

Imperial College
London

Imperial College London

Annual Report and Accounts | 2009-10

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OUR MISSION

Imperial College embodies and delivers world class scholarship, education and research in science, engineering, medicine and business, with particular regard to their application in industry, commerce and healthcare. We foster multidisciplinary working internally and collaborate widely externally.

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On the cover:

Dr Ned Ekins-Daukes, Senior Lecturer in Physics, at Imperial's Grantham Institute for Climate Change with his PhD student, Ms Megumi Yoshida, Experimental Solid State Physics, using a solar simulator to measure the electrical power delivered by a 28% efficient solar cell.

Rector's foreword



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“A particularly challenging environment has arisen out of seismic changes in the way that English universities are to be financed and regulated... However, these changes also present opportunities because they demand that English universities look hard at themselves and think carefully about what they stand for, and where they wish to be, both in the short term and in a generation from now.”

At the time of writing, in November 2010, the future for universities looks more challenging than for decades, but these challenges also bring with them many opportunities. A particularly challenging environment has arisen out of seismic changes in the way that English universities are to be financed and regulated, following the coalition government's spending review and Lord Browne's report on higher education funding and student finance, both of which appeared in October. However, these changes also present opportunities because they demand that English universities look hard at themselves and think carefully about what they stand for, and where they wish to be, both in the short term and in a generation from now.

Our response to the challenges will be finalised when we read the details of the White Paper and the legislation that emerges, but the College's broad direction of travel is clear. The publication of our *Strategy 2010–14* this year, clearly set out our vision, mission and values, and the strategic priorities that will guide us over this five-year period. It represents the fruits of a College-wide consultation process and has resulted in a powerful reaffirmation of our academic philosophy that Imperial must focus on excellence in research, education and translation, and of the importance of attracting and investing in outstanding staff in our core disciplines of science, engineering, medicine and business.

Nevertheless, the forthcoming public expenditure cuts to university teaching will be significant. We expect fees to increase nationally and they will do so at Imperial. Our response must be to continue to search for, and select, the most academically able students from across the world. To achieve that, we will consider how we can make the fullest use of our own resources to ensure that all students, who may benefit from our courses, are attracted to apply.

We will therefore realise a long-term campaign for philanthropic support focused on scholarships and financial aid. This will be supported by the Development Board, a new Council committee, which is one recommendation of this year's review of College governance led by Sir Rob Margetts. The goal of that Board will be to help build the resilience of an endowment to give Imperial a sustainable basis to attract the brightest and the best in the world, irrespective of their ability to pay increased fees, for generations to come. A similar long-term perspective will be taken at another new Council committee, which will examine risk and be chaired by our new Deputy Chairman, Baroness Eliza Manningham-Buller.

In his foreword to the *Annual Report and Accounts 2008–09*, Sir Roy Anderson noted that in the coming year, it would be important to persuade policy makers of the value of research excellence. In making this autumn's comprehensive spending review announcement, the Chancellor acknowledged that Britain is a world leader in scientific research and that this is vital to our future economic success; as a result, the UK's £4.6 billion science budget has been spared drastic cuts and NHS spending on health research will be maintained. Imperial welcomes the government's stance that state funding for teaching science, technology, engineering and maths-based subjects should continue; these courses, and the graduates they produce, are an essential part of any recovery plan for the current financial climate.

Due to the challenging environment, we believe this is the time to invest our own resources in the most promising and talented academics. In October 2009 we welcomed the first annual intake of 20 new Junior Research Fellows, a significant commitment from the College to nurture researchers taking their first

steps towards becoming independent investigators and leaders of their own laboratories. And in October 2010, we announced an open competition for new Imperial College Lectureships for lecturers of outstanding ability and potential.

The death of former Rector, Lord Flowers, in June this year, reminded us of the debt that Imperial owes preceding generations for many of the opportunities from which we benefit today. His achievements are too numerous to record adequately here but, by seeking integration of medicine with scientific and engineering subjects, foreseeing the importance of the environment, and encouraging the development of strong international links, Brian Flowers laid important foundations for the modern College.

