of his time to encouraging athletics among the young, and spreading the Christian gospel to many people throughout the UK and the rest of the world. Harold is survived by his only sister.

Provided by Madge Thompson

Also sadly deceased

DR NAWAR AL-DHAHIR PhD Mathematics 1966

MR PAUL ALTMANN Electrical Engineering 1940

MR CHRISTOPHER BANKS MSc Geology 1969

MR DAVID BEADLE Electrical Engineering 1937

DR LYNN BRADING Charing Cross Hospital Medical School 1985

MR CHARLES DINGLEY MSc Computing 1973

MR JOHN DUERKSEN DIC Chemical Engineering 1960

MR NORMAN DYKE Civil Engineering 1940

MR DAVID EVANS Zoology 1964

MRS SABIHA FOSTER MSc Science Communication 1993

MR FRANK GRINSTED Mechanical Engineering 1939

DR JOHN TEAR GROVES Westminster Medical School 1949

MR HARRY HOLDEN Chemistry 1939, MSc 1940

MR DAVID JENKINS MSc Electrical Engineering 1965

DR DIANA LORANGER DIC Geology 1961

DR J B LYON Westminster Medical School 1943

MR ANGUS MCKENZIE Electrical Engineering 1955

DR ARTHUR NEWMAN Chemistry 1931, DIC 1932

DR SANDRA OWEN St Mary's Hospital Medical School 1966

DR EMYR PENRY St Mary's Hospital Medical School 1970

MR RADHA K R PILLAY Civil Engineering 1981

DR GEOFFREY POPE Aeronautics 1956, MSc 1958

MR JOHN REGINALD QUERTIER Mechanical Engineering 1938

MR BOHDAN A SUKIENNEICKI Aeronautics 1956, MSc 1957

PROFESSOR MARY R TRUTER Chemistry 1945

DR GEORGE WEYLAND Westminster Medical School 1954

honours

New Year Honours 2004

PROFESSOR SIR JOHN LAWTON CBE FRS (Visiting Professor, Life Sciences)
Chief Executive, Natural Environment Research Council
Knighted for services to ecological science

DR MARK E ADDISON CB (PhD Social and Economic Studies 1977)
Director General, Operations and Service Delivery, Department for the Environment, Food and Rural Affairs
Companion of the Order of the Bath

PROFESSOR JOHN B BURLAND CBE FRS FREng (Emeritus Professor, Civil and Environmental Engineering)
Emeritus Professor of Soil Mechanics, Department of Civil and Environmental Engineering, Imperial College London
CBE for services to geotechnical engineering

PROFESSOR DIAN DONNAI CBE MBBS DCh FRCP (St Mary's Hospital Medical School 1968)
Professor of Medical Genetics, University of Manchester and Clinical Director, North West Genetics Service
CBE for services to medicine

MR TERENCE J ROSE CBE (Chemical Engineering 1980)
Director Wales and South West, Health and Safety Executive
CBE

PROFESSOR PATRICIA M WOO CBE FMedSci FRCP FRCPCH (Charing Cross Hospital Medical School 1972)
Professor of Paediatric Rheumatology, University College London
CBE for services to medicine

PROFESSOR JOHN K BANYARD OBE (Civil Engineering 1966)
Director, Asset Management, Severn Trent Water Ltd
OBE for services to the water industry and to engineering

DR MERVYN E BRAMLEY OBE (MSc Civil Engineering 1969)
Lately Flood Defence Development Manager, Environment Agency
OBE for services to the environment

DR JOHN D W HUDSON OBE (MPhil Chemistry 1969, PhD 1971)
Lately Headteacher, Holloway School, Islington
OBE for services to education

DR NORMAN K MCIVER OBE OSTJ MBBS FFOM RCP (Westminster Medical School 1965)
OBE for services to diving safety

DR MARK C M PORTER MBE (Charing Cross and Westminster Medical School 1987)
Broadcaster and General Medical Practitioner
MBE for services to healthcare

Other awards and appointments

PROFESSOR ROBERT G ACKMAN OC PhD LLD FCIC (Chemistry 1956)
Emeritus Professor, Dalhousie University, Nova Scotia, Canada
Appointed to the Order of Canada in recognition of his contribution to the biochemistry of oils, fats and lipids

