

Imperial College London

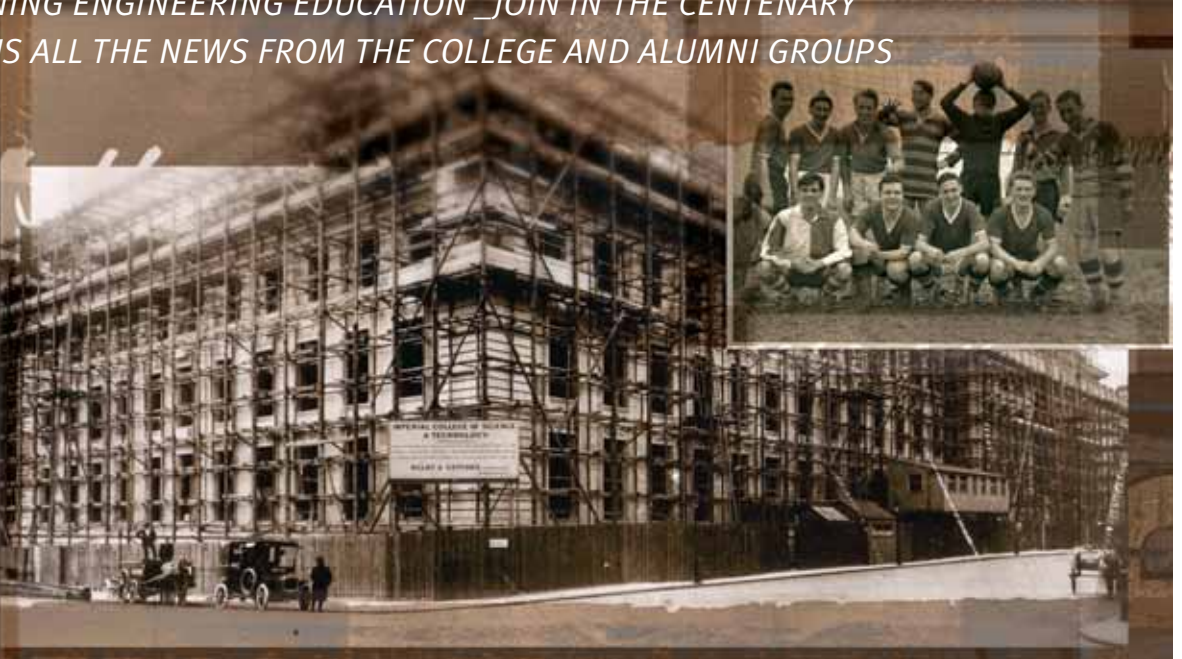
100 years of living science

100



staying connected

ISSUE 29 WINTER 2007 IMPERIAL COLLEGE CELEBRATES ITS HUNDREDTH BIRTHDAY_ENLIVENING ENGINEERING EDUCATION_JOIN IN THE CENTENARY CELEBRATIONS_PLUS ALL THE NEWS FROM THE COLLEGE AND ALUMNI GROUPS



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.

ISSUE 29 WINTER 2007

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IMPERIALmatters

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editorial



DEAR ALUMNUS

Welcome to the winter 2007 edition of your magazine, *Imperial Matters*.

I am delighted to introduce this Centenary themed issue at the start of our Centenary year, and I hope that you have by now received your invitation to join us at some of the celebratory events taking place throughout 2007.

We have also launched our Centenary Campaign, which runs from 2000 to 2010 and aims to raise £207 million through philanthropic support. An important element of this campaign is the Annual Fund, through which around 2,000 alumni have already made a gift.

I am confident that this number will grow significantly over the remaining years and I would like to thank all of our generous supporters who are helping to make a difference to the lives of students at Imperial today and tomorrow. News of some recent gifts to the campaign are detailed in issue seven of *building the connection*, our fundraising newsletter, which is enclosed with your copy of this magazine.

You are one of over 140,000 students who have benefited from an education at the College, or its associated institutions, since 1907. Many of our alumni continue to make an impact around the world today and in this issue we bring you news about some of those achievements.

On page 26, you can discover how Industrial Design graduate Chris Peacock is applying the skills that he developed at Imperial to invent vital equipment to help those with Parkinson's disease perform basic everyday tasks. Another of our engineering graduates, Berkeley Associate Professor Claire Tomlin, is currently pondering how best to use the \$500,000 'genius grant' she has been awarded by the John D. and Catherine T. MacArthur Foundation. Turn to page 27 to find out more.

Since the College's foundation on 8 July 1907, we have grown to become one of the world's top universities. This was confirmed at

the end of last year when we received the news that we had been placed ninth overall in *The Times Higher Educational Supplement's* world university rankings, a fitting culmination of 100 years of world class teaching and research. My predecessors in the post of Rector have each made major contributions to our institution during our first century and you can read about all 12 of them on page 12 of this issue.

As Imperial's thirteenth Rector, I was proud to officially launch the College's Centenary celebrations on 30 January with a lecture entitled *100 years of living science*. Its content focused on the impact that Imperial people have made to twentieth and early twenty-first century life: discoveries such as penicillin, holography and the chemistry behind the catalytic convertor, and innovations including the world's fastest train and robotic surgery. You can watch or download the lecture at www.imperial.ac.uk/Centenary. We plan to put many of this year's lectures online, making it possible for you to join in our events wherever you are in the world.

One major event that we have planned for our alumni in 2007 is the Alumni Reunion, which takes place over the weekend of 14–16 September 2007. Your booking form is enclosed with this mailing. We have an outstanding array of activities lined up including lectures, tours of our South Kensington Campus, including trips up the Queen's Tower, and a varied social programme. I look forward to seeing you there.

Richard B Sykes

letters

letters

College architecture

I didn't know that Sir Aston Webb designed the Royal College of Science building (One hundred years on..., issue 27). I spent the first two years of the physics course in that building, after which we moved into a new building. Furthermore I spent many happy hours rehearsing with the Jazz Club and playing at balls in the Students' Union which, as I now learn from your article, was also designed by Aston Webb.

I seem to have been following Sir Aston around. I spent 20 years, apart from a one-year sabbatical in the United States, at the University of Birmingham. Everyday of my working life I passed the University's foundation buildings, which are known as the Aston Webb Block after their architect. We now live in a house that was designed by the young Aston Webb, before he received his knighthood. He is best remembered for his municipal buildings, which include Admiralty Arch and the new frontage of Buckingham Palace. It seems that ours is one of the few examples of his domestic architecture.



STANLEY SALMONS

I hope the photograph that I took outside the old Science Museum library may bring back some memories!

EMERITUS PROFESSOR STANLEY SALMONS (Physics 1961, MSc 1962)

Reminiscing about days gone by

As a physics student in 1943, I served in the Chelsea-Kensington contingent of the Home Guard. This involved Sunday morning 'battles' between the two boroughs, enriched by explosives from the Department of Chemistry. On one occasion I was in the front basement of an upmarket house, when one of these devices exploded nearby, blowing out a window. A furious resident emerged, wearing a senior officer's hat with gold braid on its peak. One of our officers promised appropriate compensation.

My 1943 examination results led Professor Dingle to rule that my place could be better used by another. I was posted to the Z projector anti-aircraft rocket battery in Hyde Park, so I had a Park Lane address – 8 Nissen Hut! I cycled to and from my job in Sunbury, and during the blackout, the scent of Fuller's Chiswick brewery was a useful landmark!

I recall one particular training session: "Right, now, what we are going on with tonight is the helectrical circuit of the projector. The first thing to understand is that there are two sorts of helectricity, positive helectricity, and negative helectricity. Positive helectricity flows in red wires, and negative helectricity flows in blue wires."

Each projector had a crew of two; number one controlled the bearing and elevation, and fired the rockets when instructed over headphones. Number two had to bring forward the twin rockets from the ammunition store, each weighed 56 pounds, so promotion to number one was welcome. On one occasion, when the projectors were pointing east over the Dorchester Hotel at an elevation below the safety angle, a number one mistook an order at the nearby 3.7" battery for one over his own headphones, and fired. Others thought they had missed the order, and a ragged volley roared just over the hotel!

TONY LUCKING (Physics 1943, Electrical Engineering 1949)



I was very interested by several of the items in issue 28 of *Imperial Matters*. I was a student at the Royal College of Science in the late 1950s, and I was, for a time, a resident of the Old Hostel in the Beit Quadrangle. It was therefore fascinating to read of the previous service of Miss Sherwood (Sherry). I only knew her as the women's warden of the hostel, who seemed to have a universal 'pass key' and therefore, could appear unexpectedly from normally disused doorways. Similarly I have now learnt the derivation of the name 'Queenies' which we used without ever knowing the source.

On a totally different topic, there were about that time proposals, I believe in *Felix*, to form a breakaway University of South Kensington comprised of Imperial College, the Royal College of Music and other local colleges and training hospitals, such as the long gone St George's. I note that a half century later a comparable development is taking place.

JOHN COLLINS (Physics 1959, MSc 1961)

Leaving the University of London

As usual the recent edition of *Imperial Matters* was very interesting. The article that took my eye was that on the proposal to withdraw from the University of London (News, issue 28). The reasoning does not look convincing to me. It seemed to argue that the College can keep all of the advantages of membership while withdrawing. If the students can still benefit from the services of the University, why should the College separate at all? Perhaps the University of London imposes some requirements that somehow are seen as an imposition, but this is not clear.

I recollect that when I was an undergraduate there was always some campaign to withdraw but I never quite saw the argument then. Does the Rector feel that freedom is somehow compromised? If so, why not say so?

DR JOHN WALLER (Chemistry 1944)

You can read more about the College's withdrawal from the University of London on page four.

Imperial Matters welcomes letters for publication, by post or email. We reserve the right to edit 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*. Please note that any views expressed here are those of the contributors and do not necessarily reflect those of Imperial College London.

Please send your letters to:
Imperial Matters
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 Imperial College London
 South Kensington Campus
 London SW7 2AZ
 or by email to matters@imperial.ac.uk

Imperial College
London

100 years of living science

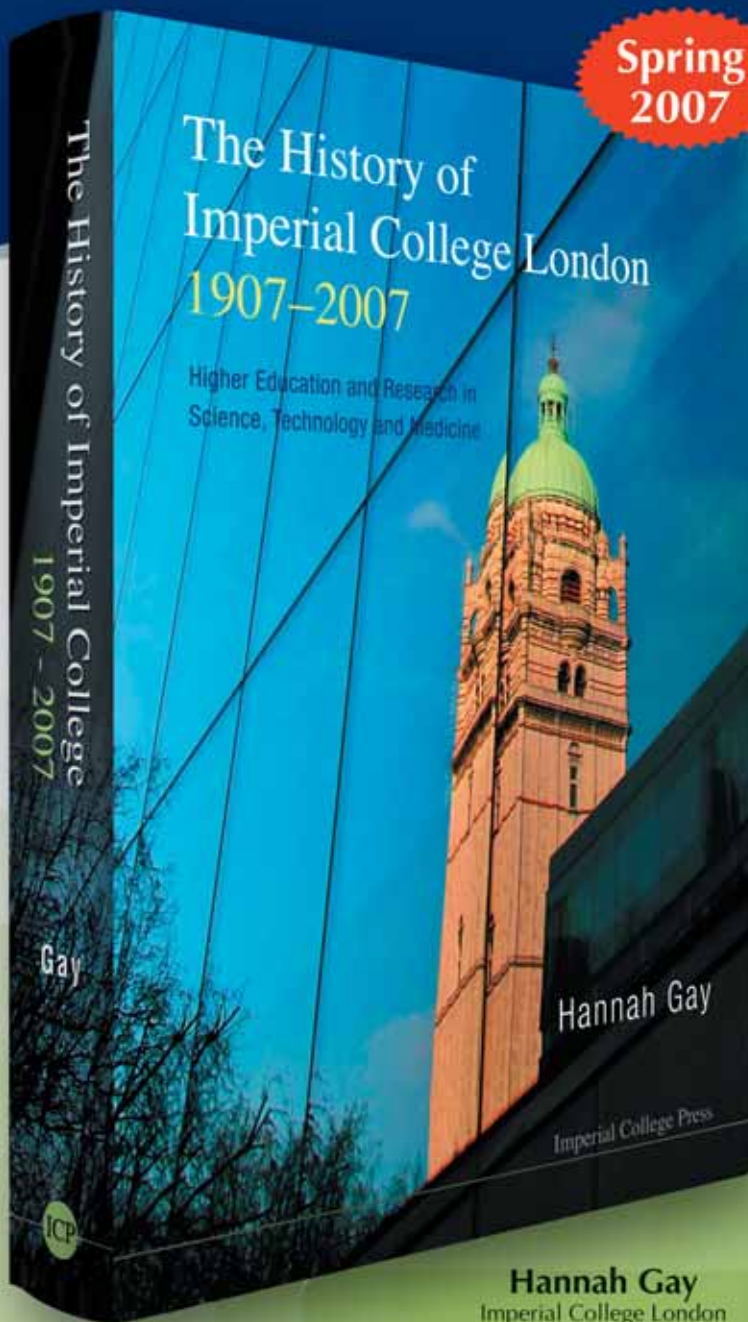
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Spring
2007

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Hannah Gay
Imperial College London

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Business School announces EQUIS accreditation

In October 2006, Tanaka Business School received EQUIS accreditation from the European Foundation for Management Development (EFMD). Added to its existing accreditation by the Association of MBAs, this is recognition of the School's international appeal and the quality of its programmes.

David Begg, Principal of Tanaka Business School, said: "The market for business education is a global one, and successful business schools need to attract top students, faculty and corporate sponsors from all over the globe. More than 70 per cent of our students and faculty come from outside the UK. We work closely with some of the world's leading companies, such as BP, Shell, Pfizer, GlaxoSmithKline, and Laing O'Rourke. We are delighted that the EFMD is recognising our international excellence in teaching and research with the EQUIS accreditation."

Building links with India

Sir Richard Sykes, Imperial's Rector, and Mr R. Seshasayee, President of the Confederation of Indian Industry (CII), have signed a memorandum of understanding, linking the two organisations. This initiative, signed in the presence of UK Secretary of State for Trade and Industry, Alastair Darling, and Indian Minister for Commerce and Industry, Kamal Nath, acknowledges the importance that each government attaches to the development of close links in the fields of science and innovation.

The CII and Imperial will cooperate and collaborate in various sectors, including drugs and pharmaceuticals, biotechnology, energy and the environment. Stakeholder groups will be created with representatives from academia, industry and government organisations to identify potential collaborative projects in technology transfer, innovation and innovation management.

In addition to the CII agreement, Tanaka Business School will host the Rajiv Gandhi Centre for Innovation and Entrepreneurship, named after the former Indian Prime Minister and Imperial College alumnus. The Centre will help Indian and British companies improve performance in innovation management and facilitate the cross-fertilisation of ideas between science, engineering, medicine and business.

Sir Richard said: "India's economic success will increasingly depend on wealth creation through knowledge and high-tech interaction with the global economy and we feel that this historic agreement between Imperial and the Confederation of Indian Industry will help pave the way towards a more innovative corporate environment and increasing interaction between the bright new hopes of our two countries."

New Centre for Capital Market Dysfunctionality established

Dr Paul Woolley, founder and former Chairman of GMO Europe, a fund management firm based in London, is donating £4 million to Tanaka Business School for the creation of a new Centre for Capital Market Dysfunctionality.

The Centre will operate within the Business School's new Risk Management Lab, which acts as an umbrella for all its research in quantitative finance. The new centre will focus on financial market inefficiency, analysing why inefficient outcomes arise, the impact that they have on the economy and how such adverse effects can be mitigated.

Thanking Dr Woolley, Sir Richard Sykes said: "The Finance Group within Imperial's Business School is rapidly being recognised as a centre of excellence in quantitative finance and risk management. Paul Woolley's magnificent gift will allow us to bring new talent into Imperial and will cement our reputation for deploying leading-edge techniques to work on practical problems of concern to society as well as business."

Professor David Begg added: "Paul Woolley's contribution will extend well beyond the financial support that he is providing. His experience in the industry and understanding of the problems that it faces will help shape our research. I expect the Paul Woolley Centre quickly to become the focus of international research in this field."



Dr Paul Woolley, pictured right, with Tanaka Business School Principal, Professor David Begg

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Converting ideas to launched products

Research published in the *Journal of Marketing Research* in August 2006 by Tanaka Business School's Jaideep Prabhu and academics from the University of Minnesota and Daphne Communication Management addresses the question of why some firms are better at converting ideas to launched products than others.

The researchers found that firms with the highest conversion ability are those that focus on a moderate number of ideas of importance in the firms' areas of expertise, and adopt a moderate level of speed in conversion.

Expert panel critiques current state of European innovation in life sciences

At a seminar in October 2006, a panel of distinguished European researchers and medical practitioners presented papers on the theme of *Innovation in Life Sciences*. Presentations examined eight different aspects of innovation in healthcare and bioscience. Topics included theoretical and organisational models for innovation and how innovative outputs can be most effectively transposed to the commercial and social environment.

Top honours in idea to product global competition

Executive MBA student David Simmons, Faculty of Medicine Clinical Research Fellow Omer Aziz, and Mechanical Engineering PhD student Adam James won the first prize in the global Idea to Product Competition. The Imperial team's winning project, the 'Smart Bougie', is an innovative new surgical device that gives feedback to the surgeon during a procedure, such as for the removal of an oesophageal blockage, decreasing patient trauma and lowering costs for the healthcare organisation.

MSc in actuarial finance accredited

Tanaka Business School's new MSc in Actuarial Finance has become the first degree to ever receive accreditation from the Institute and Faculty of Actuaries through their new accreditation process. Graduates will benefit from exemptions from many of the current actuarial examinations as a result.

The part-time programme integrates the fundamentals of modern finance with actuarial science for the first time, covering core disciplines including finance and economics, as well as specialised topics.

Imperial news_Engineering



Was there life on Mars? Desert varnish may hold the answer

A mysterious shiny coating found on rocks in many of Earth's arid environments could reveal whether there was once life on Mars, according to new research. Published in the journal *Geology*, it reveals that the dark coating, known as desert varnish, creates a record of life around it by binding traces of DNA, amino acids and other organic compounds to desert rocks. Samples of Martian desert

varnish could therefore show whether there has been life on Mars at any stage over the last four and a half billion years.

It was previously suggested that the dark colour of the varnish was the result of the presence of the mineral manganese oxide, and that any traces of life found within the varnish came from biological processes caused by microbes in this mineral. However, the new research reveals that the most important mineral in the varnish is silica, which means that biological processes are not significant in the varnish's formation.



Dr Randall Perry, Department of Earth Science and Engineering, explained that as life is not involved in desert varnish formation, the varnish can act as an indicator of whether life was present or absent in the local environment. He said: "If silica exists in varnish-like coatings in Martian deserts or caves, then it may entomb ancient microbes or chemical signatures of previous life there too.

"These lustrous chroniclers of the local surroundings can provide a window back in time. Martian desert varnish would contain a fascinating chronology of the Martian setting," he added.