During 2010 these foundations have supported two significant advances. Our Academic Health Science Centre continues to grow and strengthen; in September, a new translational research building at the Hammersmith Campus was 'topped out'. This £80 million project exists thanks to the College and the Trust working together towards the AHSC's shared mission, and we hope will soon be a flagship for the benefits of integrating healthcare research, teaching and clinical care. And in August, the Singaporean Prime Minister, Lee Hsien Loong, announced that a third medical school for Singapore would be formed through a joint venture between Imperial and Nanyang Technological University. Due to take its first students in 2013, the programme will be based on Imperial's medical curriculum and standard of teaching, and the resulting joint degree is the first of any sort that Imperial, founded in 1907, will develop, deliver and award overseas.

In its latest, revised, and arguably tougher, tables, Imperial was placed ninth this year in the *Times Higher Education (THE)* world university rankings, and is one of only three UK

universities in the world top 10. Such a performance is a reflection of the strength of the College's academic and support staff, and I record once again my gratitude for their dedication and the staggeringly high standards that they set for themselves.

Among them are two senior members of the College whom I wish to thank for their lasting contributions. Sir Peter Knight, Deputy Rector (Research), former Principal of the Faculty of Natural Sciences and Head of the Department of Physics, who retired after over 30 years of distinguished academic service at the College; and Dr Martin Knight, former Honorary Treasurer and member of the College's governing body in the 1990s, Chairman of Imperial Innovations, and Chief Operating Officer for the last six years, who will leave the College at the end of the year. As the pages of this Annual Report bear witness, Martin Knight has been instrumental in developing the College's financial strategy and building a professional and sustainable platform for Imperial's financial management and support services, upon which our academic mission thrives.

Looking back, the 2009–10 Annual Report which follows reflects but a small selection of the outstanding achievements of staff and students at Imperial in the past year.

Sir Keith O'Nions, Rector



IMPERIAL COLLEGE LONDON'S MANAGEMENT BOARD

- » Sir Roy Anderson, Rector (to 31 December 2009)
- » Professor Stephen Richardson, Deputy Rector and Principal, Faculty of Engineering
- » Professor Stephen Smith, Principal, Faculty of Medicine and Chief Executive, Imperial College Healthcare NHS Trust
- » Professor David Begg, Principal, Imperial College Business School
- » Dr Rodney Eastwood, College Secretary and Clerk to the Court and Council
- » Professor Julia Buckingham, Pro Rector (Education and Academic Affairs)
- » Ms Claire Perry, Managing Director, Imperial College Healthcare NHS Trust
- » Sir Keith O'Nions, Rector (from 1 January 2010)
- » Professor Sir Peter Knight, Deputy Rector (Research)
- » Professor Maggie Dallman, Principal, Faculty of Natural Sciences
- » Dr Martin Knight, Chief Operating Officer
- » Mr Edward Astle, Pro Rector (Enterprise)
- » Professor Mary Ritter, Pro Rector (International)

Report of the Chief Operating Officer

SCOPE OF THE FINANCIAL STATEMENTS

The financial statements comprise the consolidated results of the College, its subsidiaries and the Students' Union. There have been no changes in the scope since the previous year. The subsidiaries undertake activities which for legal or commercial reasons are more appropriately channelled through limited companies or other vehicles. Such activities include the commercial exploitation of ideas and inventions, consultancy and scientific services, and renting of College space.

The financial statements have been prepared according to the Statement of Recommended Practice — Accounting in Further and Higher Education Institutions (SORP 2007) and other relevant accounting standards.



*Dr M.P. Knight
Chief Operating Officer*

RESULTS FOR THE YEAR—KEY HIGHLIGHTS

The College's consolidated income and expenditure for the year to 31 July 2010 and the net cash/borrowing position at that date are summarised below:

	2010 £m	2009 £m	Change %
Total income (including share of joint venture)	694.0	672.1	+3
Less share of joint venture income	(0.8)	(0.3)	
Share of profits from associates and joint venture	0.3	0.1	
Total expenditure	(651.2)	(657.4)	-1
Operating surplus on continuing operations	42.3	14.5	
Tax and minority interest	(0.9)	1.6	
Surplus before exceptional items	41.4	16.1	
Exceptional loss on deemed disposal of interests in a group undertaking	(1.2)	–	
Surplus on continuing operations after exceptional items	40.2	16.1	
Use of accumulated income within specific reserves	1.1	0.6	
Surplus for the year	41.3	16.7	
Income analysis			
Funding council grants	172.2	178.4	-4
Academic fees and support grants			
Home and EU students (full-time)	31.3	27.2	+15
Overseas students	75.1	68.6	+10
Other	14.5	13.0	+12
	120.9	108.8	+11
Research income			
UK research councils	104.4	102.1	+2
UK charities	70.2	70.9	-1
UK industry	19.6	27.1	-28
European Union and overseas	63.3	55.6	+14
Other	39.3	31.1	+26
	296.8	286.8	+4