PROFESSOR ROY ANDERSON FRS (Zoology 1968, PhD 1971)
Chief Scientific Adviser to the Ministry of Defence and Chair of Infectious Disease Epidemiology, Primary Care and Population Health
Winner of Ernst Chain Prize 2005, in recognition of his major contribution to the management and understanding of human disease

DR PHILIPPA CANN (PhD Mechanical Engineering 1981)
Principal Research Fellow, Mechanical Engineering
Awarded Tribology Trust's Silver Medal in recognition of her contribution to the science and technology of tribology

DR DAVID COHEN CBE (Westminster Medical School 1966)
Elected Honorary Fellow of Harris-Manchester College, University of Oxford

PROFESSOR GORDON CONWAY FRS
Professor of International Development, Environmental Science and Technology
Appointed Chief Scientific Advisor to the UK Department for International Development, to promote progress in identifying where new science and technology can contribute to poverty reduction

PROFESSOR SIR ARA DARZI FMedSci
Clinical Professor, Surgery, Anaesthetics and Intensive Care
Awarded Dubai International Hamdan Award for Medical Research Excellence in the category of minimally invasive surgical technology for his pioneering work using robotic surgery



PROFESSOR RALPH DEAN (Botany 1980)
Director, Center for Integrated Fungal Genomics, North Carolina State University
Awarded both the 2004 Huxley Memorial Medal by Imperial College London and the Honor Award by US Department of Agriculture in recognition of his work into the function of genes from economically important fungi and the crops they affect

DR DAVID DYE
Lecturer, Materials
Awarded Grunfield Medal and Prize by the Institute of Materials, Minerals and Mining in recognition of his professional contribution to the field of the welding and deformation processing of nickel and titanium alloys

PROFESSOR SIAN HARDING
Professor of Cardiac Pharmacology, National Heart and Lung Institute
Elected next President of the European section of the International Society for Heart Research

PROFESSOR JOHN KILNER
Head of Department, Materials
Awarded Verulam Medal and Prize by the Institute of Materials, Minerals and Mining in recognition of his distinguished contribution to ceramic materials

DR JOHN R LACEY (Oil Technology 1953, PhD 1955)
President, John R Lacey International Ltd, Alberta, Canada
Appointed Honorary Consul General for the Kingdom of Thailand for Alberta South of the 52nd parallel together with Manitoba, and Commander of the Most Noble Order of the Crown of Thailand

MR PETER LIGHTHALL (MSc Civil Engineering 1979)
Vice President, AMEC Earth and Environmental Ltd, British Columbia, Canada
Elected Fellow of the Engineering Institute of Canada in recognition of his exceptional contributions to engineering in Canada

PROFESSOR JANE PLANT
Visiting Professor, Earth Science and Engineering
Awarded honorary doctorate by Keele University for her academic achievement in environmental geochemistry

PROFESSOR DAME JULIA POLAK FMedSci
Professor, Investigative Science
Awarded Ellison-Cliffe Medal and the Pathology Society Award in recognition of her long service to pathology by the Royal Society of Medicine

PROFESSOR GEOFFREY L SMITH FRS
Wellcome Trust Principal Research Fellow, Investigative Science
Winner of 2005 Feldburg Foundation Prize, which promotes Anglo-German collaboration in medical and biological science, for his research into pox viruses



PROFESSOR HUGH SPIKES (PhD Mechanical Engineering 1971)
Professor, Mechanical Engineering
Awarded Tribology Trust's Gold Medal for outstanding achievement in the field of tribology

DR PRIYANTHA D C WIJAYATUNGA (PhD Electrical Engineering 1992)
Professor in Electrical Engineering, University of Moratuwa Sri Lanka
Appointed first Director General of the Public Utilities Commission of Sri Lanka, the first multi-sector regulator in South Asia for infrastructure sectors such as electricity, water and petroleum

If you receive a special honour or award, we will try to include your name on a future Honours page. Let us know by emailing matters@imperial.ac.uk.