Rough guide to Mars

The dramatic landscapes of Mars were brought to life at the Royal Society Summer Science Exhibition in July, thanks to work carried out by a team of geologists and engineers at Imperial College London, University College London and the Open University.

Using new images generated by the European Space Agency's Mars

Express High Resolution Stereo Camera, the team has created three-dimensional visualisations of the canyons, volcanoes and craters of the red planet. This *Rough Guide to Mars* allowed visitors to take the controls and explore canyons carved by gigantic floods, peer down into volcanoes and plunge into a frozen sea, recently discovered by the Mars Express spacecraft.

Dr Sanjeev Gupta, Department of Earth Science and Engineering, commented before the Exhibition launch: "It will be great fun, like having your very own jetpack and whizzing around the Martian landscape without leaving your chair."

As well as bringing Martian landscapes to life, the technology gives geologists new opportunities to examine geological features that provide important clues to the planet's evolution and history. Dr Gupta added: "The more we see of the surface of Mars, the more exciting it becomes. At Imperial we are investigating features created by huge catastrophic floods that form deep beneath the surface, where life may have developed. There's every chance that future explorations could bring back proof that Earth is not the only planet in our solar system supporting living organisms."

Energy Futures Lab celebrates its first year with launch of new course

The Energy Futures Lab celebrated the end of an eventful first year by announcing a new MSc programme in Sustainable Energy Futures, starting in October 2007. The MSc was announced at the Lab's first annual lecture given by Dr Paul Golby, CEO of E.ON UK, who also used the occasion to pledge a donation for the formation of a planned Energy Integration Lab, as well as a fund for student prizes.

"The MSc in Sustainable Energy Futures will combine academic and industrial experience, from across Imperial's faculties, covering a range of topics from clean fossil fuels to sustainable transport and energy storage and transmission, and will provide the next generation of energy leaders with the knowledge and understanding to tackle what is a truly global issue," explained Professor Nigel Brandon, Executive Director of the Energy Futures Lab.

The Lab, established in November 2005, brings together the multidisciplinary skills and experience to tackle the major issues in energy research. It is supported by the Research Council's Energy Programme and strategic investment from Imperial, and seeks to forge stronger links between Imperial and the energy research community across the world.

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Energy Futures Lab leader appointed as Research Council energy ambassador

Professor Nigel Brandon, Shell Professor of Sustainable Development in Energy in the Department of Earth Sciences and Engineering, has been appointed as the Energy Senior Research Fellow for the Engineering and Physical Sciences Research Council. Professor Brandon will be providing advice and undertaking profile-raising activities for UK energy research, supported by the Research Council's Energy Programme. His present research work encompasses high

temperature solid oxide fuel cells (SOFCs), metal supported intermediate temperature SOFCs, and lower temperature polymer fuel cells.

New head for Earth Science and Engineering

Petroleum engineering expert Professor Martin Blunt has become the new Head of the Department of Earth Science and Engineering. Professor Blunt was previously Head of Imperial College's petroleum engineering and rock mechanics research group. His research interests include improved oil recovery, carbon dioxide capture

and storage, and how to extract low carbon energy from fossil fuels.

Professor Blunt came to the College in 1999 from Stanford University, which he joined after working for BP as a Research Reservoir Engineer.

Biomedical systems expert awarded honorary fellowship of Royal College of Surgeons

Imperial College's Professor of Biomedical Systems Engineering Dick Kitney has received a prestigious Honorary Fellowship of the Royal College of Surgeons. He is the first engineer ever to receive such an

award, according to the College's President Bernard Ribeiro. Professor Kitney has worked on areas including the study of arterial disease, cardiorespiratory control and three-dimensional visualisation techniques.

Engineering students showcase centenary at Lord Mayor's parade

Students from across Imperial College London took part in the 791st Lord Mayor's Parade on Saturday 11 November 2006. They turned out in hard hats, high visibility jackets, lab coats, scrubs and stethoscopes to showcase the College's Centenary.

This has been significantly enhanced in 2006 through two major initiatives: a significant donation for PhD scholarships in energy research from Alan Howard (Chemical Engineering 1986), and the formulation of the Masdar research network with the Abu Dhabi government and other leading universities, which will see the development of world class collaborative research projects in energy that will form part of Abu Dhabi's programme of developing a sustainable energy economy.

UK's first nuclear doctorate centre launched

The Nuclear Engineering Doctorate Centre, a partnership between Imperial College London and the University of Manchester's Dalton Nuclear Institute, will be the only institution in the UK to award an Engineering Doctorate (EngD) qualification in nuclear engineering.

The four-year postgraduate qualification will be aimed at the UK's best young research engineers. Its aim is to equip them with the skills needed to take on senior roles within the nuclear industry. Up to 75 per cent of the EngD will be made up of industrial placements, through partnerships with companies including Nexia Solutions, British Energy and Rolls Royce. The programme is funded by industry together with the Engineering and Physical Sciences Research Council (EPSRC).

Professor Robin Grimes, Department of Materials, said: "This programme provides a framework for present and future collaboration between industry and academia. It will make an important contribution to revitalising the UK nuclear energy capability."

The first intake of students onto the EngD course was in September 2006.

Unusual honour sends meteorite experts into orbit

Imperial College London meteorite experts Drs Phil Bland, Matthew Genge and Mark Sephton were among approximately 50 scientists honoured by the International Astronomical Union at the recent annual meeting of the Meteoritical Society. Asteroids in orbit between Mars and Jupiter have been named 6580 Philbland, 6626 Mattgenge and 7552 Sephton.

Dr Phil Bland, honoured for his work on the origins of the solar system and impacts, said: "It's funny to think there's a four kilometre wide rock out there with my name on it. Having studied impacts, I

somehow can't help but hope that it might collide with something – preferably Mars or the Moon rather than the Earth."

In contrast Dr Genge, honoured for his work on micrometeorites, is worried about collisions: "6626 Mattgenge is already coming quite close to Mars. The orbits of asteroids change and in the future it will probably become an Amor, a Mars-crosser. Around 50 per cent of these collide with the red-planet. My seven kilometres of prime asteroid real estate could turn into a hole in the Martian surface. Even worse it might survive to become an Earth-crosser, in a few million years, and prompt an impact scare."

Dr Mark Sephton, whose work on the organic molecules within meteorites was honoured, said: "My kids are going to love this. With the name Sephton, it makes 7552 a family asteroid, although it's a bit far away to make a decent holiday home."



Picasso PCs

In September 2006, Imperial College hosted a Computer Generated Artworks exhibition as part of the London Design Festival. Six artists who use computers in novel ways to generate art displayed their artworks in the exhibition, including the Department of Computing's Dr Simon Colton.

Dr Colton has designed software which enables PCs to paint pictures. Given a digital image, without any intervention from a human, his Triptych software can produce artistic versions of the image. Unlike most other graphics software, Triptych actually paints the picture stroke by stroke in front of your eyes, and can often take hours to produce an artwork. Dr Colton displayed some of Triptych's creations at the exhibition, such as the sketch of the Swiss Re building and a reinterpretation of Vermeer's Girl with a Pearl Earring.

Dr Colton is fascinated by the role computers have to play in modern art. He said: "Most computer programs aren't creative because they lack either skill, appreciation or imagination. Most people are prepared to accept now that computers can perform many intelligent tasks, but the jury is out on whether computers can be creative – this may well be the last facet of intelligence we relinquish to the computer."

Adding that creative computers are nothing for human artists to be afraid of, Dr Colton comments: "The potential for creative computers is huge. Maybe we could get to the point where computers will make up jokes, iPods will generate new tracks and the fridge will provide a new recipe for you based on its contents."

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Imperial students engineer success at international competition

In November 2006, a team of undergraduate students from Imperial successfully beat off competition from 37 student teams including Cambridge, MIT, Harvard and Princeton, in a groundbreaking competition to create the world's first genetically engineered machines.

The international Genetically Engineered Machines (iGEM) competition involved teams carrying out research projects in the emerging field of synthetic biology. Imperial competitors set out to modify

bacterial DNA to create the world's first biologically-based stable oscillator within a population of bacterial cells. They gained first prizes for best project website documentation, and best measurement and part characterisation, coming second place overall.

Careers fair helps engineering's bright sparks plan for the future

A selection of the UK's most prestigious engineering companies attended the second annual Imperial Engineering Fair in October, organised by Imperial's Careers Service in

collaboration with the Engineering Students' Union. BP, Shell, Schlumberger, EDF Energy, ExxonMobil, Atkins, Rolls Royce, Rio Tinto, IBM and ICI were among the 34 companies exhibiting, answering questions from over 1,500 students and handing out details of their graduate recruitment schemes and other job opportunities.

Remembering Professor John Lever

With great sadness, the College learnt in September 2006 of the death of Professor John Lever, Head of the Department of

Bioengineering and member of the College since 1973. He is remembered by colleagues as an outstanding researcher and teacher, dedicated to the welfare of his students and the running his department.

"One of John's outstanding features was his interest in teaching. He pushed the idea that the department should be teaching undergraduates. Today's successful and popular bioengineering course is very much due to him," said Professor Colin Caro, his colleague of over 30 years.

Imperial news_Medicine

Helping hearts to heal

Mechanical artificial hearts can be used to return severely failing hearts to their normal function, potentially removing the need for heart transplantation, according to new research. The mechanical devices, known as left ventricular assist devices (LVADs), are currently used in patients with very severe heart failure whilst they await transplantation. The new study, published in the *New England Journal of Medicine*, shows that using an LVAD combined with certain drug therapies can shrink the enlarged heart and enable it to function normally once the LVAD is removed.

Researchers from Imperial College London and the Royal Brompton and Harefield NHS Trust gave the full combination therapy to 15 severely ill patients, 11 of whom recovered. Of these, 88 per cent were free from recurrence of heart disease five years later and their quality of life was measured as being nearly normal.

Professor Sir Magdi Yacoub, of Imperial's Heart Science Centre and the Royal Brompton and Harefield NHS Trust, said: "The improvement observed was far greater than what has been reported to date for any other therapy in patients with severe, but less advanced, forms of heart failure. The study also highlights the fact that end-stage heart failure can be reversed and that the heart has the capacity to regenerate itself. It therefore stimulates the search for other strategies and more therapeutic targets in this expanding field of regenerative therapy."

Faculty of Medicine celebrates its successes

Academics, clinicians and administrators from the Faculty of Medicine and associated NHS Trusts celebrated the Faculty's successes at its annual awards ceremony in October 2006. It included a thought-provoking lecture on the need to address global inequalities, entitled *Global health: diagnosis, prognosis and management*, by distinguished guest speaker Professor Solomon Benatar.

Opening the ceremony, Professor Stephen Smith, Principal of the Faculty of Medicine, summarised the Faculty's many achievements in research and teaching over the past year. Professor Smith said: "2006 has been an exciting year for us. We have just been ranked by *The Times Higher Education Supplement* as fourth in the world for biomedicine and that's a major achievement of which we can be justly proud.

"We have had numerous successes in attracting major initiatives such as the new Cancer Research UK and Department of Health-funded Experimental Cancer Research Centre, and further

collaborations with the NHS and other academic partners to establish major new centres for research into diabetes, healthcare technology and genetics," he added.

Professor Nirmal Ganguly, Director General of the Indian Council of Medical Research; Professor Patrick Vallance, Senior Vice President of Drug Discovery at GlaxoSmithKline; and Professor John Savill, Vice Principal and Head of the College of Medicine and Veterinary Medicine at the University of Edinburgh were awarded Faculty of Medicine Fellowships for outstanding distinction in their fields. The Faculty also awarded 16 Long Service Recognition Awards, which honour the input of its longest serving members to the academic life of the College's medical community.

Deadly frog disease is linked to climate change

Climate change in Europe is worsening the impact of a deadly disease which is wiping out vast numbers of amphibians, according to new research published in the journal *Proceedings of the Royal Society B*.

Researchers from Imperial College London and two institutions in Madrid found a correlation between significant warming of the local climate in a mountainous region of Spain between 1976 and 2002 and the emergence of the fungal disease *Batrachochytrium dendrobatidis* (BD) in the area. The fungus infects amphibians' skin and is believed to cause disease by interfering with the skin's ability to absorb water.

The researchers suggest it is likely that the increase in the number of BD-related mass mortalities is due to a combination of factors relating to climate change. As the body temperature of cold blooded amphibians is linked to their surrounding environment, changes in external temperature may affect their bodies' ability to respond to disease. Milder winters may also allow BD to survive and grow throughout the year.

Dr Matthew Fisher, Department of Infectious Disease Epidemiology, said: "You can't overstate how serious this pathogen is – it is the worst infectious disease ever recorded among vertebrates in terms of the number of species impacted, and its propensity to drive them to extinction.

"Climate change appears to be changing patterns of disease and previously resistant species are becoming highly infected and even, in a number of cases, becoming extinct," he added.

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Music therapy may improve schizophrenia symptoms

Music therapy for patients with schizophrenia can improve some of the symptoms of the disorder, according to a new study published in the *British Journal of Psychiatry*.

Eighty-one patients were randomly selected to receive music therapy or standard care alone.

Those receiving music therapy showed greater reductions in general symptoms such as depression and anxiety, and the negative symptoms of schizophrenia such as emotional withdrawal.

Immune system discovery could aid fight against TB

New research identifies a receptor on host cells which triggers immune cells to respond to the slow-growing bacterium *Mycobacterium tuberculosis*. Without this receptor, known as CCR5, immune cells did not receive the signal from CCR5 to attack the invading bacterium.

The findings, by a team including scientists from Imperial, could enable a novel vaccine or immunotherapy to artificially start the immune response in the same way as CCR5, boosting the immune response to TB.

Recognition for cardiology experts at World Congress of Cardiology

Kim Fox, Professor of Clinical Cardiology, has been elected President of the European Society of Cardiology (ESC), and heart transplant surgeon Sir Magdi Yacoub, Professor of Cardiothoracic Surgery, was awarded the prestigious Gold Medal of the ESC for his contributions to cardiology.

Sir Magdi has led research into many areas of cardiology including a study looking at organ rejection after transplantation and work to produce a tissue-engineered aortic heart valve.

Prestigious Research Council role for Faculty deputy

Professor Chris Kennard, Deputy Principal of the Faculty of Medicine, has been selected for the Council of the Medical Research Council (MRC). Professor Kennard will also chair the MRC's Neuroscience and Mental Health Board, which oversees the award of grants to scientists in this area. Professor Kennard's research interests cover various aspects of cognitive neuroscience, relating to visual and oculomotor function. His appointment will run until March 2010.

Waterborne infectious diseases could be consigned to history



Waterborne infectious diseases, which bring death and illness to millions of people around the world, could largely be consigned to history by 2015 if global health partnerships integrate their programmes, according to Professor Alan Fenwick. He argues that up to seven neglected tropical diseases, such as schistosomiasis, intestinal worms and the eye infection trachoma which causes

blindness, could be brought under control, with infection by some eliminated entirely, if existing programmes increased their coverage.

The donation of drugs by pharmaceutical companies, together with financial donations from foundations, is already having a sizeable impact, with numbers given treatment for these diseases increasing from virtually zero in 1986 to between 20 and 80 million individuals annually in 2006.

More funding is required to convince decision makers of the benefits of treatment, to improve health education materials and to deliver the drugs to those who need them.

Professor Fenwick writes: "The current situation in Africa is such that most people living close to major rivers and lakes need not be subjected to the waterborne diseases that previously plagued them. The programmes to prevent death, blindness and disfigurement have proved that they can work, and by 2006 they are reaching ever more people with donated or inexpensive drugs. The health of children in areas that have been reached is improving, and they are gaining a better start in life."

Further hope that vitamin D can fight breast cancer

Vitamin D may help curb breast cancer progression, according to a study published in the *Journal of Clinical Pathology*. The Imperial College authors measured the levels of vitamin D in the blood serum of 279 women with invasive breast cancer.

The 204 women with early stage disease had significantly higher

levels of vitamin D (15 to 184 mmol/litre) than the 75 women in the advanced stages of the disease (16 to 146 mmol/litre). The exact reasons for the disparity are not clear, nor is it known whether the lowered levels of vitamin D among those with advanced disease are a cause or a consequence of the cancer itself. Taken together with results from previous studies however, leads researchers to believe that lowered levels of vitamin D may promote the progression of the disease to its advanced stages.

Dr Carlo Palmieri, Department of Cancer Medicine, and lead author on the paper, said: "The next step in this research is to try and understand the potential causes and mechanisms underlying these differences and the precise consequences at a molecular level. We also need to look at the potential clinical implications of monitoring and maintaining high circulating vitamin D levels in breast cancer patients. By answering these questions we may be able to improve the treatment of women with breast cancer."

Early warning for schizophrenia found in spinal fluid

Newly diagnosed schizophrenic patients have higher levels of glucose in their brain and spinal fluid than healthy individuals, acting as an early warning sign of the development of schizophrenia, according to new research published in *PLoS Medicine*. These findings could be used for early diagnosis and treatment of the condition and could help them to develop more effective drugs.

The team from Imperial College London, the University of Cambridge and the University of Cologne analysed cerebrospinal fluid (CSF) from 152 volunteers. Of these, 54 had recently been diagnosed with schizophrenia, 28 were receiving some form of treatment for schizophrenia and 70 were healthy volunteers.

Alterations were found in the way the body metabolised glucose in the 54 diagnosed, but untreated, volunteers when compared with the group without schizophrenia.

In the group receiving one type of drug therapy, there were marked improvements in glucose levels when they were treated after their first psychotic episode, underlining the importance of early detection and treatment.

Glucose is the main energy source for our bodies but evidence suggests that those with schizophrenia use a different energy source in their brains, called lactate. This means that glucose levels remain high in the brain because the glucose is not being used effectively.

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New test for multi-drug resistant TB

Dr David Moore and Professor Jon Friedland of the Wellcome Trust Centre for Clinical Tropical Medicine at Imperial College, led an evaluation of a cheaper, faster and more accurate method of diagnosing tuberculosis. It showed that the microscopic observation drug susceptibility (MODS) test allows doctors to diagnose TB twice as quickly as previous gold-standard tests and to identify multi-drug resistance in a third of the time.

Sea coral hope for fighting gastroenteritis

Research published in the *Journal of Biological Chemistry* finds that a small molecule isolated from a sea fan coral can inhibit the way noroviruses, a major cause of gastroenteritis, create proteins and replicate within cells.

Using similar viruses to those which cause gastroenteritis, researchers found that these viruses make proteins using a unique mechanism. Therapies could inhibit the way noroviruses create proteins without damaging the creation of normal proteins in healthy cells.

Cancer research boosted as Imperial chosen for new research centre

A £2 million grant from Cancer Research UK and the Department of Health to establish an Experimental Cancer Research Centre has provided a major boost to cancer research at Imperial College.

The College will have one of 17 centres across the country. Centres will share knowledge and resources to ensure that the UK can translate lab-based cancer research into treatments for cancer patients as quickly as possible.

Hope for children hospitalised with severe malaria

A new treatment could save the lives of hundreds of thousands of African children who die each year from severe malaria. Researchers identified depletion in fluids as an important factor contributing to the critical illness.