	2010 £m	2009 £m	Change £m
Capital expenditure			
Externally funded	77.4	34.4	+43.0
College funded	37.6	80.9	-43.3
	115.0	115.3	-0.3
Cash and borrowings			
Cash and short-term investments	188.6	201.1	-12.5
Long-term borrowings	(171.3)	(173.2)	+1.9
	17.3	27.9	-10.6

The year 2009–10 was in some respects the period of the ‘phoney war’. The tough times ahead, about which there has been much discussion in the College over the last two years, did not really materialise:

- Research grant volumes were all but flat; academic fees rose by 11%, overseas student fees rising, interestingly, by a lower figure of 9.5%; the HEFCE grant fell marginally by £6 million; capital expenditure remained high, at a gross figure of £115 million, of which the College share was a still substantial £38 million; the net cash position of the College remained a healthy £17 million, with gross debt of £171 million being a decently low 23% of stated net assets. These figures, together with an operating surplus of £42.3 million and a retained net surplus of £41.3 million suggest a solid, stable performance from which the College can survey the outside world.

If the above conveys an image of the College that is complacent, that would be quite wrong. One of the College’s strengths is its ability to examine rationally and clinically its current position and its

future prospects and then act accordingly to improve these. During 2009–10, there was never any doubt in the College that the ‘phoney war’ would end and that 2010–11, and beyond, would present a very different financial climate.

The College took timely actions accordingly:

- Recruitment levels and staff costs were contained. Five years ago, these costs represented 57% of total income; in 2009–10, they represented 52%.
- The College was actively engaged in the multilateral discussions concerning pension provision. The resolution of the negotiations between employers and unions on the future of the USS and the reforms proposed hold out the hope that the worst predictions of increased costs will not be realised.
- The capital expenditure programme was scaled back during the course of the year. Specifically, the College’s own expenditure reduced from £81 million, in each of the last two years, to £38 million. More pertinently for the future, no new major projects

Segmental information	University (education and research)	College Fund	Imperial Innovations Group plc	Total 2010	University (education and research)	College Fund	Imperial Innovations Group plc	Total 2009
	2010 £m	2010 £m	2010 £m	£m	2009 £m	2009 £m	2009 £m	£m
Operating surplus	36.7	3.1	2.5	42.3	15.3	1.8	(2.6)	14.5
Total fixed assets	741.8	81.8	44.9	868.5	695.0	53.2	38.3	786.5
Net Debt								
Cash in hand	80.2	6.8	9.2	96.2	12.7	8.7	1.4	22.8
Overdrafts	(3.7)	–	–	(3.7)	(2.0)	–	–	(2.0)
Short-term investments	65.0	–	14.6	79.6	131.0	–	29.3	160.3
Cash in endowment assets	–	16.5	–	16.5	–	20.0	–	20.0
Total cash and short-term investments	141.5	23.3	23.8	188.6	141.7	28.7	30.7	201.1
Borrowings	(123.8)	(47.5)	–	(171.3)	(150.6)	(22.6)	–	(173.2)
Total net debt	17.7	(24.2)	23.8	17.3	(8.9)	6.1	30.7	27.9

were started; and the only significant on balance sheet capital expenditure is the major medical research building at the Hammersmith Campus, which was topped out in September 2010.

- On the face of it, the debtor book rose significantly. Paradoxically, this increase took place precisely because of a tighter approach to working capital and cash flow management, as a stricter approach to the invoicing for deposit for teaching courses was implemented.
- Management of the treasury position of the College again saw the net interest bill contained – a difficult task when interest earned on deposits was at historically low levels. Net interest earned equalled net interest paid.

So at the consolidated level, the picture is robust. But as was pointed out last year, the statement of consolidated figures hides some interesting developments. For the consolidated figures are the amalgam of three separately managed entities: the university, the College Fund (i.e. the collection of assets managed with a clear and unambiguous investment focus) and Imperial Innovations Group plc (Innovations), the College's 50% owned, quoted subsidiary which focuses on the exploitation of intellectual property emanating from the College. The consolidated accounts obscure the progress made in both the College Fund and in Innovations.

For Innovations this is partly because the College's accounting rules are UK GAAP, whereas Innovations has to abide by IFRS rules. This has led to a lower stated profit figure in the consolidated accounts (£2.5 million vs £5.5 million) and a much lower net asset value (£68 million vs £91 million) than can be calculated from Innovations' publicly available accounts. There is also the fact that at this stage of Innovations' development it is entirely appropriate that cash should reduce as its investment activity increases. Their cash decreased by a net £6 million to £24 million; but investment assets rose to £45 million. The figures themselves do not reveal that Innovations is widely regarded as the leading exponent of exploiting university IP in the UK; but close examination of the figures shows the progress that Innovations has made in creating a solid platform for profitable growth in the future.

Fig. 1 ► RESEARCH INCOME

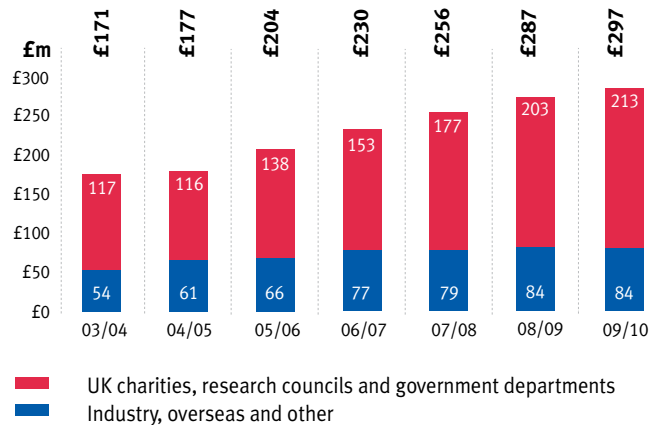


Fig. 2 ► FIXED ASSETS

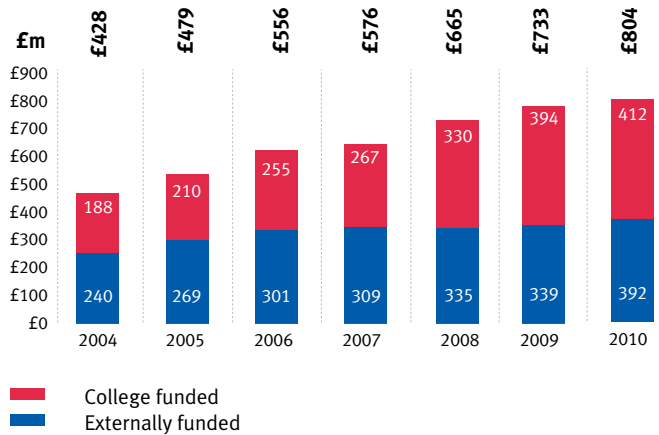
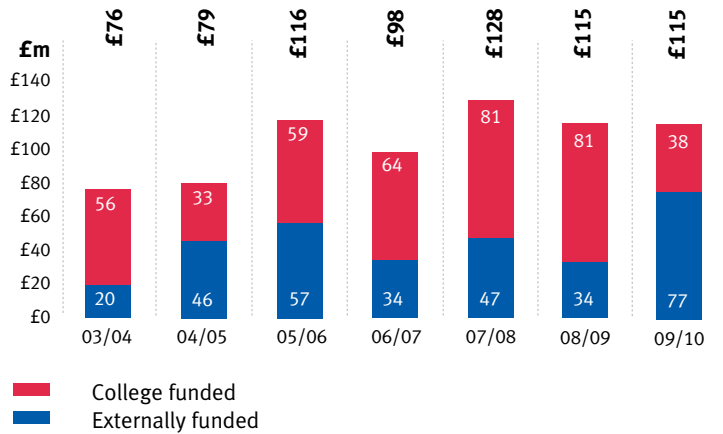


Fig. 3 ▶ CAPITAL EXPENDITURE



For the College Fund, progress has been outstanding. With its entirely investment focus, the key indication of success is growth in asset value. Taking a market value for its quoted stocks and shares portfolio and a market value for its redeveloped property portfolio, the asset value of the College Fund grew in the year by 25% to £298 million. The consolidated accounts contain a figure for such assets of only £100 million. This growth was achieved despite £17 million being held in cash, on which negligible interest was earned, to fund future property development commitments. The College is fortunate to have a College Fund Board of such investment wisdom. The success and the asset growth of the College Fund will be vital to the College’s financial well-being as government spending cuts take full effect and as universities in the UK are inevitably forced to look to their endeavours to meet the forthcoming financial challenges.