They postulated that fluids could be replaced safely without risk of brain swelling if albumin, a molecule that holds water inside blood vessels, is included in the resuscitation fluid. A remarkable reduction in mortality was observed in children receiving albumin resuscitation.

Imperial news_Natural Sciences

Sharks in danger from fashion for fin soup



Research published in the October 2006 edition of *Ecology Letters* warns that the number of sharks being killed is three to four times higher than previously thought, putting some species at serious risk. Shark fins are a highly valued commodity, and fin soup, long regarded as a luxury in China, now commands

up to US \$100 for a bowl serving four people.

The study, led by Dr Shelley Clarke, Division of Biology, investigated the annual number of globally traded shark fins, by species, at auction in Hong Kong, the world's largest fin market. They were then able to convert species-specific fin weights into worldwide estimates of shark catch numbers.

The results show that between 26 and 73 million sharks are killed each year, equivalent to 1.21 to 2.29 million metric tonnes per year. This is considerably higher than the 0.4 to 0.6 million metric tonnes reported to the United Nations Food and Agriculture Organisation.

Dr Clarke explained: "The fin trade is continuing to expand and thus the pressure on shark populations is constantly increasing. We found that even a very productive species, the blue shark, is being caught at levels which may already be unsustainable."

The next small thing

A unique multidisciplinary UK research facility at the forefront of delivering applied nanotechnology solutions was officially opened in November 2006.

A joint venture between Imperial College London and UCL, the London Centre for Nanotechnology (LCN) harnesses the world class expertise of the two institutions across physical, engineering and biomedical sciences to meet the needs of society and industry, particularly improving patient care.

The £25 million centre occupies a purpose-built eight-storey facility

in Bloomsbury, as well as extensive facilities within departments at Imperial's South Kensington Campus. The fabric of the Bloomsbury building had to be purpose-designed for ultra-low vibration because experiments with molecules are normally so sensitive that the vibrations of a person walking at the other side of the building could destroy them.

Of the new facility, Professor Tim Jones, co-Director of the LCN, said: "The LCN is truly interdisciplinary in its nature, bringing together leading researchers from two of the UK's most successful universities. Researchers from science, engineering and medicine are working together on projects that require skills that no individual scientist or traditional academic department could contribute alone. We have a unique balance of experimental work and theoretical modelling, enabling the LCN to tackle some of the most important challenges in areas as diverse as energy, healthcare and information technology."

Chemistry goes green at Imperial

Imperial College London has announced a new one-year, full-time Master of Research (MRes) course in Green Chemistry, with its first intake in October 2007. The course will enable postgraduate students to develop their skills in a rapidly growing field that aims to clean up the chemical industry, making industrial processes cleaner, greener and more efficient for the benefit of the environment.

The new course will build on recent successes in reducing energy use and hazardous waste from chemical processes by supporting future scientists to hone their skills in the field. Offering a multidisciplinary approach to the subject, it will expose students to topics as diverse as biotechnology, renewable energy, environmental policy, and chemical synthesis and catalysis, with both taught and research components.

Course leader, Professor Tom Welton, said: "The stereotypical image of the energy guzzling chemical industry, polluting and creating hazardous waste products is no longer compatible with governments' and consumers' concern for the environment.

"The chemicals industries have made a good start, but we need to develop the next generation of researchers, so that chemical and pharmaceutical companies can continue to provide much needed products without putting such a strain on our environment and natural resources. This course is ideal preparation for a PhD and research career in this essential field."

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New images of our neighbouring galaxy revealed

In November 2006, scientists, including Dr David Clements, Research Fellow in Imperial's Department of Physics, analysing data from the Japanese AKARI satellite revealed brand new images of the Large Magellanic Cloud, a dwarf galaxy orbiting the Milky Way. The images will provide researchers with important information on the content of the vast, dusty clouds of interstellar gas inside which new stars are formed. It is hoped that these images will provide key clues as to how galaxies evolve over time, and how stars like our sun, are born.

Young researcher honoured

Dr Abigail Woods, Lecturer in Imperial's Centre for the History of Science Technology and Medicine, was awarded the World Association for the History of Veterinary Medicine's (WAHVM) Young Scholar prize in October 2006.

The prize, in its inaugural year, is to be given every two years. Dr Woods' research interests are focused on veterinary professionalisation and the social history of livestock disease.

The science of colour brings art to life for school pupils

In October 2006, the Aimhigher *Colour Chemistry* event at Chelsea College of Art and Design saw recent graduates from Imperial's Department of Chemistry working together with art staff from Central St Martin's College of Art and Design. They offered 41 London school children and their teachers a day of colourful creativity and exciting science in the form of hands-on workshops on the theme of colour, including chromatography and diffraction of light techniques.

Imperial student wins *Daily Telegraph* Science Writing Competition

An Imperial student was named one of Britain's outstanding young science writers after winning *The Daily Telegraph's* science writing competition, which attracted over half a million entries. Biology student Leili Farzaneh won the 16 to 19-year-old category with her piece on genetic modification, which centred on the idea of using a bacterium's natural method of genetic modification to adapt plants, enabling them to work as a factory to produce different substances.

Scientists create first working invisibility cloak

In October 2006, Professor Sir John Pendry, Department of Physics, with a team of researchers from Duke University, demonstrated the first ever working prototype 'invisibility cloak', designed using theory published by the same team earlier in the year.

The Duke University researchers built a cloak, less than five inches across, to provide invisibility in two dimensions, using specially-manufactured metamaterials which 'grab' light heading towards the cloak and make it flow smoothly around the cloak instead of striking it. The Duke scientists then proved that an object inside the cloak is rendered invisible to microwaves. This could, in the long term, have a variety of applications for radar and communications technologies.

The metamaterials used to build the cloak are fashioned into concentric two-dimensional rings. It is thought to be one of the most complex metamaterial structures ever made, with unique circular geometry and electromagnetic properties that vary across its surface, making it interact with magnetic waves in a very specific way.

Sir John said: "Our first paper developed the concept of a cloak but there remained the huge challenge of making this a reality. We knew that no naturally occurring materials would do the job, but the new class of metamaterials which owe their properties to their internal structure rather than their chemistry, have proved yet again that they can meet some of the most extreme challenges."

New spectroscopy facilities opened

A world class, cross-faculty centre for Nuclear Magnetic Resonance (NMR) spectroscopy and the Waters Laboratory of Molecular Spectroscopy were launched at Imperial in September 2006.

The new £5 million, SRIF-funded NMR facility features an extremely powerful shielded magnet, the only one of its kind in London, for studying the composition, structure and interactions of complex molecules at high resolution. The Waters Laboratory contains high-end equipment for mass spectroscopy which will complement the NMR facility's work on defining the structure of molecules. The lab is named after the US Waters Corporation which has funded spectroscopy equipment for the laboratory worth US\$1 million.

The NMR centre was officially opened by Imperial's Rector, Sir

Richard Sykes, who was joined by Arthur Caputo, President of the Waters Corporation, for the unveiling of the Waters Laboratory plaque. Professor Jeremy Nicholson, Head of the Department of Biomolecular Medicine said: "The Waters Corporation's investment in the new mass spectrometry laboratory – together with our new NMR facility – means that the College has a uniquely powerful facility for molecular structure elucidation, which will enable researchers to develop new disease diagnostics based on small molecule biomarkers and to understand molecular mechanisms of disease."

Sir Richard added: "Imperial has a leading international reputation in applying NMR technologies to solving biological problems so I'm delighted to have this new, leading-edge centre on campus. This new cross-faculty facility will mean that NMR and spectroscopy technology can continue to play an important part at the forefront of Imperial's molecular-level research."

Top award for discovery that will change the future of electronics

Professor Russell Cowburn of Imperial's Department of Physics, was awarded the Degussa European Science-to-Business Award in September 2006, for his scientific work and his business plan for developing technology based on magnetic microchips that can store hundreds of gigabytes of information.

The 'spintronic' microchips, which work by using the spin of electrons, will be able to store massive amounts of data on a tiny chip, and would mean that portable devices such as mobile phones, PDAs, and iPods would be able to store vast quantities of image, audio and video files, whilst remaining very small and light.

The award consists of a €100,000 cash prize and the opportunity to attend a business management course at INSEAD, from whom Professor Cowburn will receive business planning consultancy services.

Professor Cowburn said: "My research has proved that spintronic microchips are a workable proposition, which has huge implications for the way everyday electronics devices will work in the future. As mobile technology develops, people are looking for ways to store ever-larger numbers of files on their iPods and phones, and the small, spintronic chips will enable them to do this."

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The panel of judges included President of the Royal Society Lord Rees, writer Bill Bryson, Sir David Attenborough, and *The Daily Telegraph* science editor, Roger Highfield. Leila was presented with her £1,000 prize at a ceremony in November 2006.

Researcher and broadcaster honoured_Imperial academic Dr Armand Leroi, Division of Biology, has been given the 2006 European Molecular Biology Organisation Award for Communication in the Life Sciences, in recognition of his work in communicating genetics, mutations

and human development to a wide public audience.

Dubbed 'the handsome biologist' by *The Guardian*, Dr Leroi's acclaimed 2004 book *Mutants* addressed the fascinating and often misunderstood story of human development. He also scripted and presented television documentary series *What Makes us Human?* for Channel 4 in the UK.

New Director of NERC Centre for Population Biology_Georgina Mace, FRS, was appointed Professor of Conservation Science and Director of the Natural Environment Research

Council's (NERC) Centre for Population Biology at Imperial College's Silwood Park Campus in September 2006.

Professor Mace's new role sees her leading a large team of scientists working on diverse research projects including biodiversity patterns, ecology and evolution. She was formerly Director of Science at the Zoological Society of London.

Top Royal Medal for Imperial physicist_Professor Sir John Pendry, Department of Physics, was awarded the prestigious Royal A Medal by the

Queen in July 2006. The award was made in recognition of Sir John's seminal contributions in surface science, disordered systems, photonics and, most recently, in metamaterials (see above) and the concept of the perfect lens.

The Royal A Medal is awarded annually on the recommendation of the Royal Society for contributions to the advancement of natural knowledge in the physical sciences. The silver gilt medal is accompanied by a gift of £5,000.

feature

WATCHING OVER THE COUNCIL ROOM AT 170 QUEEN'S GATE ARE THE PORTRAITS OF THE COLLEGE'S 12 FORMER RECTORS. ALONG WITH THE CURRENT RECTOR, SIR RICHARD SYKES, THEY HAVE STEERED IMPERIAL FROM ITS PLACE AS A SMALL INSTITUTION WITH 600 STUDENTS AND 12 PROFESSORS TOWARDS ITS CURRENT POSITION AS A WORLD RENOWNED UNIVERSITY.

Imperial's leading men



BY ZOË PERKINS
CONTRIBUTOR ANNE BARRETT

THROUGHOUT THE COLLEGE'S HISTORY, EACH RECTOR HAS built upon the foundations laid by his predecessors; building up Imperial's formidable strength and enabling it to reach the top 10 universities in the world. Our campuses have developed and multiplied, and are today home to a world class teaching environment and world-changing research. Mergers with the west London medical schools have created the hugely successful Faculty of Medicine and directed postgraduate research into new interdisciplinary areas.

The College's Rectors have achieved as much outside of the College as they have done here. An impressive 10 of the College's Rectors have been awarded Fellowships of the Royal Society. Within academia, Sir Eric Ash was recognised for his development of ultrasonic signal processing and imaging. Within industry, Sir Richard Sykes was known first for leading GlaxoSmithKline. Within government, both Sir Henry Tizard and Lord Oxburgh held the position of Chief Scientific Adviser to the Ministry of Defence and Lord William Penney's research on the physics of hydrodynamic waves greatly influenced the development of British nuclear power.

Imperial Matters looks back at the contributions of these 12 remarkable men, now an important part of the College's history, and the legacies they have left Imperial, which will continue to inspire staff and students for another 100 years and beyond.

HENRY BOVEY *Rector from 1908 to 1910*

Henry Bovey had already proved his vision and organisational skills by creating an outstanding Faculty of Engineering at McGill University, Montreal, when he was offered the position of the first Rector of Imperial College. He joined the College in 1908, but ill health forced his retirement in 1910.

SIR ALFRED KEOGH *Rector from 1910 to 1922*

Sir Alfred Keogh, formerly the Director General of the Army Medical Service, was appointed Rector in 1910. He was known as a genial

Rector, who had progressive ideas about pastoral care and the role of women in professional life and academic work. At his request, the Imperial College Women's Club was founded in 1912 to assist female students at the College in practical matters and enable them to take the opportunities they deserved. It still exists today.

Sir Alfred was recalled to the army to take charge of military medical needs during World War I, but kept in touch with Imperial during his absence. The high esteem in which Sir Alfred was held was demonstrated by a collection organised for a portable X-ray machine for military use, which took only a few days to amass.

SIR THOMAS HOLLAND (Royal College of Science 1888)

Rector from 1922 to 1929

Geologist Sir Thomas Holland's career was split between Britain and India. As Curator of the Geological Museum and Laboratory he had proved himself to be an able organiser and administrator, and he became Director of the Geological Survey of India in 1903. When he was appointed Rector of Imperial College, he immediately set about ensuring that the associateships of Imperial's constituent colleges were recognised by the University of London for the BSc degree with Honours. His influence on College corporate life was also felt and he gave impetus to the establishment of the College Hostel (now Beit Hall). He was a very energetic man, with a vision and drive that enhanced any institution for which he worked.



SIR HENRY TIZARD *Rector from 1929 to 1942*

Imperial's longest serving Rector, Sir Henry Tizard, was a chemist and mathematician. He arrived at the College from the Department of Scientific and Industrial Research, where he had been Permanent Secretary. Influential in national scientific institutions, he was Chairman of the Aeronautical Research Committee from 1933, championing the development of radar in the lead-up to World War II.

SIR RICHARD SOUTHWELL *Rector from 1942 to 1948*

It was from the University of Oxford, where he held the position of Professor of Engineering Science and Fellow of Brasenose College, that Sir Richard Southwell joined Imperial as Rector. He continued with his research interests at Imperial but was also instrumental in the opening of Selkirk Hall, a student residence.

SIR RODERIC HILL *Rector from 1948 to 1954*

Sir Roderic Hill was appointed as Rector of Imperial College following World War II, during which he had been Commander-in-Chief of Royal Air Force Fighter Command. At Imperial, he gave great consideration to the sciences of which he knew little. A charming and energetic man, he saw the need for students to gain a rounded education. He introduced general studies and discussions at Silwood Park, and lunch time music recitals and arts lectures at South Kensington. He was appointed Vice Chancellor of London University in 1953, a post his father had also held.

SIR PATRICK LINSTEAD (Chemistry 1923, PhD 1925)
Rector from 1954 to 1966

Sir Patrick Linstead took both his first degree and PhD at Imperial, completing in 1925. His academic career then took him to the University of Sheffield and Harvard, where his interests were the chemistry of phthalocyanine dyes and allylic tautomerism. Sir Patrick became Rector of Imperial midway through a government-driven expansion, and he took control of the scheme with great drive; modernising and expanding the College in terms of buildings, student numbers and the development of academic facilities.

SIR OWEN SAUNDERS *Rector from 1966 to 1967*

Sir Owen Saunders held a number of roles at Imperial throughout his career. Initially, he was a lecturer in the Department of Mechanical Engineering and he returned in 1946 to become Head of the Department. In 1964 he resumed his involvement with the College as Dean of the City and Guilds College before becoming Acting Rector upon the sudden death of Sir Patrick Linstead in 1966. It was a role he held for only a short time before being appointed Vice Chancellor of the University of London.

THE RIGHT HONOURABLE LORD PENNEY (Mathematics 1929, PhD 1931) *Rector from 1967 to 1973*

Obtaining his undergraduate degree and PhD from Imperial was the start of Lord William Penney's long relationship with the College. He then embarked on an academic career at the Universities of Wisconsin and Cambridge, before coming back to the College as a reader in mathematics. Lord Penney's research, on the physics of hydrodynamic waves, led to his investigation of the blast effect of the atomic bomb, and work in Hiroshima and Nagasaki.

Intending to return to academia earlier, he was further delayed by leading the development of British nuclear weapons until 1967, when he finally returned to the College as Rector.

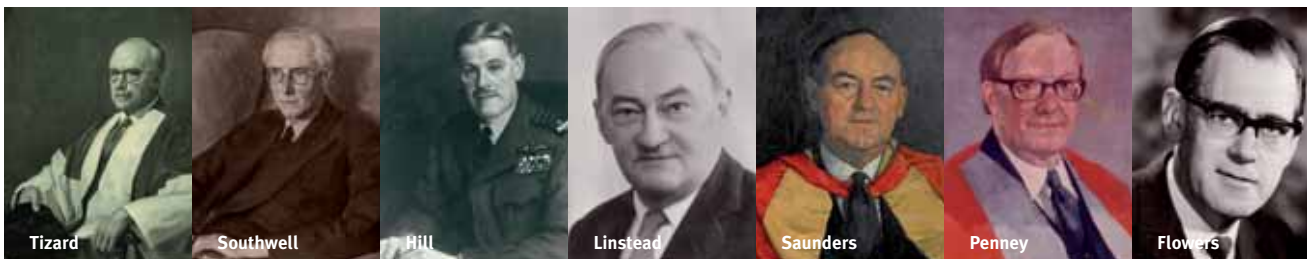
THE RIGHT HONOURABLE LORD FLOWERS*Rector from 1973 to 1985*

Today, interdisciplinary research to tackle the major challenges that cross the functional areas of science, engineering and medicine is firmly established as part of the College's strategy. Lord Brian Flowers was instrumental in creating this approach when he joined the College as Rector in the early 1970s. He explains: "A major change that I foresaw the need for, from my experience at the Science Research Council, was the coming importance of what is now called interdisciplinary research and teaching."

Initially, the College's interdisciplinary activities were led by the MSc course in Environmental Technology, which brought together both biological and geological issues. Lord Flowers says: "Due to experience I'd had as Chairman of the Royal Commission on Environmental Pollution, as well as the general tenor of opinion in the scientific world and the public at large, environmental issues were coming to the fore." He continues: "Gradually there came about a sense of environmental technology, which meant technological approaches to the solution of practical environmental problems. That flourished and, in particular, we set up an exceedingly good MSc programme that began from almost nothing and grew to something quite strong that has lasted to this day."

Change within the College was not the sum of Lord Flowers' ambitions when he took on the role: "I spent quite a sizeable fraction of my time outside the College doing other things but they were all things that brought to me and, I hope, to those I interacted with, a broader view of the role of science and technology in human affairs. I think Imperial gained from it – I certainly did."

Lord Flowers' was a founder member of the Social Democratic Party and, as a life peer, spoke on issues relating to science, education, energy and the environment. His connections in the political arena have had a lasting impact on the College: "I was very concerned, of course, about the input into politics that the universities had, and also the influence of politics on the universities."