The College can face the challenging prospect of a much reduced public sector funding with a reasonable degree of equanimity. The results for the year 2009–10 show that it has the financial strength, capacity and the management determination to maintain the excellence of its academic activity in the face of some turbulent times ahead.

Dr M.P. Knight
Chief Operating Officer

First JRFs welcomed

October 2009 saw Imperial's new Junior Research Fellows start their three years free from teaching and administration. These early-career researchers also receive a competitive salary and laboratory support costs, which will enable them to establish and develop their own scientific paths. Exploring issues such as how galaxies form and how to use organic solar cells to generate cheap, long-term energy, each Fellow is supported and mentored by a senior researcher, to advise on career development, and the mechanics of establishing and furthering research programmes. The scheme also aims to help them make the difficult leap from postdoctoral researcher to lecturer.



College news

DONOR TARGET ACHIEVED

The College's Annual Fund reached its target of 1,700 donors during the 2009–10 financial year. The fund contributed £474,465 to the total of £8.5 million raised, providing a stream of philanthropic income to key College projects.

UNIVERSITY RANKING AND GRADUATE EMPLOYABILITY

In 2010, Imperial was placed third in Europe and ninth in the world in the *THE (Times Higher Education)* world university rankings. Meanwhile the Destinations of Leavers from Higher Education (DLHE) survey published in 2010 showed that 89 per cent of Imperial's graduates were in work and/or study.

RECTOR SUCCESSION

At the end of December 2009, Sir Roy Anderson stepped down from his post as Rector in order to return to his research career. He was succeeded by Sir Keith O'Nions, first as Acting Rector, then in July 2010 as a permanent appointment. Sir Keith brings extensive leadership experience in both academia and government and will stay in post until 2013. Sir Keith joined the College in July 2008 as Director of Imperial's Institute for Security Science and Technology.

QAA INSTITUTIONAL AUDIT

A team of auditors from the Quality Assurance Agency for Higher Education (QAA) visited Imperial in February 2010 to carry out an institutional audit. The audit provides public information on the quality of the learning opportunities available to students, and on the academic standards of the awards that the College offers. The outcomes of the audit were good and the audit team judged that: "confidence can reasonably be placed in the soundness of [Imperial's] present and likely future management of the academic standards of the awards it offers and in the soundness of [the College's] present and likely future management of the quality of the learning opportunities available to students". 'Confidence' is most positive judgement given by the QAA.

INNOVATIVE TECHNOLOGY CENTRE

The Imperial College London Centre for Bio-Inspired Technology opened in December 2009, funded by Taiwanese business leader and Physics alumnus, Professor Winston Wong. The Centre forms part of the Institute of Biomedical Engineering and develops a range of devices that use technology to tackle health problems. These include the 'SNP Doctor', a handheld device that predicts whether patients will respond adversely to medication, and a digital 'plaster' that should ultimately enable doctors to monitor patients recovering from surgery at home.

See more at: <http://bit.ly/93yYpG>

ROYAL SOCIETY-FUNDED RESEARCH FELLOWSHIPS

Early-career researchers Dr Zita Martins (Earth Science and Engineering), Dr David Drew (Life Sciences), Dr Sean Barrett (Physics) and Dr Salvador Navarro-Martinez (Mechanical Engineering) received a career boost from the Royal Society, when they were awarded University Research Fellowships in October 2009. The Royal Society scheme gives outstanding scientists, who have the potential to become leaders in their chosen fields, the opportunity to build an independent research career. The scheme is extremely competitive and Imperial's four fellowships were among 38 awarded by the Royal Society across the UK.

INTERNATIONAL FOCUS ON INNOVATION

India's Minister for Human Resources Development, Mr Kapil Sibal, visited Imperial in January 2010 to explore university innovation and the translation of research into new technologies and applications. As part of a UK tour to strengthen educational ties between the two countries, his visit came at a time when India is exploring ways to develop its higher education sector, including plans for 'innovation universities'. Imperial's current collaborations with India include the Rajiv Gandhi Centre in the Business School and links between the College's Grantham Institute for Climate Change and the Divecha Institute for Climate Change at the Indian Institute of Science Bangalore.

FIRST INTERNATIONAL JOINT PHDS

The first PhD programmes to be supervised, assessed and awarded by Imperial jointly with other institutions will accept their first students in August 2010, it was announced in February 2010. The new joint qualifications are offered in partnership with the National University of Singapore, Nanyang Technological University, Singapore, and the University of Hong Kong. They will give students the opportunity to split their time equally between London and Singapore or Hong Kong, encouraging international mobility and preparing leading early-career researchers for global careers.

TOP WELSH SCIENCE ROLE

In February 2010, Professor John Harries (Physics) was appointed Chief Scientific Advisor for Wales, making him the second current Chief Scientific Advisor at the College. A renowned atmospheric physicist, he joins Professor Sir John Beddington, who became advisor to the UK government in October 2007.

STONEWALL TOP 100 RANKING

Imperial was named in January 2010 as one of the UK's top employers for lesbian, gay, bisexual and transgender (LGBT) people. Imperial's place at number 79 in Stonewall's 2010 Workplace Equality Index makes it one of only two universities in the top 100 list. The annual index lists the UK's best employers for LGBT people, based on the steps they are taking to create a work environment in which all staff feel secure and valued.

PRINCE'S GARDENS RESTORED

Imperial's newly restored Prince's Gardens were officially opened in February 2010 by London Mayor, Boris Johnson. The £160 million investment by the College saw the construction of seven new student halls of residence and a state-of-the-art sports centre, in addition to the landscaping of the gardens themselves.

Making mining more efficient

Professor Jan Cilliers (Earth Science and Engineering) was elected a Fellow of the Royal Academy of Engineering for his work in froth flotation technology, which uses bubbles to separate valuable minerals from mined rock. Professor Cilliers established the £6 million Rio Tinto Centre for Advanced Mineral Recovery at Imperial to develop innovative mining technologies and techniques for improving the way minerals are extracted. (See *Elections to national academies*, opposite.)



RECTOR'S AWARDS FOR EXCELLENCE

Staff showing exceptional dedication to developing, advancing and supporting students at Imperial were recognised in June 2010 with Rector's Awards for Excellence. Twenty-one academics received awards for excellence in teaching, pastoral care, and research supervision, after being nominated by their colleagues with the support of students. A further seven received medals in recognition of their exceptional work.

See full details of all recipients at: <http://bit.ly/b30sq1>

DEPUTY RECTORS

Professor Sir Peter Knight, previously Senior Principal, was appointed Deputy Rector (Research) from November 2009 to October 2010 when he retired. Sir Peter joined Imperial in 1979 and he became a professor in 1988. From 2001–05 he was Head of the Department of Physics and from 2005–08, Principal of the Faculty of Natural Sciences.

Professor Stephen Richardson, Principal of the Faculty of Engineering, was appointed Deputy Rector in November 2009 and combines the two roles. A leading engineer with over 30 years' experience of university education, research and leadership, Professor Richardson was both an undergraduate and postgraduate at Imperial, returning to the College for 1978 as a member of staff.

NEW DIRECTOR FOR COLLEGE INSTITUTE

Professor Chris Hankin was appointed Director of Imperial's Institute for Security Science and Technology in January 2010. Professor Hankin has worked in the Department of Computing since 1984 and has also held posts as Dean of the City and Guilds College (2000–03), Pro Rector for Research (2004–06) and Deputy Principal of the Faculty of Engineering (2006–08). His research is focused on understanding the dynamic behaviour of computer programmes, which has become especially applicable to security science in the past 10 years.

ELECTIONS TO NATIONAL ACADEMIES 2010

US National Academy of Sciences

Professors Sir Marc Feldmann and Sir Ravinder Maini (both Kennedy Institute of Rheumatology) received the rare honour of being elected foreign associates of the US National Academy of Sciences in recognition of their distinguished and continuing achievements.