Tizard

Southwell

Hill

Linstead

Saunders

Penney

Flowers

HENRY LAMB, WILLIAM NOTMAN, MCGILL UNIVERSITY ARCHIVES, ELLIOTT AND FRY, CUTHBERT ORDE, ROBERT SWAN, MICHAEL NOAKES, SIR ROBIN DARWIN, WALTER BIRD

feature

"It became clear to me that Imperial College's efforts could be harnessed to the efforts of parliament to try to understand what science and technology was all about. So I encouraged members of staff, mainly professors, to take part in select committees and investigations. That did slowly develop a relationship that continues to this day."

The lighter side of Lord Flowers' appointment as Rector was the relationship he developed with students; Lord and Lady Flowers were famous for their twice-termly beer and bangers parties. Lady Mary Flowers recalls: "I must say they were marvellous because you can imagine the mess when the students had gone."

Lady Flowers remembers one particular party: "We found the sausages were going rather fast and I had to keep on sending down to the kitchen for more. I couldn't think why. You know, I'd allowed about eight per capita and that's a hell of a lot of sausages! Then I realised that there was a competition afoot to see who could sink the most sausages, so we found the culprits and rationed them!"

Lord Flowers' term at the College came to an end in 1985, but not without one final beer and bangers party, this time thrown by the Students' Union for Lord and Lady Flowers, as a gesture of their appreciation for the 12 years they had given to the College.

SIR ERIC ASH (Electrical Engineering 1948, PhD 1952) *Rector from 1985 to 1993*

Sir Eric Ash instigated the beginning of what was to be a new chapter in the College's history with the merger of St Mary's Hospital Medical School with the College in 1988. The merger was viewed by Sir Eric as the most important developmental step during his time at the College: "This to me was highly desirable. So much of the science in the College, certainly in the life sciences but also in physics, had a direct link to medical needs and potential medical therapies, that it seemed sensible for the College to develop a medical school."

This fundamental change in the College's structure was reflected in its change of name to Imperial College of Science, Technology and Medicine.

"One of my great hopes was that there would be lively interaction between the [then] Management School and the scientific and engineering departments," says Sir Eric of the Management School, which he also played a significant role in establishing. He continues: "There were two departments which formed the basis of it, but they were both very specialised and in no way played the role of a proper management school. By the time I left, that had been achieved and since then the Business School has become rated one of the best in the UK and certainly somewhere in the top league of world business schools."

It was not just the academic structure of the College that was to change during Sir Eric's term; he instigated a lasting bond with architects Foster and Partners. As a result numerous stunning buildings have since sprung up on the College's South Kensington Campus; the striking Main Entrance and Tanaka Business School on Exhibition Road and, more recently, the blue cube of the



Ash

Oxburgh

Faculty Building. He explained: "We thought there was a need for a College architect and we asked Sir Norman Foster whether he would be prepared to do this. I am glad to say he was. He created the main College plan with which we are still, I think, very much in tune at the moment."

Whilst at the College, Sir Eric won the Royal Society Royal Medal in "recognition of his outstanding researches on acoustic microscopy leading to wholly new techniques and substantial improvements in resolution of acoustic microscopes." He had previously won the Institution of Electrical Engineers' Faraday Medal.

Upon leaving the College in 1993, Sir Eric went on to roles at BT, the Institution of Electrical Engineers, UCL, the Student Loans Company and the Royal Society.

THE LORD OXBURGH *Rector from 1993 to 2000*

Lord Oxburgh, previously Chief Scientific Adviser to the Ministry of Defence, joined the College in the wake of the merger with St Mary's Hospital Medical School and with the expectation that he would implement a scheme of further medical mergers to construct a coherent medical school. During his seven years at the College, a number of medical institutions joined Imperial: the National Heart and Lung Institute in 1995, the Charing Cross and Westminster Medical School and the Royal Postgraduate Medical School in 1997, and the Kennedy Institute of Rheumatology in 2000.

This was no mean feat and there were many challenges to overcome; not least the complicated network of relationships such as that with the National Health Service. As Lord Oxburgh explained: "The complexity of the medical problem was, of course, that medical education and health service provision are intimately related because in teaching hospitals you have teaching and healthcare delivery going on together."

The Sir Alexander Fleming building, another new building by Foster and Partners, provided the answer to one of the project's biggest questions; how to integrate several distinct organisations and many individuals. "Pretty early on I became clear that we would only get a coherent medical school if there was a new medical school heart, if I can put it that way," says Lord Oxburgh, "It had to be a physical heart, a building, which did not historically belong to any of the component parts." The building proved a success, not only architecturally, but socially as well, fostering a feeling of collaboration between the components of the medical school as they progressively joined the College.

The benefits of the new medical school were felt throughout the College. Lord Oxburgh comments: "Engineering in future was going to be able to look to the medical area for a lot of its support; and a lot of its applications, along with those of physics and chemistry, would be in the biomedical area." Biomedical engineering was the single area of interdisciplinary research that grew most significantly during Lord Oxburgh's term.

Lord Oxburgh's tenure also encompassed the merger of Wye College with Imperial in 2000. A centre of learning since its foundation by Cardinal John Kempe in 1447 as a priests' college, Wye's strengths in food, agriculture and the environment, and complementary activities at Imperial were described by Lord Oxburgh as a "powerful combination that will stimulate interdisciplinary research and new initiatives." Research continues at Wye and Imperial's Centenary year sees another historic event – with the University of Kent to run the popular Applied Business Management (ABM) undergraduate and postgraduate degree courses.

CELEBRATIONS WERE OFFICIALLY LAUNCHED ON 30 JANUARY 2007 with a day of special activities across each of Imperial's campuses, culminating in the first of a series of Centenary Prestigious Lectures. Our first speaker of the year was the Rector, Sir Richard Sykes, who delivered a lecture on the theme of *100 years of living science*, which looked back on a century of achievements and contributions.

LOOKING BACK

Written by Dr Hannah Gay, Senior Research Investigator at the College's Centre for the History of Science, Technology and Medicine, *History of Imperial College London, 1907–2007: Higher Education and Research in Science, Technology and Medicine* is the first major history of the College to be produced.

THE CENTENARY COMMEMORATES THE DRAWING TOGETHER IN 1907 OF THREE NINETEENTH-CENTURY INSTITUTIONS, THE ROYAL SCHOOL OF MINES, THE ROYAL COLLEGE OF SCIENCE AND THE CITY AND GUILDS COLLEGE, TO FORM IMPERIAL COLLEGE OF SCIENCE AND TECHNOLOGY.

Celebrating 100 years of living science

BY ZOË PERKINS

Composed of a collection of historical essays, it tells the story of Imperial as one of the UK's premier research and teaching institutions. The book will be available from May 2007 and you can place an advance order via the Imperial College Press website at www.icpress.co.uk.

JOIN THE CELEBRATIONS

2007 marks a major landmark in the history of the College, and to celebrate Imperial has put together a year-long programme of events to bring together students, staff, alumni and friends of the College, including special lectures, music, art and sporting events that are open to all. You should have received your copy of our Centenary Events Calendar in January. Email alumni@imperial.ac.uk if you would like to receive a further copy or if this mailing failed to reach you.

The Office of Alumni and Development, along with many of our UK-based and international alumni groups, have put together a series of events specifically for alumni. One of the highlights of this programme is the 2007 Alumni Reunion taking place over the weekend of 14–16 September 2007. Renowned academics from across the College will provide an engaging lecture programme, complemented by tours of the College's departments and other campus activities. Social events, such as the reunion dinner, will provide plenty of time to catch up with former classmates and reminisce about student days. Your reunion booking form has been included in this mailing.

A full calendar of Centenary events and details of how to book can be found at www.imperial.ac.uk/centenary/events.

CENTENARY ACTIVITIES IN LONDON

Engineers, scientists and medics took the opportunity to showcase the College's Centenary at the 791st **Lord Mayor's Parade** in November 2006 and then again for the annual **New Year's Day parade** through Westminster. A special Centenary float put together for the Lord Mayor's parade, which featured a model of the Queen's Tower, was designed by the City and Guilds College Union to celebrate the College's heritage.

On Sunday 22 April 2007, Ben Ryall will become the first individual to represent the College in the **2007 London Marathon**, after the College was awarded a silver bond

charity place for its Centenary year. Ben is a recent alumnus and newly appointed staff member of the College who completed both his undergraduate and postgraduate studies at the College and is now working as a postdoctoral researcher in the Division of Biology.

As well as currently undergoing a stringent training programme with a personal trainer at *Ethos*, Ben is also busy fundraising for the Student Opportunities Fund. You can pledge your sponsorship at www.imperial.ac.uk/alumni/marathon2007.

IMPERIAL'S FUTURE

Imperial's Centenary year is as much about looking to the future as it is about celebrating the College's heritage. The College's official hundredth birthday on 8 July 2007 marks a new chapter in the College's history, as we withdraw from the University of London and embark on a new journey as a degree awarding institution in our own right.

Investing in the College's future development and success is vital to the continuation of our major contributions to healthcare, industry and society. This is why we have chosen our Centenary year to launch a Centenary Campaign that aims to raise £207 million of funding for a number of flagship projects through the first decade of the twenty-first century. With this support, we can continue to work on some of the most important problems the world faces, give our faculty and students an academic environment that matches their talent, and inspire the next generation of great minds.

FIND OUT MORE

The Centenary website is a great way of keeping up to date with the latest news and events from the College during the year. It brings together interesting facts and figures about the College's past, as well as details of how we're planning for the future.

Over the course of the year we're gathering 100 stories to celebrate **100 years of living science**. Some of our alumni have already contributed their stories and photographs, which might bring some of your own long-forgotten memories flooding back! You are invited to share your own memories and photographs too. New stories will be added throughout the year so keep visiting the site.

www.imperial.ac.uk/centenary



feature

Engineering a bright future: *EnVision 2010*



BY LIZ GREGSON

BUILDING AND FLYING A LIGHT AIRCRAFT, OR DESIGNING YOUR own classroom, perhaps doesn't sound like an activity that would be part of the undergraduate curriculum, but these are just two of the ways in which the Faculty of Engineering is looking to innovate and enliven programmes of study for current and future students.

On 31 January 2007, the Faculty of Engineering officially launched *EnVision 2010*, an ambitious initiative aimed at placing Imperial College at the international forefront of engineering education, with a particular focus on how the Faculty prepares its undergraduates for their future careers. It aims to build on the Faculty's already excellent international reputation to ensure that the College's position within the world's top five institutions for engineering education is sustained and globally recognised by 2010.

The aims of *EnVision 2010* are to:

- **make engineering more attractive and relevant to new generations;**
- **ensure that Imperial continues to draw the very best, most motivated undergraduates with a clear interest and enthusiasm for the opportunities that engineering offers;**
- **excite and inspire engineering undergraduates, in a supportive and challenging environment;**
- **send out into the world engineering graduates with fantastic career prospects who can fulfil their aspirations to make the world a better place, and have the knowledge, skills and aptitudes necessary to become leaders and innovators in international industry;**
- **place Imperial College firmly at the forefront of innovation in engineering education, enhancing its international standing.**

The Faculty is looking to fulfil these objectives by improving its educational ethos, facilities and infrastructure, as well as the level of educational innovation. Conceived as a response to increasing international competition in engineering education, *EnVision 2010* will also feed back on the changing needs of internal and external stakeholders in relation to undergraduate engineering courses.

As Dr Ruth Graham, Director of *EnVision 2010*, explains: "The project is about challenging the way that our undergraduates are educated so that we ultimately arrive at an optimum environment for teaching. Based on feedback from a wide variety of stakeholders, the major aims of the project are to find ways to increase students' understanding of the practical application of engineering knowledge, develop their personal and professional skills, and celebrate exciting approaches to education."

The Faculty of Engineering has been considering its strategy for engineering education since November 2003. Since then, opinion about the quality and reputation of our engineering education has been gathered from over 3,000 students, academics, alumni and representatives from industry. Based on this information, as well as their own personal experience, a 30-strong group that includes heads of departments, students, academics and external experts, has been involved in analysing Imperial's current provision in engineering education and developing proposals for change in three areas:

- **developing the curriculum and teaching for undergraduates and coordinated schools outreach initiatives;**
- **developing exciting purpose-built classrooms, lecture theatres and learning spaces;**
- **making sure that we encourage, support and celebrate exceptional approaches to teaching.**

Phase two of the project, which began in January 2006, has started to develop detailed proposals about how the undergraduate engineering education programme at Imperial

might be improved and what resources will be needed to make such changes a reality.

Between January 2006 and October 2010, a significant programme of work will take place to make changes in these areas. Over the coming year, work will include developing a series of exciting hands-on undergraduate projects, such as the opportunity for first year Aeronautics students to build and fly a light aircraft. These projects will be designed to motivate students, strengthen their understanding of the engineering fundamentals and develop their engineering skills and judgement. The project will also develop new outreach activities to inspire and motivate young people to consider studying engineering at university.

EnVision 2010 has already benefited from the invaluable advice of some of Imperial's engineering alumni who, as recipients of an Imperial education and the employers and colleagues of future generations of Imperial engineers, have offered insightful views on current perceptions and future direction. The *EnVision 2010* project team will continue to work closely with alumni of the College as the project develops further.

Initial activities to enthuse and inform engineering students about the *EnVision 2010* project included a competition in June 2006 that offered a £1,000 first prize for the winning student design of a purpose-built engineering learning space.

Winners Paul Lee and Harriet Tennent, then both fourth year students in the Department of Civil and Environmental Engineering, impressed the judges with their holistic design. They designed 'Lyceum', a low energy interactive building with flexible spaces that could be used by different engineering disciplines, allowing students to be involved in running the building's services as an accredited part of their course.

The design included project spaces for team-based learning; a drawing room for technical drawing and geological mapping classes; and a student-run café. It also incorporated a quiet study area with tree-like columns to create a 'tranquil forest environment'.

Harriet explained that she and Paul tried to create a flexible building which could be used for a multidisciplinary engineering first year. The spaces were designed to be moved around and used in different layouts. She said: "I'm ecstatic and really excited to have won, I wasn't expecting it."

Dr Ruth Graham said of Lyceum: "*EnVision 2010* is all about enriching engineering students' learning experiences and Paul and Harriet's building would be a really dynamic learning environment. They have obviously given a lot of thought to the way the building could be used by different disciplines and it's filled with practical, adaptable spaces. There are also some great spaces for team projects and interdisciplinary working.

"This competition has been a great way to find out what the ideal engineering learning space looks like from a student's point of view. The strongest elements of all the entries will feed into the implementation phase of *EnVision 2010* and help us when we're thinking about how to revitalise many of the learning spaces at the College," she added.

Visit the *EnVision 2010* website at www.imperial.ac.uk/envision or email envision@imperial.ac.uk for more information.

EnVision 2010 incorporates the input and expertise of a wide variety of stakeholders. Here's what *EnVision 2010* means to them.

"The Envision Project is important to me because it offers us, the students, a direct say in the direction and motivation of our degree at Imperial. The project is an effort by members of the Faculty of Engineering, both students and staff, to enable Imperial to be one of the top colleges for engineering in the world and I am glad to be a part of that."

SIDDHARTH SINGH

ELECTRICAL ENGINEERING UNDERGRADUATE

"Whilst studying chemical engineering at Imperial, I benefited from several industrial placements. These proved to be invaluable for getting a realistic view of what skills I needed to learn at university, which consequently helped me secure graduate jobs. Industry is now rarely recruiting graduates in large numbers, so I see it as being vital that degree courses are not just about the basic theory, but actually prepare students for the real world."

AMY ELLIOT (Chemical Engineering 2002)

ENVIRONMENTAL AND EXTRACTION TECHNOLOGY ENGINEER
AT INEOS FLUOR

"I show my students examples of where mathematics is applied in engineering. This keeps their education grounded in the real world and it may also inspire them to consider engineering as a career! It is important for me to know that in recommending Imperial College London to them, I am recommending a place of learning where the engineering education they will experience is the best in the world."

DR TREVOR ADDENBROOKE

MATHEMATICS TEACHER, SACRED HEART HIGH SCHOOL, LONDON

"I welcome this project. Imperial academics always want to be the best at what they do, and that includes education. If we are consistently to be placed in the top five worldwide, we need to make sure that we recruit the best students and deliver top quality, future-proof engineering programmes in the optimal way. The faculty-wide collaboration in this area means that real and lasting improvements for all departments can be achieved."

PROFESSOR NILAY SHAH

DIRECTOR OF UNDERGRADUATE STUDIES, DEPARTMENT OF
CHEMICAL ENGINEERING AND CHEMICAL TECHNOLOGY

*"It is arguable that engineering and engineers have never been more important, given the contribution they can make both to economic development and to the sustainability of the planet. *EnVision 2010* sets out the agenda necessary to sustain and develop Imperial as one of the very best engineering teaching institutions in the world. In my opinion it is of enormous potential benefit to the Faculty and its graduates, and will offer encouragement and direction to many other engineering faculties in the UK and elsewhere."*

BEN MAYO

PROJECT MANAGER FOR ENVISION 2010

Imperial College Union Centenary Events

PHOTO: Colin Whyman

Throughout 2007 the students of Imperial College London will play a leading role in the College's Centenary celebrations. Imperial College Union, along with its Constituent Faculty Unions, Clubs and Societies, plans to run a diverse range of events for students, staff and alumni to enjoy. Some events may be familiar to alumni, others brand new, but the one thing that they all have in common is that alumni are welcome to attend.

Any profits made by our larger events will go towards the Student Opportunities Fund and the Union redevelopment projects, both part of the College's Centenary Campaign. The Union is proud to support these worthy initiatives.

You can visit our website to find out more information about the Union's Centenary events, as well as the Centenary appeals that we are involved in throughout 2007. In the meantime, here are a few events to whet your appetite!

www.imperialcollegeunion.org/centenary

Beit Masterplan Project

One of the College's flagship Centenary projects is the major redevelopment of the Imperial College Union building in Beit Quad, which you may remember well from your time here. The Union building is far more than just a social venue and improvements are necessary to reflect the requirements of an increasingly diverse student body.

Far reaching redevelopment plans are in place and a gift to the Beit Quad Building Fund will help make sure we deliver the improved facilities needed to enrich student life and provide a broader educational experience through music and cinema, sporting and social activities.

If you would like to donate to the Beit Quad Building Fund you can do so now visit www.imperialcollegeunion.org/centenary.

Arts

ArtsFest 2007

Imperial College; Monday 12-Friday 16 February 2007

This week-long celebration involved 25 Union Clubs last year and the line up for 2007 promises to be even bigger. Events will include concerts, workshops and busking across College, as well as a Centenary Exhibition of the Arts at the Union. This will include displays from Arts and Entertainment Clubs, some of which date back to the beginning of the formation of Imperial College. Most events will be free of charge.

For a full schedule visit www.imperialcollegeunion.org/arts/artsfest or contact eugene.chang@imperial.ac.uk.

East Meets West

Shaftesbury Theatre, London; Sunday 18 February 2007

East Meets West is one of the biggest shows regularly performed at Imperial College. With its 15-year history, it is also one of the longest running student variety shows in the UK. The show is a fusion of traditional and modern eastern and western cultures, blending the four in the forms of dance, comedy, singing, and fashion. The event raises money for a variety of charitable causes and is simply not to be missed!

To reserve your ticket, contact prashant.nair@imperial.ac.uk.

ICSO Centenary Concert

Cadogan Hall, 7.30pm, Saturday 17th March

Bernstein Overture Candide
Sibelius Violin Concerto (Michal Cwizewicz)
Wagner Forest Murmurs
Strauss Tod und Verklarung

The Jazz Big Band, Windband, Jazz and Rock Society and Sinfonietta orchestra will also be performing centenary concerts throughout the coming months.

For more information please contact Maggie Holme at arts@ic.ac.uk.

Musical Theatre Centenary Show

Union Concert Hall, 7.30pm, Tuesday 6th to Saturday 10th March

MTSoc are beginning rehearsals at the end of this term for their Centenary Show, a production of the show "Batboy" which played at the West End till last year. The show will be advertised to all current IC students and MTSoc members as well as past members of the society and an audience of at least 100 is anticipated for each night.

Goto www.imperialcollegeunion.org/arts/mtsoc for more information.

Imperial College School of Medicine Choir Spring Concert

St John's Church, Hyde Park Crescent London; 20.00 Friday 2 March 2007

Performed by the Medic's Choir, Hadyn's The Creation is an ambitious work that lends itself well to both the Centenary and the Faculty of Medicine's 10 year anniversary celebrations. It promises to be a spectacular concert.

For more information and to reserve your ticket, contact Society Chair Greg Froome at gregory.froome@imperial.ac.uk.

Imperial College Choir Centenary Opera Gala

Great Hall, 8pm, Friday 16th March

Join the Imperial College Choir for a fun-filled evening of popular Opera Choruses in our Centenary Opera Gala! Whatever tickles your fancy, whether it's March of the Toreadors, Polotsvian Dances or Dido's Lament to name but a few, there really will be something for everyone!

Contact Maggie Holme at arts@imperial.ac.uk for further information.

Tom Stoppard's "Arcadia" - DramSoc Spring Play

Union Concert Hall, 7.30pm, 12th to 17th March

Interweaving between a stately home in Derbyshire in the 1800s and the same room 180 years later - this play explores the nature of truth and time, the effect of science and progress and the disruptive influence of sex and love on our lives. Described as a 'masterpiece' when it premiered in 1993, this is a play that has great emotional and scientific resonance - a fitting event for Imperial's Centenary year!

Contact Maggie Holme at arts@imperial.ac.uk for further information.

Sinfonietta, Choir and Big Band Centenary Tour

Dubrovnik, Croatia; 28 June - 5 July 2007

In 2007 Sinfonietta, Choir and Big Band will tour together for the first time, travelling to Dubrovnik in Croatia to celebrate the College's long tradition of promoting the arts. Whilst there the societies will be performing as part of the Dubrovnik International Summer Festival, replicating concerts performed at Imperial throughout the year as well as some joint concerts between Choir and Sinfonietta.

Contact Maggie Holme at arts@imperial.ac.uk for further information.

www.imperialcollegeunion.org/centenary

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Sport

Royal School of Mines Bottle Match

Harlington Sports Ground, London; Saturday 24 February 2007

This year's annual varsity match between the Royal School of Mines and Camberne School of Mines will take place on home turf. Fiercely fought football, squash, hockey and golf matches will be played throughout the day, and the whole event climaxes with the all important rugby match. Will the RSM bring the famous Bottle back to London for an impressive eleventh year in a row?

Please come and give us your support! For more information please visit the RSM website at www.rsmonline.co.uk.

Athletics Varsity Competition

St. Mary's College Track, Saturday 17 March 2007

This event will be the very first of many athletics competitions between the School of Medicine and the rest of Imperial's Athletics Clubs. Competition events include:

- 100m, 200m, 400m, 800m, 1500m, 5k, 4x100m and 4x400m
- Shot, discus, javelin, long jump, high jump and triple jump

For more information, contact Jig Patel at jigneshbhai.patel@imperial.ac.uk.

Varsity Day (inc J.P.R. Williams Rugby Varsity Match)

Imperial College Sports Grounds; Wednesday 7 March 2007

This exciting day of sporting competition between the School of Medicine and the rest of Imperial takes place across many of Imperial's sports grounds, in a wide variety of sports ranging from badminton to water polo. Its culmination sees the annual J.P.R. Williams Rugby Varsity Match, an extremely competitive match between Imperial College Union RFC and Imperial Medicals RFC, which promises an excellent standard of rugby, plenty of rivalry and a highly charged and vocal crowd!

Day Varsity events

- Tickets: free
- Venues: Ethos, Harlington

JPR Williams Rugby Varsity match

- Tickets: £6 in advance, £8 on the gate
- Venue: Richmond Athletic Ground, Surrey

For more information please contact Nicholas Gore at n.gore@imperial.ac.uk.

PHOTO: Robin Pitt



Centenary Sports Festival

Harlington Sports Ground; Wednesday 2 May 2007

This is a pan-London sporting event where Imperial's Sports Clubs set out to prove to the rest of London that they are the superior! Our football, rugby, lacrosse and hockey teams will be competing. This promises to be a great day, so if you have a free afternoon come and support us.

For more information, contact Lauren Davies at lauren.davies@imperial.ac.uk.

IDEA League Sports Event

South Kensington Campus; Wednesday 13-Friday 15 June 2007

Over two days, the five university teams from Imperial College London, TU Delft, ETH Zürich, RWTH Aachen and ParisTech will battle for first place in badminton, fencing, tae-kwon-do and fitness triathlon competitions. On the final day of the event, participants will see their wits and resourcefulness tested as they take part in the Centenary Challenge across the capital.

No tickets required for willing spectators! For more information, contact Nicholas Gore at n.gore@imperial.ac.uk.

Hyde Park Relays

London, Saturday 10th February

The Hyde Park Relays draw students from many countries, as well as a large number of Imperial College London teams, to take part in the biggest student cross country event in Europe. This is all followed up with the legendary party at the Union. The deadline for entries is Saturday 3rd February.

For more information, contact Rakesh Nandha at hpr@imperial.ac.uk or go to www.imperialcollegeunion.org/acc/hpr.

Alumni Gliding Day

Saturday 31 March-Sunday 1 April 2007

This is a flying day for alumni of the College, catering for all ranges of ability and experience, even if you have never taken to the skies before. Come along and see how gliding has progressed since your student days.

For further information, contact Shaun Murdoch at shaun.murdoch@imperial.ac.uk.

Dinners & Balls

Fiftieth Anniversary of the Underwater Club

South Kensington; Saturday 17 March 2007

The 2006-07 academic year marks the fiftieth anniversary of the Underwater Club and a celebratory dinner on 17 March will mark this occasion. If you were a member of the club at any time it would be great to hear from you, even if you cannot make the dinner. In particular any photos of club activities would be gratefully received.

For more information, contact Nick Jones at scuba@imperial.ac.uk.

Faculty of Medicine 10-Year Summer Ball

View Rooms, Leicester Square, London; Tuesday 19 June 2007

The most anticipated and prestigious social event in the School of Medicine's calendar, held on the date of final year results, this annual event provides a chance for all final years to get together with their fellow colleagues and academic staff one final time before embarking upon their new careers. In 2007 we will also celebrate the 10-year anniversary of the formation of the Faculty of Medicine at Imperial. The evening will commence with a champagne reception, followed by a wonderful three-course dinner and live entertainment from professional bands, DJs and some of the medical school's most talented musicians.

For more information and to reserve your place at the dinner, contact Olivia Kenyon at olivia.kenyon@imperial.ac.uk.

Imperial College London Centenary Ball

South Kensington Campus; Saturday 16 June 2007

Promising to be the largest and most spectacular Union Centenary event in 2007, this will be a great chance to revisit Imperial, meet up with friends and relive those special College moments. A champagne reception will be followed by a three-course meal with after-dinner speeches by famous faces. Magicians, comedians and high profile DJ's will perform throughout the event, fairground rides, street entertainers and chillout venues and an exclusive alumni and VIP lounge.

For more information and to reserve your place at this year's event, contact Jon Matthews at dpfs@imperial.ac.uk or visit at www.imperialcollegeunion.org/ball.

PHOTO: Colin Whyman



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feature

THE ALUMNI REUNION 2006, HELD ON 16 SEPTEMBER, WAS A PHENOMENAL SUCCESS. WE HOPE TO SEE YOU AT THIS YEAR'S REUNION TO CELEBRATE IMPERIAL'S CENTENARY!

Reunited and reminiscing

BY ZOË PERKINS

BACK IN THE 1940S, LONDON AND IMPERIAL COLLEGE WERE tremendously different places to study. Many students would have had to brave travelling to and from the College despite the threat of air raids. The South Kensington Campus would have been almost unrecognisable in comparison to its current form, with the old Imperial Institute still standing on much of the site now occupied by the College. So for three alumni who graduated in 1946, returning to the College in 2006 to celebrate the sixtieth anniversary of their graduation brought back plenty of memories, as well as providing a brand new adventure.

Even graduates from as recently as 10 years ago experienced many new developments on campus – among them the striking main entrance and Tanaka Business School on Exhibition Road, and the more recently opened state-of-the-art sports centre, *Ethos* – as well as revisiting old favourites like the Beit Quad.

“THE LECTURES WERE SPLENDID. THE MEAL, SERVICE AND COMPANY WERE EXCELLENT.”

The day began with the Rector, Sir Richard Sykes, welcoming alumni to the reunion, before scientist and television presenter Professor Lord Robert Winston enthralled alumni and guests of all ages, who packed a lecture theatre for the morning's keynote lecture *Can we trust the scientists?* Lord Winston is renowned for his capacity to communicate often complex science to a wide public audience – he was awarded the Royal Society's Michael Faraday Prize for his outstanding contribution to the public understanding of human infertility and *in vitro* fertilisation in 1999 – and his lecture at the reunion was no different.

Following an informal buffet lunch in the College's Senior Common Room, which provided the perfect opportunity to catch up with former classmates, there was varied selection of afternoon activities in which to participate. Imperial academics

“MANY THANKS FOR ORGANISING THIS FUN REUNION!”

and one of our alumni provided an engaging lecture programme built around the reunion's theme of communicating science.

Alumnus Carlo Massarella explained how his Emmy Award winning documentary *DNA: The Human Race* was made. Professor Hans Michels told of his fascinating experiences on the other side of a camera, as a professional called upon by the media to provide expert advice in the field of industrial safety, such as after the London terrorist attacks in July 2005. Drs Matt Genge and Phil Bland examined how the end of the world is portrayed by the media and the role of scientists in preventing hysteria, and Stephen Webster described how Darwinism was put into dramatic format for his musical theatre show *Darwin's Dream*.

Current students guided alumni around their former departments, providing a unique insight into life at Imperial, whilst Science Museum curator John Liffen explained the exhibition *Making the Modern World*. Victoria and Albert Museum curators Anne Haworth and Dr Patricia Baker led two tours; the first exploring the stylistic progression of silver and ceramic techniques, while the second delved into the history of glass from ancient Egypt to the present day, as part of the *Innovations and Techniques: from Ideas to Reality* exhibition.

Our younger guests were not forgotten; a *Darwin's Dream* interactive breakout session provided the opportunity to explore music, costume and light, while children of all ages were fascinated by the Science Museum's bubble show.

To conclude the day's events, Dr Tidu Maini (Civil Engineering

“THANK YOU FOR ORGANISING SUCH A SUCCESSFUL DAY – IT WAS WELL OVER 12 HOURS OF FUN.”



feature

1966, PhD Rock Mechanics 1972), Pro Rector for Development and Corporate Affairs, hosted a dinner in the Senior Common Room, where guests were welcomed with a drinks reception and entertained by a student-led string quartet. In all, the reunion was a resounding success, and we received some great feedback:

"THE EVENT WAS VERY WELL ORGANISED AND I THINK YOU STRUCK THE RIGHT BALANCE ORGANISING SOME VERY INTERESTING TALKS AND TOURS BUT ALSO PROVIDING THE RIGHT ENVIRONMENT FOR REUNION OF OLD FRIENDS, WELL DONE!"

Visit www.imperial.ac.uk/alumni/reunions to view Lord Robert Winston's lecture online and see more of the photos taken throughout the day.

We'd be delighted if you would join in the College's Centenary celebrations at the Alumni Reunion 2007. The event, taking place at the South Kensington Campus on the weekend of 14–16 September 2007, is open to all alumni regardless of your year of graduation.

Renowned academics from across the College will provide an exciting lecture programme, which will be complemented by exhibition tours at neighbouring museums, as well as visits to your former departments. You will even have the opportunity to climb to the top of the Queen's Tower. Social activities, such as the Centenary quiz and reunion dinner, will provide plenty of time for you to catch up with your former classmates and reminisce about days gone by.

Visit the reunion website at www.imperial.ac.uk/alumni/reunions for further information or complete the booking form enclosed with *Imperial Matters* to confirm your place.



EMMA BOWNETT

association_groups

Welcome to the Imperial College Association pages

2007 is a special year for the College and our groups have planned many activities to help celebrate the Centenary, from the Friends of Imperial College's special lecture programme to the Imperial College Club of Germany's *100 for 100* event. Find out more on the following four pages.

Our alumni have much to celebrate as well. Alumnus Dr Claire Tomlin has been awarded a MacArthur Foundation Fellowship and Peter Johnston has been appointed Controller BBC Northern Ireland. Read more on pages 26–27.

Obituaries can be found on pages 30–32, and honours, awards and appointments are listed on page 33. Read on to find out more...

Charing Cross and Westminster Medical School Alumnus Society

A well-attended reunion for some eight year groups of the former Charing Cross and Westminster Medical School was held over the weekend of 13–14 May 2006 in Gloucestershire. Dr Dawn Harper was the organiser. Well done, Dawn! The society is hoping to launch some new initiatives, both to encourage more frequent reunions and to support current medical students, for example, with careers advice. Dr Angus Kennedy, Chairman, is pursuing these ideas in conjunction with our fellow medical alumnus groups at the College.

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

PETER GRIFFITHS
HONORARY SECRETARY

Engineering Chapter

City and Guilds College Association

The CGCA Annual Dinner, held at the Ironmongers Hall, was a sell out, with a strong showing from both students and alumni.

Lord Browne of Madingley, President of the Royal Academy of Engineering and Chief Executive Officer of BP, and Sir Richard Sykes, Rector of Imperial College London, will speak at the 2007 Annual Dinner on Tuesday 6 March 2007, during the College's Centenary year.

The AGM and President's Evening, which was held at the College, was well attended. Barry Brooks (Electrical Engineering 1971), the retiring President, was presented with a crystal decanter in recognition of his exceptional service to the association over the last two years. This was followed by an informative and challenging talk by Professor Paul Jowitt (Civil Engineering 1972, PhD 1974), Heriot-Watt University, on the environmental problems facing developing countries and the ability of today's engineers to address them.

The association's In-Out Dinner, a hand-over between the incoming and outgoing student union representatives, was held at the Polish Club. It was a most successful evening, with a useful exchange of views and experiences on all sides.

PROFESSOR JOHN BANYARD (Civil Engineering 1966)
PRESIDENT

Royal School of Mines Association

A special mention must go to the memorial barbeque held in September 2006 to honour the life and lifelong support of Peter Harding (Materials 1947). The sun shone kindly on the guests, as old

stories of Peter's exploits were relayed between them. It was a fitting tribute to a great man and the association is grateful for the donations that have been received, which will allow a trust to be set up to remember the spirit of 'Spitfire Pete'.

The RSMA Trust, meanwhile, continues to provide vital support for individuals in the form of hardship loans and grants, as well as for the Undergraduate Research Opportunities Programme.

Membership subscriptions have been increased from £10 to £15 a year, with the exception of life members. Your valued additional subscriptions will go towards helping students achieve a rounded education. We are relying on you to voluntarily change the standing order with your bank!

Lastly, I would like to thank our outgoing Treasurer, Paul Atherton (Geology 1986), who has provided a tremendous service to the RSMA.

PETER CHASE (Computing 1985)
HONORARY TREASURER

Friends of Imperial College

As part of the College's Centenary celebrations, Friends of Imperial College have arranged some special lectures by outstanding speakers, which will be open to all.

On 20 February 2007, Professor Alan Fenwick will be talking about his work, funded by the Bill and Melinda Gates Foundation, on finding an affordable, effective and sustainable solution to 'forgotten' disabling parasitic diseases in the developing world.

Professor Kevin Warwick (PhD Electrical Engineering 1982), known in the press as Captain Cyborg, will be answering some key questions on 20 April 2007, about the device he implanted in the median nerves of his left arm linking his nervous system to a computer.

We will be celebrating the College's Centenary with a summer party on 3 July 2007 at 58 Prince's Gate.

The year has seen an increase in the number of members with many more alumni of all ages attending our events. Our finances improved markedly during this, our first year of independent operation, so much so that we are able to make a substantial donation to the Student Opportunities Fund. If you would like to come along to our events you will be very welcome. Visit www.friendsofimperial.org.uk for details.

RODERICK RHYS JONES (Civil Engineering 1964)
CHAIRMAN

Imperial College School of Medicine Alumni

This is an exciting time for the Faculty of Medicine. In 2007, the Faculty will be celebrating its tenth anniversary and, with Sanyal Patel appointed to the new post of Vice President of Alumni Affairs, it one of our priorities to build an even stronger alumni association. Another new member of the team is Dr Mike Schachter, who has been appointed as the new President of the association.

We are initiating a new loyalty card scheme, which will provide access to exclusive benefits for enhanced members. We will keep you updated with all of our events and activities, and we hope that as an alumnus you will be at the very forefront of our celebrations.

A new interactive website is being launched allowing you to update your details online and post items on a discussion board. Visit www.icsmalumni.org to find out about the exclusive benefits and services available to you. To give you a taster, T.M. Lewin are currently offering a 70 per cent discount to our enhanced alumni members.

The *ICSM Gazette* will contain a section that focuses on our alumni, containing updates from recent graduates, products that may interest our doctors and the new ICSM alumni merchandise for you to purchase!

Contact us on +44 (0)20 7594 9813 or icsm-alumni@imperial.ac.uk if you would like information about joining the ICSM alumni scheme and to be involved in future activities.

SHIV CHOPRA
ICSM STUDENT UNION PRESIDENT

Royal College of Science Association



In early September 2006, former President M.C. Black (Physics 1973) led members around the City of London in the footsteps of Sherlock Holmes and Dr Watson, following clues to Saxe Coburg Square. Sadly the gold bullion

transferred here in *The Red Headed League* was nowhere to be seen!

The relationship with the student body is continuing to develop and is much easier now that there is, once again, one faculty union for all science students. It is particularly appropriate that the winner of the Royal College of Science Association prize is the current President of the RCSU, Jad Marrouche. Jad was presented with the prize by the association's President, Dr Digby James (Chemistry 1974). The prize is given for performance during the academic year and contribution to the College community.

The Annual Dinner was held at the beginning of November 2006, with guest speaker Sir Peter Knight, Principal of the Faculty of Natural Sciences.

If you would like to join the association please visit our website at www.rcsa.org.uk.