To read more about these honours visit: <http://bit.ly/cA2EFG>

Royal Society

Professors Peter Cawley (Mechanical Engineering), Russell Cowburn (Physics) and Elizabeth Simpson (Medicine) were elected Fellows of the Royal Society, the UK's national academy of science, along with Visiting Professor, John William Connor (Physics).

To read a full report visit: <http://bit.ly/cA2EFG>

Royal Academy of Engineering

Imperial celebrated elections to the Royal Academy for Professor Jan Cilliers, (Earth Science and Engineering) Professor Stephen Muggleton (Computing), Professor Constantinos Pantelides (Chemical Engineering and Chemical Technology), Professor Alexander Taylor, (Mechanical Engineering) and Professor Guang-Zhong Yang (Biomedical Engineering and Computing). In addition, Mike Cook, Adjunct Professor in Creative Design (Civil and Environmental Engineering), was also recognised by the Royal Academy.

To read a full report visit: <http://bit.ly/9CQFb9>

Academy of Medical Sciences

Professors Eric Aboagye and Jeremy Nicholson (both Surgery and Cancer) and Professor Richard Wise (Medicine) were elected Fellows of the Academy of Medical Sciences. Academy Fellows are elected for outstanding contributions to the advancement of medical science, for innovative application of scientific knowledge or for conspicuous service to healthcare.

For a full report visit: <http://bit.ly/cA2EFG>

RESEARCH EXCELLENCE AWARDS

In October 2009, Research Excellence Awards were presented to research teams demonstrating high academic achievement and significant future potential. The teams that each received £150,000 for blue-skies research were: Molecular Systems Engineering led by Professor George Jackson (Chemical Engineering and Chemical Technology); Complement Regulation in Health and Disease led by Professor Marina Botto, Professor H. Terence Cook and Dr Matthew C. Pickering (Medicine); and Nanoscale Science and Technology led by Professor Russell Cowburn (Physics).

See further details in *Reporter 211* at: <http://bit.ly/bljJWl>

ACADEMIC PROMOTIONS

One hundred academics were promoted with effect from 1 October 2009 and now hold a new title of senior lecturer, senior research fellow, reader or professor. The announcement includes 27 new professors.

To watch videos with three of the new professors and one senior lecturer visit: <http://bit.ly/cB6A14>

Prestigious physics prize for Imperial researcher

Professor Stefan Maier (Physics), was awarded the Raymond and Beverly Sackler Prize in the Physical Sciences by Tel Aviv University in May 2010. The US\$50,000 prize is shared with Professor Mark L. Brongersma of Stanford University. Professor Maier investigates how nanoscale metal structures react with light to produce tight light beams, a technology which could help scientists to develop new kinds of microchips that work without electricity, and cheaper, more efficient solar cells.



Awards and honours

AWARD-WINNING HEART IMAGES

Researchers from Imperial's British Heart Foundation Centre of Research Excellence won the movie category of the Reflections of Research competition, for their film *Blood Streams of the Heart*, and were runners up in the contest's image category with *Growing New Heart Muscle Cells*. The winning movie, created by Imperial's Dr Philip Kilner and Dr Michael Markl from the University of Freiburg, shows blood streaming through both sides of a healthy human heart. In the future, doctors may be able to use this and other types of imaging, to help simulate the movements and flow of a patient's heart.

Watch the video at: <http://bit.ly/aTpNT6>

ROYAL MEDAL FOR RENOWNED PHYSICIST

Professor Sir Peter Knight, Deputy Rector (Research), a member of the College's research community for over 30 years, was awarded the Royal Society's prestigious Royal Medal at a ceremony in June 2010. Only three such medals are awarded each year in recognition of the most important contributions to natural knowledge and to interdisciplinary or applied sciences. Previous winners have included Imperial's Professor Sir John Pendry (Physics), who was awarded the RM in 2006.

NHS INNOVATOR OF THE YEAR

In November 2009, Professor Stephen Smith, Principal of the Faculty of Medicine and Chief Executive of Imperial College Healthcare NHS Trust, was named Innovator of the Year in the NHS Leadership Awards. The award was made in recognition of his role pioneering the AHSC, the unique partnership between Imperial College London and Imperial College Healthcare NHS Trust formed in October 2007.