DAVID LEGG (Physics 1979)
HONORARY SECRETARY

St Mary's Hospital Association

The association has had a very successful year supporting more student activities than ever before, and our financial contributions have totalled more than £20,000. We have introduced the drama scholarship and supported the Light Operatic Society production of *Oklahoma*. It took many of us back a few years, but it was the most spectacular and enjoyable production.

We are concerned about the proposed developments of the St Mary's library, particularly the loss of the gallery, which is universally acknowledged as the best such facility in the Imperial medical estate.

We like to think that our strong support for its retention has meant that it will be preserved, whatever the future of the library.

We would like to congratulate Jack Brittain (St Mary's Hospital Medical School 1952) who was recently made an honorary member of the Occupational Health Society. Please do keep us updated, we would be only too glad to publish such reports and photographs in the association's newsletter.

The next AGM will be at St Mary's Hospital on 24 April 2007 at 18.00. We welcome your comments on the future of the association and Patricia Dymond would like to hear from you at marys.assoc@bt.internet.com.

DR DAVID HUNT (St Mary's Hospital Medical School 1971)
CHAIRMAN

Tanaka Business School

First of all, mark your diary! The School is holding a Centenary Alumni Reunion on Friday 13 July 2007. An exciting programme of guest speakers and master classes will be followed by a fun evening event.

Missed out on an elective when you studied for your MBA? Now you have the chance of catching up! The School's *Electives for Alumni* programme gives you access to the electives that are currently offered to students at very competitive rates. For more information visit the website or contact Kate Vinall on k.vinall@imperial.ac.uk.

Our annual alumni magazine is now under the new title of *Business Matters*, and various other publications are available online.

Several international clubs have recently been created or relaunched, including Beijing, Hong Kong, Greece, Malaysia and Shanghai. These groups have held a variety of events and gatherings for the alumni in their region. For more information, please email Nicola Pogson at n.pogson@imperial.ac.uk.

A successful launch event for the Industry Sector Clubs took place in November 2006, seeing the introduction of four new groups.

In October 2006, the Alumni Advisory Board (AAB) addressed the School's strategic plan for developing the alumni network and discussed plans for Centenary celebrations. A number of subcommittees were set up and, in particular, a nominations subcommittee will be looking at setting up an election process for membership of the AAB. We'll be asking for nominations later this year!

NICOLA POGSON AND KATE VINALL
ALUMNI RELATIONS TEAM

Wye College Agricola Club

The Agricola Club Annual Dinner and AGM was, again, a day of extremely mixed emotions. Many learnt of the deaths of Professors William Holmes (Wye College 1987) and Dennis Britton (Wye College 1982). On the brighter side, we were able to deliver the news that the College had shelved plans for a major science park and related housing development in the area around Wye.

Most reasonable people were supportive of the concept of a cutting edge research centre being developed on the campus; it would continue Wye's research tradition and revitalise the entire campus. However, there was a price to be paid – the sale of approximately 300–400 acres of land.

Some time at the AGM was spent debating what role the club might play in the future, and the difficulty of recruiting new members from the changing undergraduate base. The debate will continue for some time; meanwhile, forming stronger links with the University of Kent and its alumni organisation may be one way forward. Additionally, a photographic portrait of Professor Jeff Waage (PhD Zoology 1977) was presented to the Wye Campus at the AGM to mark Professor Waage's role as Provost at Wye.

Agricola Scholarships, funded by the club and Imperial College, were awarded to six outstanding students, in keeping with tradition.

JOHN WALTERS (Wye College 1970)
EDITOR OF *WYE*

association_international

International Ambassadors

In 2006 the College launched the International Ambassadors initiative, which seeks to inform international alumni groups when the travel plans of some of Imperial's senior academics would enable the academic to meet up with the group. The initiative will enable the latest College news and developments to be delivered in person by senior College members to our international alumni.

Approximately 20 of Imperial's most senior academics have signed up as Imperial Ambassadors, including the Rector, Deputy Rector, Pro Rectors and Heads of Faculty. If you would like to find out more about the International Ambassadors Scheme visit our website at www.imperial.ac.uk/alumni/ambassadors or email alumni@imperial.ac.uk.

New groups and contacts

We have alumni groups in many countries around the world. To find out if there is a group near you, visit www.imperial.ac.uk/alumni/international. If you are not close to an existing group, we can help you get together with other Imperial College alumni in your area.

Daniel Phan (Materials 1996, MSc 1997) is interested in meeting other alumni in the Netherlands, he can be contacted at dphan303@yahoo.com, and Patrik Nilsson (MSc Structural Geology 1994) is interested in getting together other alumni in Sweden, he can be contacted at ic_alumni@spray.se.

New South Wales Alumni Association

We are looking forward to the implementation of the College's new International Ambassadors initiative to revitalise the New South Wales Alumni Association, and we are now planning with some confidence a function in July 2007 to celebrate the College's Centenary. We invite all alumni in and around Sydney to keep in contact with Bill Macmillan regarding this and future events. Please email macmillanw@bigpond.com.

DR BILL MACMILLAN (PhD Chemical Engineering 1962)
CONVENOR

RSMA Australia

In July 2006, mines alumni in Sydney and New South Wales had their first reunion in a decade, with 17 attending, and a fair number of regretful apologies. Being midwinter, some had escaped to warmer climes, whilst others were too busy making money in the current mining boom to spare the time for a convivial lunch and reminiscing about bygone days. The function was held at the *Phillips Foote bistro* in the historic Rocks area of Sydney. It was very successful, and we all agreed that we should repeat the function at least once a year.

The next event is provisionally set for June or July 2007. For details, contact Ron Butler at rbutler@acenet.com.au.

RON BUTLER
(Materials 1952)
REPRESENTATIVE



RON BUTLER

Victoria Alumni Association

The *IC in VIC* dinner was held in Melbourne in October 2006. Twenty people came to the *Vivace restaurant* and after dinner David Bishop updated them on College matters. He had returned from London the previous morning, bearing fresh news for the 'colonies'.

DAVID BISHOP (Electrical Engineering 1964, MEng Mechanical Engineering 1965)
CONVENOR

Imperial College Shanghai Alumni Club



The Imperial College Shanghai Alumni Club held its second meeting on 2 July 2006. We were honoured that Dr Geoffrey Nicholson (Chemistry 1960, PhD 1963) gave a presentation entitled *Innovation – the Global Factor*, about business environments encouraging or discouraging innovation. As 'the father of the Post-It notes programme', Dr Nicholson used it as one example of successful innovation. He explained how the technology worked, and how it was expanded to many products using the technology.

We were inspired by Dr Nicholson's great presentation and we understand that achievement depends on human effort. Indeed, innovation is a vital part of successful companies and countries.

You can contact us at icac.sh@gmail.com.

Imperial College Club of Germany e.V.

Imperial College is celebrating its Centenary in 2007 and the Imperial College Club of Germany e.V. (ICCG) will be joining in the celebrations with our big *100 for 100* event. In association with the International Ambassadors Scheme, Professor Mary Ritter, Pro Rector for Postgraduate and International Affairs, and Professor Sandro Macchietto, Director of the Energy Futures Lab, will be speaking at the event, which will be taking place on 4–6 May 2007 in Bonn. It is also the *Rhein in Flammen* festival in Bonn, with spectacular fireworks and plenty of action on the ground.

We constantly update our ICCG website; a new feature is the jobs page showing vacancies in Germany. Once you have registered on ICCG website, the job opportunities link will appear! For further information and membership details, please refer to www.iccg.net.

MIRANDA BELLCHAMBERS (Mechanical Engineering 1986)
PRESIDENT

Imperial College Alumni Association of Hong Kong



Our first International Ambassadors event was held in October 2006. The Imperial College Alumni Association of Hong Kong held a dinner reception attended by more than 30 alumni for Professor David Nethercot, Head of the Department of Civil and Environmental Engineering, at the Foreign Correspondents' Club.

With more than 30 years experience of research, specialised advisory work and committee activity in the area of steel, aluminium and composite construction, Professor Nethercot gave a presentation on *EnVision 2010*, a project which aims to ensure Imperial College's position within the top five institutions for engineering education in the world.

Everyone enjoyed this great networking opportunity with Professor Nethercot and their fellow alumni.



VINCENT SO (Mechanical Engineering 1991, MBA 1994)
VICE-CHAIRMAN

Imperial College Alumni Association of Singapore

In the recent Singapore general election, several alumni were elected as Members of Parliament. They were Teo Chee Hean (MSc Computing 1977), Ong Kian Min (Physics 1982), Wee Siew Kim (Aeronautics 1984) and Baey Yam Keng (Biochemistry 1994). Lee Kuan Yew (Fellow of Imperial College), Minister Mentor, was returned unopposed and Lee Yock Suan (Chemical Engineering 1969) retired from politics after 26 years. Benjamin Wong (MBA 1999) was installed as President of the Rotary Club of Victoria (Singapore) on 28 June 2006.

Professor Wong Lim Soon (Computing 1988) received the 2006 Singapore Youth Award Medal of Commendation from Minister Teo Chee Hean at the Istana on 2 July 2006, for achieving, contributing and inspiring youths at significantly higher levels. Professor Wong also received the ICAAS Distinguished Service Award in recognition of his sustained and outstanding contribution and service to the alumni association and the community at large.

The Tanaka Business School graduation ceremony and dinner, held on 29 July 2006, was graced by Kyle Lee (Partner, PriceWaterhouseCoopers). The Imperial College Alumni Association of Singapore (ICAAS) sponsored book prize was awarded to Kenneth Kaw Jon Qium (MBA 2005) for outstanding performance.

The Made-in-Singapore Innovation Symposium, organised by ICAAS, the University of Illinois Alumni Association and National Library Board, was held on 26 August 2006. The ICAAS speakers were William Liu (MSc Mechanical Engineering 1970), Professor Wong Lim Soon, Oh Lock Soon (MSc Concrete Structures 1993) and Chan Tze Hoe (MEng Aeronautical Engineering 2002).

ICAAS annually presents the Most Outstanding Student Award to a Singaporean Imperial College London student, recognising academic excellence and all-round achievement. The winner was Kai-Leng Yeo. In addition, Sarah Ong Shu Ren was awarded the WSPC-ICAAS Most Outstanding Junior College Science Student.

DR HING-YAN LEE (Computing 1981, MSc 1982)
PRESIDENT

CGCA South Africa

Activities here have slowed down from our giddy heyday, but we still persevere with our monthly gatherings on the third Thursdays of the month. All alumni in the region are most welcome to meet up.

We had our alumni dinner in June 2006, a combined affair with what was (and still is in South Africa!) the Royal School of Mines Association. We are not aware of any Royal College of Science Association members and most of the medics (and our retirees) are in the Cape Town area.

RICHARD GUNDERSEN (Electrical Engineering 1976)
CHAIRMAN

Imperial College Alumni Association of Northern California

The year kicked off with a spring hike to the Pelican Inn and beyond, which included a 2,000-foot ascent. We compensated for this rigorous physical activity with a meal of fish and chips, a throwback to our times at Imperial.

During the summer we had an exclusive tour of the Gordon Biersch brewery in San Jose. Dan Gordon, the founder of the Brewery, showed us around the physical plant, and we also got to see the high-tech brewery control centre, where the minute details of the beer production were being controlled and monitored.

In August 2006, we had our annual barbeque at the home of alumnus Ella Shum (Computing 1981). Ella and her husband Robert proved to be gracious hosts, contributing a well-received dish of Afghan burgers. The annual dinner and meeting held in December 2006 rounded off the year's events.

ARJUNA JAY (Civil Engineering 1980, MSc 1981)
PRESIDENT

association _ alumni focus

focus on alumni

Recreating the past



Set in the receiving room of the Royal London Hospital in Whitechapel, *Casualty 1906* was one of BBC's most recent dramas, and recreating the hospital as it was 100 years previously was the latest challenge for Stone City Films' Executive Producer, Clare Duggan (Microbiology 1981).

Healthcare has changed beyond recognition since 1906 – it was 42 years before the National Health Service was created and in the East End one in five children died before the age of 10 – so the programme required extensive research. Using the hospital archives in Whitechapel, the team were able to refer to actual case notes and ward reports from 1906. In addition, the team was responsible for

sourcing historical equipment to be used in the drama.

One of the most difficult, but most interesting, pieces of equipment to find was an X-ray machine, Clare explained: "London had been a pioneer of X-rays. Radiographers gradually lost their fingers and died of radiation poisoning due to the practice of putting a

hand on the machine every time it was switched on to calibrate it."

Clare trained as a Television Producer in the BBC Science Department, before taking up the post of Science Producer for Channel 4 News, which took her around the world covering the latest events in science and the environment. This included access to film inside the secret city in Siberia where the Soviets developed their first nuclear bomb.

Clare recognises how important having a science degree has been to her job, commenting: "I remember filming the first report on bovine spongiform encephalopathy (BSE), there was a lot of scepticism from



politicians at the time but I remember sticking to my guns and insisting that we must do the report because I understood the importance of prions [submicroscopic protein particles believed to cause BSE] and their context in relation to the similar diseases scrapie and Creutzfeldt-Jakob disease (CJD)."

Casualty 1906 was shown on BBC One on 3 December 2006.

'Genius' award for alumnus

The exceptional intellectual ability and originality that comes with being a genius brings with it responsibilities and expectations. For Dr Claire Tomlin (MSc Electrical Engineering 1993) there is also the question of how best to use the \$500,000 'genius grant' she has been awarded by the John D. and Catherine T. MacArthur Foundation. Claire is one of 25 new MacArthur Foundation Fellows, who come from a broad range of disciplines, including history, literature, art, music and public service.

The MacArthur Foundation Fellowship is the latest in a long list of grants and awards that Claire has received. She has been named as one of America's top 100 young innovators in MIT's *Technology Review*, and has received the Donald P. Eckman Award of the American Automatic Control Council and the American Institute of Aeronautics and Astronautics Outstanding Teacher Award.

Clare is currently Associate Professor in Stanford University's Department of Aeronautics and Astronautics and Associate Professor in the Department of Electrical Engineering and Computer Sciences at UC Berkeley. She is studying aeronautical applications of hybrid systems research.

Hybrid control systems use a combination of discrete-time systems, which provide output in digital form, and continuous time-systems to control many devices from air conditioning units to the power turbines inside a power station. Guaranteeing that systems operate within safe limits becomes increasingly difficult as the number of variables to be controlled grows and their actions become more complex. Claire's research specifically looks at the applications to aircraft flight control and air traffic conflict resolution, but it has potential application to military operations, business strategies and power grid control.

Her articles have appeared in many publications, including *Science*, the *Journal of Guidance, Control, and Dynamics* and *Automatica*.

As an investment in Claire's creative potential, the 'no strings attached' policy of the MacArthur Foundation grant is intended to provide her with the freedom to follow whichever path she deems most appropriate, whether it builds upon the existing scope of her work or takes her in an entirely new direction. Claire plans to use at least some of the grant to boost her background in developmental and experimental biology, as her research on control theory has recently expanded into the differentiation and development in biological tissues.

Clare's track record demonstrates her creativity and the MacArthur Foundation Fellowship provides the resources to exercise that creativity.

focus on alumni

Holding steady



Having a drink from a glass or mug is an action that many people take for granted, but for individuals affected by tremor, which is caused by a dysfunction of the central nervous system, this daily activity becomes a great difficulty. However, Chris Peacock (Industrial Design Engineering 2006) may have found the solution.

HandSteady, an industrial designed innovation project undertaken as part of the MA Industrial Design Engineering course, jointly run by the

Royal College of Art and Imperial College London, is a rotating rubber grip that holds mugs, cans and wine glasses, helping to overcome the difficulties experienced by up to 300 million people worldwide.

Chris' design was prompted by a friend developing Parkinson's disease, he said: "The tremor meant drinking, along with at least 35 other important activities of daily life, became more difficult. After a little exploration I saw that there were hardly any products available for people with this problem."

Studying how individuals with the condition do things around the home helped Chris to identify drinking as the most important social activity affected by tremor. As a result he chose to focus on stabilising a drinking cup.

Research at the Helen Hamlyn Research Centre, a centre of excellence for inclusive design, enabled Chris to work in close contact with tremor sufferers, which proved important in the design process. He said: "Originally I was using motion detectors to measure motion and a motor to push the held objects in the other direction. This seemed to be working in the studio, but when I tested it on people with tremor I found it wasn't sensitive enough and that the only way to make it work was to hold the objects in a structure. I chose a gimble mechanism and then found I didn't need the electronics."



Designed to be more discrete than previous product designs to reduce tremor motion, handSteady works by counteracting the movements of tremor to stabilise the drink. Despite shaking or vibrating handSteady keeps the object still in mid-air.

Professor Leslie Findley, Senior Neurologist Consultant and Medical Director of the National Tremor Foundation, said: "Patients with tremor are often very disabled in terms of being able to socialise in restaurants and in the home, because they are unable to pick up a glass or cup, an activity which will exaggerate their tremor. I'm impressed with the simplicity and potential use of this type of technology."

HandSteady picked up two of the seven prizes at the Royal College of Art's Design for our Future Selves Awards 2006; the Snowdon Award for Disability Projects and the Help the Aged Award for Independent Living.

Further information about handSteady can be found at www.handsteady.com.



New Controller for BBC Northern Ireland

In October 2006 it was announced by BBC Northern Ireland that Peter Johnston (Chemical Engineering 1988) would take over the role of Controller. In this role, Peter is responsible for editorial vision, as well as commissioning and scheduling strategies.

Of his new role, Peter said: "It is an honour to be given this incredible opportunity and I look forward to working with all the staff at BBC Northern Ireland to meet the many challenges ahead."

Peter has worked his way up the ranks since he joined the BBC in 1994 as a Research Executive. Along the way he has held the positions of Head of Marketing and Development and Head of New Media for BBC Nations and Regions. His most recent role was Head of Broadcasting.

Over the past three years as Head of Broadcasting, Peter held overall responsibility for the commissioning and scheduling of programmes and content for Northern Ireland audiences on BBC TV, BBC Radio Ulster, BBC Radio Foyle and BBC Online.

As the College prepares to leave the University of London it has been reflecting on the future of the College awards, namely the ACGI, which is awarded by the City and Guilds of London Institute, ARSM, ARCS, AICSM and the DIC. We have already surveyed the student body via the Union Council who have given clear feedback that the awards should be retained by Imperial post-independence. We would also be very interested in hearing the views of our alumni and an online survey will be available on the alumni website from Monday 26 February 2007 until Friday 23 March 2007. Visit www.imperial.ac.uk/alumni/awardssurvey.

media mentions

It's rocket science

'Contrast swing' is set to become the new buzz word among cricket's fast bowlers, and is the brainchild of Dr Rabi Mehta (PhD Aeronautics 1978), a leading expert in aerodynamics – specifically aircraft turbulence. Dr Mehta works at the Ames Research Centre, NASA's premier research laboratory.

Dr Mehta combined his academic and sporting loves to start wind tunnel tests into the aerodynamics of the cricket ball. Dr Mehta explained the results of the wind tunnel tests: "If you take a ball and bowl it with the seam angled towards first slip, it will swing away from the right-handed batsman. For true reverse swing, everything is the same, but the ball will swing towards fine leg." The point at which contrast swing occurs is defined by how rough the ball is and how fast the delivery is.

Source: *The Sunday Mail*, 10 December 2006

Wonderful winners

The winners of the New Civil Engineers Graduate Awards 2006 competition were announced at the Civils 2006 exhibition in November. Among the winners was Imperial College alumnus Martin Stanley (MEng Civil Engineering 2005), now a Graduate Geotechnical Engineer for Bachy Soletanche, who was one of three highly commended finalists for his essay about how civil engineers can help to reduce global warming and its effects on our quality of life.

Concrete, hard hats and flashing lights – in roughly that order – were what first attracted Martin to construction. From the outset, the only contractor among the finalists, knew that site work would be his first love. He said: "I found contracting much closer to the real coal face of construction. You are never just a human calculator and get lots of early responsibility."

Source: *New Civil Engineer*, 30 November 2006

Geologist from Lincolnshire to work with oil exploration teams around the world

Claire Punins (Petroleum Geoscience 2006) is the first woman to be employed on Shell International's exploration team for several years. She was shortlisted from hundreds of applicants and began working in Holland in December 2006. One of her first projects will be to supervise deep sea exploration in south east Asia.

Of her new appointment, Claire said: "It's incredibly exciting. There are not many women in this profession at all, so to get this job working with some of the best people in the world is absolutely brilliant."

Source: *Lincolnshire Echo*, 21 November 2006

Game may go square

Callaway Golf's latest driver has a square, as opposed to rounded, head. The square design is the brainchild of Alan Hocknell (MEng Mechanical Engineering 1994), who worked with Phil Mickelson on his two-driver tactics at the Masters. The new shape, he explained, allows the weight to be located outside the weighting zone of a usual driver, in other words at each of the two corners at the back of the club. This means that the implement is more resistant to twisting, with the sweet spot playing across the entire face to encourage straight hitting. Aside from the fact that the club sits well, golfer Nick Dougherty believes that the square sides make it easier to aim, he said: "With an ordinary driver, you simply have to hit off the sweet spot but with this you don't have to be that precise. It's going to make a big difference to the professionals and an even bigger difference to amateurs."

Source: *The Daily Telegraph*, 25 October 2006

India has intelligence aplenty

Rajive Kaul (Materials 1971) anchored the session for the thirty-third National Management Convention of All India Management Association (AIMA) held in New Delhi in October 2006. As a highly respected industrialist who pioneered the growth and development of Nicco Group, Rajive believes that biotechnology and retail will rule the market in next decade. Proudly announcing the January opening of Nicco's new biotechnology unit for the manufacture of products for the pharmaceuticals, food and cosmetics industries, he said: "Both biotech and IT sectors, that are huge successes today, have a common link. They require minimum infrastructural backup but need good brains. And India has good brains aplenty."

Source: *The Economic Times*, 29 September 2006

Houndsman on title trail

Daniel Murphy (Agriculture 2002) has overcome a disability so successfully that he is in the running to become a national countryside champion. The 26-year-old was studying for a degree in agriculture when his hopes of a bright future in the countryside appeared to suffer a blow. A shooting accident days before his twenty-first birthday resulted in the amputation of his right leg, but despite extensive surgery, physiotherapy and the fitting of an artificial limb, he completed his course.

At College, he had an interest in hunting, becoming a master of beagles, and now he is kennelman and whip for the Hurworth Hunt at West Rounton in Yorkshire. He looks after 35 hounds from the Hurworth, as well as 25 from the Bilsdale Hunt, which shares the kennels.

Daniel has now learned that he is a finalist in the national Young Countryside Champion of the Year competition, organised by *The Field* magazine. The competition is open to anyone aged 17 to 30 who lives and works in the countryside.

Source: *The Northern Echo*, 25 September 2006

Daniel was 22–30 category winner and runner up in the overall competition.

books



Library of the Soul

Simon Buck (Computing and Control 1979)
Alnpete Press

Library of the Soul is the first in the series of Peter White mystery novels. On a visit to Rome, Peter is recruited into the oldest secret society in the world to help solve an urgent problem; cardinals and other clerics are unexpectedly dying of heart attacks. Peter and his old friend Costanza must track down the killer before any

more people die. Deep in the secret archives beneath the Vatican Library, they lay a trap and wait. But when the library itself becomes the target of an audacious plot to steal a 2,000-year-old manuscript, the problem suddenly becomes much more personal.



Chaya four one!

Hugh Chare (Mining Engineering 1970)
Trafford Publishing

Set in 1969, this novel follows the life of James Martin as he sets out to take up employment at a mine in Zambia. Throughout his first year James learns that there is more to running an operation than his degree course ever taught him, particularly when it comes to people and their

foibles, prejudices and outlook. He learns that much of what is held to be true about the different racial and ethnic groups he meets is untrue, and that people are people – good and bad.

One Man's Cambridge

James Charles (Materials 1947)
Folly Press

This is an account of the life of John Charles, a man who made his mark in a rapidly developing scientific and technical world despite the meagre educational opportunities that existed for him in late-Victorian and Edwardian England. All proceeds from the book will go to the Cambridge and County Folk Museum.

A Pocket History of Europe

Vivian Durham (Wye College 1951)
Self-published

Providing the enquiring student with background for current political situations, this book outlines salient political and socio-economic facts from prehistoric times to the present day. Each chapter deals with a different historical period, containing a chronology of important dates with occasional references to events in other parts of the world.

Functional Reynolds Stress Modelling

Joan Moore and John Moore (Mechanical Engineering 1965)
Pocahontas Press

Functional Reynolds Stress Modelling develops models for turbulence in fluid flow using the Reynolds stress equations, applies the models to stationary and rotating flows, including boundary layers, laminar to turbulent transition, and rapid distortion, and uses glyphs to visualise turbulence stress and spectrum tensors.

One In A Million

Peter Hewkin (Physics 1980)
Artists' and Photographers' Press

One In A Million enables you to calculate the chances that your job, physical attributes and hobbies make you unique. The book's simple calculations will help you discover the chances that someone has been a Royal Air Force officer, commercial pilot licence holder, master scuba diver, six-ball juggler and windsurfing instructor, or any other combination of usual characteristics. Are you one in a million?

Bang! The Complete History of the Universe

Brian May (Physics 1968), Sir Patrick Moore and Chris Lintott
Carlton Books

BANG! Space, time, matter... the universe was born 13.7 billion years ago. Infinitely small at first, it expanded more rapidly than anyone can contemplate. Brian May, Patrick Moore and Chris Lintott explain how this came about, from the moment when time and space came into existence, to the formation of the first stars, galaxies and planets, to the evolution of human beings able to contemplate their own origins and ultimate destiny. Then on towards that destiny in the infinite future, long after the Earth has been consumed by the red giant Sun.

An Introduction to Radiation Chemistry

J.W.T. Spinks and R.J. Woods (Chemistry 1948, PhD 1951)
Wiley-Interscience

This graduate textbook provides a point of entry into the field of radiation chemistry, giving readers a broad and current overview from which their own areas of interest may be further explored. With an approach that is both academically rigorous and eminently practical, it promotes understanding of the fundamental principles underlying the action of radiation on matter. First published in 1964, and now in its third edition, the final chapter has been expanded to give fuller coverage of chemical reactions initiated by high-energy radiation and their commercial uses.

Applied Radiation Chemistry: Radiation Processing

Robert Woods (Chemistry 1948, PhD 1951) and Alexei Pikaev
Wiley-Interscience

Applied Radiation Chemistry: Radiation Processing deals with radiation processing as a whole using a chemical perspective. It offers basic information on the procedures taking place and covers radiation dosimetry plus a wide range of actual and potential applications. The book deals with the applications of radiation chemistry in synthesis, polymerisation, polymer modification, sterilisation of medical products, the treatment of food and waste management.

Code Quality: The Open Source Perspective

Diomidis Spinellis (Computing 1990)
Addison-Wesley

Using hundreds of examples from open source software projects, like the Apache web and application servers, the BSD Unix systems, and the HSQLDB Java database, this book illustrates code quality concepts that every software engineer should appreciate and apply. From this book developers will learn how to judge software code quality attributes: reliability, security, portability, accuracy and maintainability.

association_obituaries

obituaries

MR DAVID J.D. BANKS Animal Science 1971

Best known for his work on the control and eradication of livestock diseases, David was Chief Veterinary Officer for the government of Papua New Guinea's Department of Primary Industries, before taking on the role of Principal Scientist at Biosecurity Australia. David had a full life and spread good humour in whatever he did and wherever he went.

Source: Biosecurity Australia News

MR GEOFFREY T. BANKS MSc Microbiology 1957

In 1964, Geoff was appointed to manage the fermentation plant in the College's new Department of Biochemistry. He combined this task effectively with the training of graduates and undergraduates in fermentation science until his retirement in 1992. Geoff was unfailingly pleasant, approachable and diplomatic, even when under pressure; an exemplary colleague who will be missed by all who knew him.

Provided by Anthony Dickerson

EMERITUS PROFESSOR ROBIN G.C. BATHURST Geology 1948

Robin is recognised as one of the fathers of modern carbonate sedimentology, leaving an enduring legacy in his written work. On the staff of University of Liverpool, he is remembered with affection for his ability to imbue learning with purpose and fun. He excelled in his lifelong love of watercolour painting.

Provided by Diana Bathurst

EMERITUS PROFESSOR MICHAEL P. BEDDOES Visiting Academic 1993-1995

Mike was Professor Emeritus of Electrical Engineering at the University of British Columbia. It was his PhD thesis on the compression of television signals that started his lifelong interest in speech recognition and aids for the blind. Mike died on 5 July 2006, leaving five children, six grandchildren and his wife of 59 years, Maureen.

Provided by Maureen Beddoes

MISS HEATHER BRADBURY Botany 1970, MSc Biochemistry 1971

Heather had a successful career in the Civil Service. She travelled widely, was a talented cook and superb gardener. She took early retirement and moved to Stratford-upon-Avon, where she established herself as an excellent bridge player and trustee of a local complementary health centre. She was much loved and her early death is greatly mourned.

Provided by Jane James

MR TIMOTHY M. BURDEN Physics with Theoretical Physics 2003

After leaving Imperial, Tim took a year out and travelled around Australia. He then began studying for an MRes in Environmental Biology at the University of St Andrews. Returning to St Andrews after a break, Tim collapsed and died in Edinburgh. We would like to thank everyone who sent cards, floral tributes or attended the burial.

Provided by Ann and Michael Ward

MR HUBERT R. CAHN-SPEYER Chemistry 1943

Hubert arrived in Bogotá in 1948, where he started a successful business, integrating with both the British colonial and Bogotá societies with a reserved charm. He loved golf, table tennis and tennis. We married in 1958 and had two children, Diane and Roy. He was a loving father and husband, and is truly missed. Hubert died in February 2005.

Provided by Mrs Cahn-Speyer

DR MAURICE M. COOMBS Chemistry 1958

At the Imperial Cancer Research Fund, Maurice established the chemistry laboratory, where he investigated research into carcinogenesis, which became his lifelong interest. He was seconded to the University of Surrey as Senior Research Fellow and was awarded his DSc there. Maurice was much loved. He leaves a wife, Anne; a son; two daughters; and nine grandchildren.

Provided by Anne Coombs

DR JOHN D. COX Chemistry 1946, PhD 1948

John worked for his PhD on the relation between optical rotation and structure in steroids. In 1949 he joined the National Physical Laboratory, where he continued until his retirement, except for a short period as Scientific Adviser at the British Embassy in Washington DC. He and his wife Jean enjoyed an active country life in retirement.

Provided by Ieuan David (Chemistry 1946, PhD 1951)

PROFESSOR EMERITUS LEWIS F. CRABTREE Aeronautics 1947

Lew was always grateful for the support he had gained from the University of Leeds, Imperial College and Cornell University. A Marshall Scholarship lured him to gain his doctorate in America, and a Chair there inevitably encouraged close work with the Royal Aeronautical Society, of which he became President from 1978 to 1979. His reputation as a firm but fair gentleman endeared him to colleagues.

Provided by David Birdsall

DR PETER S. CROSSLEY Mechanical Engineering 1969, PhD 1973

After graduating, Peter joined British Nuclear Fuels, where he remained until he took early retirement. His family are very proud of his achievements, particularly that he obtained a pilot's licence and became a qualified gliding instructor. He was dearly loved by his mother, wife, sister, children and grandchildren, and will be sorely missed.

Provided by Jane Smart

DR HENRY (GEORGE) H.R. CURNOCK Charing Cross Hospital Medical School 1942

Following service in the Royal Navy, Henry went into general practice in Cheshunt, where he worked for 31 years. He was a founder member of the Royal College of General Practitioners, and was elected a Fellow in 1983. He is survived by wife Vera, three sons and seven grandchildren.

Provided by David Curnock (Charing Cross Hospital Medical School 1970)

MR JOHN (HERBERT) J. DUNSTER Physics 1942, Chemical Engineering 1943

John was one of the country's foremost authorities on the effects of radiation, advising the government after two of the worst nuclear disasters to affect Britain, Windscale in 1957 and Chernobyl in 1986. John was Director of the UK National Radiological Protection Board from 1982 to 1987. He died on 23 April 2006.

Source: The Times

DR WILLIAM H. EKIN Westminster Medical School 1933

Billy arrived as a Consultant Surgeon in Belfast City Hospital and was one of the pair who established the first accident and emergency department in Northern Ireland. He is remembered for his keen sense of humour and his dedication to the welfare and progress of students, medics, nurses and patients.

Provided by Tom Ekin

association _obituaries

DR DENIS FORSTER Chemistry 1962, PhD 1965

After postdoctoral studies at Princeton University, Denis spent 32 years with Monsanto, where he garnered awards for work in the asetic acid process, the production of glyphosphate intermediate and novel therapies for HIV and cholesterol reduction. He was a nationally ranked squash player and avid golfer. He is survived by his wife and two daughters.

Provided by Hazel Forster

DR MANFRED FOX PhD Chemistry 1950

Manfred worked for Fison's Pharmaceuticals for some years, later setting up his own company, Innovation Marketing, following his ambition to use his scientific know-how in a more entrepreneurial way. He read widely, loved the theatre and was involved in politics. Manfred died on 6 May 2006. He is survived by his wife, Erika; daughter, Veronica; and son, Timothy.

Provided by Erika Fox

MR IAN (JOHN) A.C. GIBB, OBE Assistant Lecturer, Wye College 1949–1952

In 1949 Ian was appointed Assistant Lecturer in Farm Mechanisation at Wye College, and in 1952 Lecturer in Farm Mechanisation at Reading University, later becoming Senior Lecturer in Agricultural Engineering. Ian died on 5 December 2005.

Provided by Elizabeth Gibb

DR BRIAN (FREDERICK) B. GIBBERD Westminster Medical School 1957

In 1965 Brian was appointed Consultant General Physician and Neurologist at Westminster Hospital and Queen Mary's Hospital. He wrote over 150 papers and examined for the University of London, Colleges of Physicians and PLAB. His hobbies included gardening, travel and studying for an Open University degree, but, above all, he enjoyed his family life.

Provided by Margaret Gibberd

MR MAURICE HANCOCK Physics 1933

Maurice joined the Royal Aircraft Establishment (RAE) in 1935. He worked on the problems of aerial gunnery and proposed the idea of the gyro gunsight. Maurice became Head of the Department of Electrical Engineering at RAE, and later returned to Imperial College as a Senior Lecturer. His hobbies were walking and, above all, music.

Provided by Nicholas Robinson

See page six, *building the connection*

DR DAVID HARDING-JONES Charing Cross and Westminster Medical School 1959

David became Fellow in Orthopaedics at Dartmouth Medical College in 1965, then Senior Registrar in Orthopaedics at Cardiff Royal Infirmary, and was finally appointed Senior Consultant Orthopaedic Surgeon at the West Wales General Hospital in Carmarthen in 1971. He is survived by his wife June, five children and six grandchildren.

Provided by Andrew Harding-Jones

DR THA HLA PhD Geology 1945

Tha rose rapidly through the ranks to become Professor of Geology, then Rector of Rangoon University in 1961. He later took up an advisory post with UNESCO in Paris, before going back to teaching at Thonburi Technical Institute and Kandy, Sri Lanka. He was respected by his peers and students alike.

Provided by Wendy Tha Hla (Metallurgy 1974)

DR GEORGE D. HOBSON Oil Technology 1932, DIC 1934, PhD 1936

George was employed as a Petroleum Geology Consultant, eventually becoming a partner in V.C. Illing and Partners. He rejoined the Oil Technology section of the Department of Geology at the College in 1939, where he remained as a Lecturer and then Reader until his retirement. He died on 8 June 2006, leaving a wife, son and daughter.

Provided by Roger Hobson

DR JOHN R.F. INNES St Mary's Hospital Medical School 1946

John settled into general practice in the tight-knit community of North Watford. He was President of the West Hertfordshire and Watford Medical Society and retired to Suffolk in 1986, where he enjoyed his garden, wine and writing a detailed family history. He was married to Sheelagh for 55 years and they had three children.

Provided by Judith Harlow

DR NICHOLAS D. JAGO Zoology 1957, PhD 1959

After nine years spent lecturing in Africa, Nick took up the post of acridologist at the Academy of Natural Sciences in Philadelphia. In 1970 he returned to the UK and took up a post at the Anti Locust Research Centre in London. Nick must rate as one of the most significant grasshopper taxonomists of the twentieth century, and his work leaves a lasting legacy.

Provided by Margaret Jago

DR PETER H.A. MARTIN-KAYE Geology 1948, PhD 1954

Peter was Director of the Geological Survey in British Guyana between 1961 and 1966. He was later accepted as a Principal Investigator for NASA's *SEASAT* and *Shuttle Radar* programmes, applying radar to mapping and resource exploration. As well as his love of sailing, opera and the arts, Peter was a talented painter, writer and storyteller. He is survived by his wife, Jean.

Provided by Jayne Martin-Kaye

PROFESSOR BRIAN W. LACEY Westminster Medical School 1936

After the war, Brian became Professor of Bacteriology at Westminster Hospital, retiring in 1978. Brian died peacefully on 29 May 2006 and will be remembered as a unique human being; a little eccentric, generous and sometimes the typical absent-minded professor. He will be greatly missed by all who knew him.

Provided by Jamie Martin

PROFESSOR PETER A. LINDSAY Electrical Engineering 1944, PhD 1946

Peter obtained his BSc, MSc and PhD in quick succession, the latter for work on electron optics. He excelled in research on microwave electron tubes (valves), and in 1954 he was awarded a postdoctoral fellowship at Columbia University. He published more than 100 technical papers and was awarded a DSc in 1968.

Source: The Times

MR ROBERT N. MCRAE Mechanical Engineering 1944

Robert came from four generations of engineers. From the age of three he was engaged in machinery and gadgets. He loved his profession.

Provided by Doreen McRae

MR DOMINIK K.M. MENDELA Mechanical Engineering 1947, Aeronautics 1950

Born in Poland, Dominik came to England in 1939, becoming one of the earliest members of the first Polish 300 bomber squadron based at Bramcote. After graduating in 1950, he began working for Airspeed. Dominik had a passion for flying and loved a good game of chess.

Provided by Caroline Dance

MR PETER D. MICHAEL MSc Structural Steel Design 1979

Peter was involved in the design and analysis of structural steel work for bridges, multi-storey buildings and offshore structures, working for Earl and Wright and W.S. Atkins, among others. Peter was a modest man, a gentleman and very meticulous. He is deeply missed by his wife Hazel, family and friends.

Provided by Hazel Michael

association_obituaries

PROFESSOR KEITH J. MILLER Mechanical Engineering 1956

Keith became a mechanical engineer of world standing; in 1977 he was appointed to a Chair in Mechanical Engineering at the University of Sheffield, where he remained until his retirement in 1997. He founded the *International Journal of Fatigue of Engineering Materials and Structures*. Keith was also a remarkable explorer and mountaineer, leading the Royal Geographical Society *International Karakoram Project* in 1980.

Source: *The Independent*

DR TOWY O.W. MYRDDIN-EVANS St Mary's Hospital Medical School 1948

Towy undertook national service in the Royal Navy, serving as a Medical Officer on board HMS Glasgow, HMS Victory and HMS Vanguard. He later practiced as a private GP in London, where he became senior partner, until he retired in 1985. He died on 9 April 2006, leaving two daughters.

Provided by *Gail Murray*

PROFESSOR YUVAL NE'EMAN PhD Mathematics 1962

Yuval was a world-renowned nuclear physicist, who also played a role in Israeli politics. At the height of his academic career, he was President of Tel Aviv University, and in 1983 he established the Israel Space Agency. He was given Israel's highest civilian honour, the Israel Prize, for his work in the exact sciences. He is survived by his wife, two children, two grandchildren and a sister.

Source: *The New York Times*

MR DENIS B. O'NEILL Civil Engineering 1942, 1949

During 40 years as a consultant, Denis worked on projects including vibration control of blasting operations on the Kariba Dam and the Hong Kong Mass Transit Railway. In addition, he led the family firm, Hawkes of Saville Row from 1969 to 1971. He was a man of great strength and integrity. He was devoted to his family and loved by all who knew him.

Provided by *Jacqueline O'Neill*

DR GEOFFREY PAGE PhD Chemistry 1969

Geoff established himself as a respected leader in the world of business and science, as Chief Executive of the Dairy Research Institute, a Crown company and Industrial Research Ltd. He died on

3 August 2006 after only two years as Chief Executive of Manukau Institute of Technology. He is greatly missed by his wife Ann, two daughters, four grandchildren and his colleagues.

Provided by *Ann Page*

PROFESSOR WILLIAM PARRY PhD Mathematics 1960

Prior to being appointed as a Reader at the University of Warwick in 1968, William held posts at the University of Birmingham and the University of Surrey. He made many important contributions to the mathematical theory of ergodic theory, publishing over 80 original papers and four books. William died on 20 August 2006. He is survived by his wife Benita and daughter Rachel.

Provided by *Mark Pollicott*

DR MELANIE J. PASK Zoology 1984, PhD 1987

Melanie went to work for the National Rivers Authority on leaving Imperial College. Later, at the newly created Environment Agency, as Water Quality Technical Specialist, her career continued to be involved with water. Melanie married Nick Purdon in 1999.

Provided by *Denise Pask*

PROFESSOR AMULYA K.N. REDDY PhD Applied Physical Chemistry 1957

Amulya Reddy was known primarily for his work as the father of Indian appropriate technology, a leading energy analyst and advocate, and a prominent spokesperson for sustainable development. He was a highly respected teacher who inspired several generations of Indian scientists. He leaves behind his wife, Vimala, three daughters, six grandchildren and a great-granddaughter.

Source: *The Hindu*

DR JOHN M. RODERICK St Mary's Hospital Medical School 1951

After six months as Obstetrics and Casualty House Surgeon at the Princess Beatrice Hospital, John became a GP in Liss, where he served the community with great devotion until retirement in 1984. He worked voluntarily for several years as Medical Officer to the *Annual Holidays for the Disabled* week in Norfolk. He leaves a wife, Desirée, four children, twelve grandchildren and six great grandchildren.

Provided by *Desirée Roderick*

Also sadly deceased

MR VIC A.L. ALLEN Wye College 1960

MISS IDA E. AUSTEN Physics 1957

DR RAYMOND L. BELSEY St Mary's Hospital Medical School 1956

MR A.A. BINDLOSS Wye College 1938

PROFESSOR DENNIS K. BRITTON Professor of Agricultural Economics, Wye College 1970-83

MRS H.R. BURROWS Wye College 1967

MRS BARBARA CARMICHAEL Human Molecular Genetics 1998, MSc 2000

MR ERNESTO J.D.J. CARRASQUILLA CANIZALES MSc Public Health Engineering 1984

MR JAMES CARTER Aeronautics 1960

MR FRANK R. CHARLES Chemistry 1925, MSc 1926

MR MAURICE G. CHARLTON Chemistry 1941, MSc 1946

MR WALTER B. CLARKE Chemistry 1943

MR DAVID C. DENNE Wye College 1936

MR H.A. EDWARDS Wye College 1931

DR J.F.A. FENTON St Mary's Hospital Medical School 1943

MR RICHARD M. GASCOIGNE Physics 1964

MR OLSEN A. GUNAWARDANA Civil Engineering 1968

MR ROBIN A. HAGGARTY Wye College 1958

DR IAN H. HAINES PhD Zoology 1973

EMERITUS PROFESSOR JOHN L. HAMERTON Zoology 1952

MR STANLEY G. HANCOCK Electrical Engineering 1949

MR ANTHONY B. HARMAN Civil Engineering 1946, DIC 1949

MR PETER HEATH Civil Engineering 1958, DIC 1963

MR A.A. HEIDECKER Mining Engineering 1974

MR JOHN A. HITCHCOCK Mathematics 1949, Aeronautics 1950

MR JOHN H.M. HOLMES Chemical Engineering 1955

EMERITUS PROFESSOR WILLIAM HOLMES Professor of Agriculture 1955-87, Fellow of Wye College

DR CSABA JUHÁSZ Electrical Engineering 1959, DIC 1963

MR PHILIP O. KANE Chemistry 1945

DR GHASSAN A. KUBBA Electrical Engineering 1965, PhD 1970

MR WILLIAM LAMPKIN Mathematics 1958, MSc 1963

MR W.A. LANG 1938

MR DAVID O.C. LARR Wye College 1959

DR. JOHN A. LONDON St Mary's Hospital Medical School 1955

MR ROBERT F. LONG Chemistry 1948

MR THOMAS (HENRY) T. LORNE Chemistry 1934, Oil Technology 1935

MR DONALD M. MACPHERSON Mining Engineering 1954, 1958

DR KHALIL M. MALOUF Civil Engineering 1946, PhD 1950

COMMANDER HENRY S. MARLAND Electrical Engineering 1951

MR HUGH F. MARRIOTT Electrical Engineering 1950

DR DENNIS F. MARSHAM Chemistry 1965, PhD 1969

MRS ERIKA MILLMAN (NEE SCHAFLE) Chemistry 1944

DR SUBHABRATA MUKHERJEE Chemistry 1985, PhD 1988

MR WENG K. NG MSc Chemistry 1965

MR ANDREW C. NICOLLS Electrical Engineering 1950

PROFESSOR JOHN A. OSBORN PhD Chemistry 1966

MR RICHARD G. PARR Electrical Engineering 1942

MR NICOLAS PERRIER Geology 1999, MSc 2000

DR R.J. PETT St Mary's Hospital Medical School 1951

MR GERARD N. PINK Centre for History of Science, Technology and Medicine 1975

DR NORMAN T. POLLITT St Mary's Hospital Medical School 1952

DR KEITH PRIDAY Chemistry 1950, PhD 1953

DR L. READ St Mary's Hospital Medical School 1940

EMERITUS PROFESSOR LOVAT REES Professor of Physical Chemistry 1958-93

MR CLIVE J. ROBERTS Civil Engineering 1983

DR PATRICK D. TREVOR-ROPER Westminster Medical School 1940

MISS JULIA C. RUMBELL Environmental Science 1996

MR MICHAEL T. RUTTER Materials 1957

DR G.E. SHACKLETON St Mary's Hospital Medical School 1955

DR VICTOR J. SHELDON Westminster Medical School 1940

MR HARDOL W. SKEELES Wye College 1939

EMERITUS PROFESSOR RICHARD R. STEPHENS Charing Cross Medical School 1949

DR J. STEVENSON St Mary's Hospital Medical School 1952

MR BOGDAN A. SZYDLO Materials 1970

DR DEREK A. TEMPLE Materials 1945

MRS R. THORPE (NÉE COOK) Wye College 1941

MRS JOYCE TINSLEY (NÉE VAN KONYENBURG) Zoology 1947

MR ARTHUR F. TOPLIS Aeronautics 1952

MR R. VALLANCE Wye College 1968

DR J.D. WHEATCROFT Westminster Medical School 1949

MR HENRY J. WILD Electrical Engineering 1939

DR MICHAEL G. WILLIAMS St Mary's Hospital Medical School 1956

MR ANTHONY M. WRIGHT Robotics and Automated Systems 1985

DR W. WYNNE-WILLSON St Mary's Hospital Medical School 1937

honours

Birthday Honours 2006

PROFESSOR SIR ROY M. ANDERSON, KBE FRS

FMedSci (Zoology 1968, PhD 1971)
Chair in Infectious Disease Epidemiology, Imperial College London and Chief Scientific Adviser, Ministry of Defence

Knighted for epidemiological research, studying the spread of diseases such as AIDS, BSE, foot and mouth and SARS, and providing the government with advice on how to tackle their transmission

MR NICHOLAS P. BRAYSHAW, OBE BSc ARSM

(Materials 1976)
Chair, Confederation of British Industry Manufacturing Council
OBE for services to industry

MR JOHN D. EDE, MBE (Physics 1949)

Member, Mayor of Bath's Corps of Honorary Guides
MBE for services to the tourist industry in Bath, Somerset

MS JUDITH E. HACKITT, CBE (Chemical Engineering 1975)

Director, Chemistry for Europe Implementation, European Chemical Industry Council

CBE for services to occupational health and safety

MR GEOFFREY T. HARDING, OBE (Civil Engineering 1968)

Lately Civil and Structural Engineer, Buildings Division Branch, Office of the Deputy Prime Minister
OBE

DR CYRIL NEMETH, MBE JP MA MRCP (Westminster Medical School 1952)

MBE for public service in London

PROFESSOR DAVID A. NETHERCOT, OBE FREng

Head of the Department of Civil and Environmental Engineering, Imperial College London
OBE for services to structural engineering

MR JAG M. PURI, OBE (Mechanical Engineering 1958)

Managing Director, Combine Company
OBE for furthering UK-Indian relations in education and commerce

MISS JANET RIDGE, MBE (Wye College 1979)

Chief Executive, Bedfordshire Rural Communities Charity

MBE for services to communities in Bedfordshire

MR ALAN WIGNALL, OBE (Electrical Engineering 1980)

Technical Director, Ultra Electronics Ltd, Sonar and Communications Systems
OBE for services to the defence industry

Fellows of the Royal Academy of Engineering 2006

PROFESSOR PETER CAWLEY, FREng

Professor of Mechanical Engineering, Imperial College London

PROFESSOR EMERITUS ANTHONY G. EVANS, FREng

(Materials 1964, PhD 1967)
Professor of Materials and Mechanical Engineering, University of California

PROFESSOR J. MICHAEL R. GRAHAM, FREng

Professor of Unsteady Aerodynamics, Imperial College London

PROFESSOR ANDREW G. LIVINGSTON, FREng

Professor of Chemical Engineering, Imperial College London

PROFESSOR GEOFFREY C. MAITLAND, FREng

Professor of Energy Engineering, Imperial College London

PROFESSOR GORDON G.T. MASTERTON, FREng

(MSc Civil Engineering 1972)
Managing Director, Jacobs Babbie

PROFESSOR WILLIAM I. MILNE, FREng (PhD)

Electrical Engineering 1973)
1944 Chair of Electrical Engineering, Cambridge University

PROFESSOR IAN POSTLETHWAITE, FREng

(Electrical Engineering 1975)
Professor of Engineering, University of Leicester

PROFESSOR MORRIS S. SLOMAN, FREng

Deputy Head of the Department of Computing and Director of Research, Imperial College London

EUR ING JEAN VENABLES, OBE FREng

(Civil Engineering 1969, MSc 1974)
Chairman, Crane Environmental Ltd; Director, Venables Consultancy; Chairman, Thames Estuary Partnership and Chief Executive, Association of Drainage Authorities

Honorary Fellow of the Royal Academy of Engineering 2006

PROFESSOR SIR ARA DARZI, FREng KBE FMedSci

Professor of Surgery and Head of the Division of Surgery, Anaesthesia and Intensive Care, Imperial College London

Fellows of the Royal Society 2006

PROFESSOR STEPHEN M. BARNETT, FRS

(PhD Physics 1985)
Professor of Quantum Optics, University of Strathclyde

PROFESSOR DAVID J. EWINS, FRS

Professor of Vibration Engineering, Imperial College London

PROFESSOR MARC FELDMANN, FRS

Head of the Department of Cytokine Biology and Cellular Immunology and the Kennedy Institute of Rheumatology Division, Imperial College London

DR MATTHEW J.A. FREEMAN, FRS (PhD)

Biochemistry 1987)
Scientific staff, Medical Research Council

PROFESSOR PETER C. WEST, FRS (Physics 1973,

PhD 1976)
Professor of Theoretical Physics, King's College London

association_honours

Fellow of the British Academy 2006

PROFESSOR PAUL SILLITOE, FBA (Tropical and

Subtropical Horticulture 1992)
Professor of Anthropology, University of Durham

Honorary Fellow of the British Academy 2006

DR LISBET RAUSING, FBA

Centre for the History of Science, Technology and Medicine, Imperial College London and the Lisbet Rausing Charitable Trust

Other awards and appointments

DR TERRY A. BERGER (PhD Chemistry 1975)

Awarded the Martin Medal by the Chromatographic Society in 2004

MR HAMISH J.L. BOHANNAN (Chemistry 1975,

MEng Mining Engineering 1980)
Appointed Managing Director and Chief Executive Officer of Braemore Resources plc

PROFESSOR JINING CHEN (PhD Civil Engineering

1992)
Appointed Vice-President of Tsinghua University

DR KONG-LUEN HEONG (MSc Zoology, PhD 1979)

Entomologist, International Rice Research Institute
Awarded the Third World Academy of Science Prize in Agricultural Sciences for pioneering work in ecology, and integrating biological and social sciences to promote integrated pest management

DR BASIL L. JOFFE (PhD Chemical Engineering 1971)

Vice President of Technology, Aspen Technology
Awarded the 2006 Computing Practice Award by the American Institute of Chemical Engineers, for his role in developing innovative planning systems for the process industries

DR AGUSTIN H. LLANA RODRIGUEZ (MSc Mineral

Technology 1974)
Appointed Country Chair for Spain and Cluster Country Chair for Portugal and Gibraltar, Shell España

MR DANIEL J. MURPHY (Agriculture 2002)

Runner-Up Young Champion of the Countryside

MR ALEXANDER PARKS (MEng Petroleum

Engineering 1997)
Appointed Chief Executive Officer of Otto Energy

MR RON ZWANZIGER (Civil Engineering 1975)

Chairman and Chief Executive Officer of Inverness Medical Innovations Inc
Appointed to the Board of Directors of Advanced Magnetics

New Year Honours 2007 will appear in issue 30 of *Imperial Matters*.

If you receive a special honour or award, we will try to include your name on a future honours page. Email matters@imperial.ac.uk to let us know.

Imperial College London

2007 calendar of events

Throughout 2007, Imperial College London will stage a year-long celebration of its Centenary with an exciting events programme, including many events specifically for alumni. Please visit www.imperial.ac.uk/events for more information and details of how to book. Events are free unless stated.

20 February	Friends of Imperial College Lecture: Relieving 500 million from 'forgotten diseases' Professor Alan Fenwick, Chair of Tropical Parasitology, Director of the Schistosomiasis Control Initiative (£)	16 May	Athena Lecture: Growing Interactions from individuals to systems in my research in the College Professor Dame Julia Higgins, Principal, Faculty of Engineering, Imperial College London
27 February	Hounsfield Lecture: Medical Imaging and Computational Physiology – the IUPS Physiome Project Professor Peter Hunter, Director, Bioengineering Institute, University of Auckland	16 June	Imperial College Union Centenary Ball 2007 A champagne reception will be followed by a three-course meal and entertainment (£)
6 March	94th City and Guilds College Association Annual Dinner Prestigious guest speakers Lord Browne of Madingley, Chief Executive, BP, and Sir Richard Sykes, Rector, Imperial College London (£)	30 June	Recent Graduates Event Relive your student days at the College, with other graduates of the last five years (£)
7 March	J.P.R. Williams Rugby Varsity Match A competitive match between Imperial College Union RFC and Imperial Medicals RFC promises an excellent standard of rugby (£)	13 July	Tanaka Business School Centenary Alumni Reunion An action-packed daytime programme followed by a glitzy evening party (£)
13 March	Centenary Alumni Quiz Night Second annual alumni quiz night (£)	14–16 September	Alumni Reunion 2007 A special Centenary reunion which includes a broad lecture programme, family activities, departmental and museum tours, and evening events (£)
20 March	Friends of Imperial College Lecture: Upgrading Humans – technical realities and new morals Professor Kevin Warwick, Department of Cybernetics, University of Reading (£)	19 September	Annual Fund Donor Event Special lecture and reception hosted by the Rector for Annual Fund donors
26 March	Imperial College China Alumni Association Evening get-together in Beijing sponsored by Tanaka Business School	4 October	Alumni Drinks Informal drinks for graduates of the last five years
29 March	Imperial College China Alumni Association Evening get-together in Shanghai sponsored by Tanaka Business School	11 October	Centenary Prestigious Lecture: Relations among Nations on a Finite Planet Professor Lord Robert May, University of Oxford and Imperial College London
20 April	Imperial College Alumni Association of Hong Kong Alumni dinner with the Rector held in Hong Kong (£)	25 October	Engineering Careers Fair and Networking Reception Careers event for engineering students and graduates of Imperial College
27 April	Western Australia Alumni Association Alumni dinner with the Rector held in Perth, Australia (£)	14 November	Annual Alumni Lecture and Drinks Reception A topical lecture and drinks reception open to all alumni of the College (£)
3 May	Alumni Drinks Informal drinks for graduates of the last five years	15 November	Gabor Lecture Sir John Rose, Chief Executive, Rolls-Royce Plc
4–6 May	Imperial College Club of Germany 100 for 100 in the 'flaming' Rhine in Bonn, Germany (£)	21 November	Schrödinger Lecture Professor Jim Virdee, Professor of Physics, Imperial College London
		29 November	Singapore Alumni Management and Technology Symposium
		30 November	Singapore Alumni Gala Dinner Alumni dinner with the Rector held in Singapore (£)

www.imperial.ac.uk/alumni/interactive