Watch videos about the AHSC approach in action at: <http://bit.ly/debWth>

SCHERING PRIZE FOR OUTSTANDING RESEARCHERS

Emeritus Professor Sir Ravinder Maini and Professor Sir Marc Feldmann (Kennedy Institute of Rheumatology), whose work led to a groundbreaking new treatment for arthritis and other autoimmune diseases were jointly awarded one of Germany's most prestigious science prizes in March 2010. They won the €50,000 Ernst Schering Prize, given for particularly outstanding basic research in the fields of medicine, biology or chemistry.

Find out more about the prizewinners and their research at: <http://bit.ly/dvy2VR>

SWEDISH ACADEMY OF SCIENCES HONOUR

Professor So Iwata (Life Sciences) received the Aminoff Prize with an SEK100,000 award in March 2010. The prize has been awarded annually since 1979 for work in the scientific field of crystallography, which is integral to Professor Iwata's research. In his laboratory at the Diamond Light Source, the UK's national synchrotron facility, Professor Iwata grows large crystalline versions of proteins found in the membranes of human and other cells. These proteins have various functions including acting as 'gatekeepers', controlling which substances and signals enter and leave a cell.

INNOVATION WINS TOP AWARD

Scientists from the Institute of Biomedical Engineering received the Outstanding Contribution to Innovation and Technology Award at the 2009 *THE (Times Higher Education) Awards* in October 2009. The researchers were recognised for pioneering work leading to new developments in medical diagnosis equipment, personalised healthcare devices, new regenerative medicine techniques and new medical imaging technologies.

SAKURAI PRIZE FOR EMERITUS PROFESSOR

Emeritus Professor Tom Kibble was jointly awarded the 2010 J.J. Sakurai Prize for Theoretical Particle Physics, one of the most prestigious international prizes in the field, by the American Physical Society. The prize has been given to six researchers, including Edinburgh's Peter Higgs, for three research papers published in the 1960s that led to the theory explaining how certain particles acquire mass, now known as the 'Higgs Mechanism'.

MATHEMATICIAN INCREASES COLLECTION

Professor Simon Donaldson (Mathematics) added to his set of prestigious international awards in December 2009 with the Shaw Prize for Mathematical Sciences. Professor Donaldson, who has also won the Fields Medal, often referred to as the 'Nobel Prize of mathematics', in 1986. He shares the Shaw Prize with Professor Clifford H. Taubes from Harvard.

Find out more at: <http://bit.ly/crAILh>

NEW YEAR HONOURS

Three leading figures at Imperial were recognised in the New Year's Honours 2010. Professor Donal Bradley, Deputy Principal of the Faculty of Natural Sciences, Director of the Centre for Plastic Electronics and Lee-Lucas Professor of Experimental Physics, was awarded a CBE and Melanie Thody, Director of Outreach, received an MBE for services to science communication. Also honoured was visiting academic, Professor Sue Ion, who received a DBE for services to science and engineering.

See full details at: <http://bit.ly/ckeQLT>

QUEEN'S BIRTHDAY HONOURS

Seven members of staff, including three from the Business School, were recognised in the 2010 Birthday Honours. Knighthoods went to Professor Sir Marc Feldmann (Kennedy Institute of Rheumatology), an expert on autoimmune diseases, and Professor Sir John Beddington (Biology), chief scientific advisor to the UK government. In the Business School, Professors David Gann and Carol Propper were awarded CBEs, while Professor Dot Griffiths, Deputy Principal of the School, was appointed an OBE. Elsewhere in the College, Dr Maha Barakat, co-founder of the Imperial College London Diabetes Centre in Abu Dhabi received an OBE, while Mr Arthur Spirling, Director of ICT, an MBE.

Read more at: <http://bit.ly/drflxLx>

IMPERIAL ENTREPRENEURS WIN MAJOR EUROPEAN AWARDS

Professor Molly Stevens (Materials) and Dr Nikolaos Vlasopoulos (Civil and Environmental Engineering) were recognised by the Academic Enterprise Awards, given by the Science Business Innovation Board, in December 2009. Both researchers have established start-up enterprises financed by Imperial Innovations, the College's technology commercialisation and investment company.

Watch videos about their research at: <http://bit.ly/9s4ord>

New insights into cell division

Dr Vahid Shahrezaei (Mathematics), one of the authors of a study published in April 2010 in *Nature*, says new insights into how yeast cells decide to mate could be helpful for researchers looking at how cancer cells and stem cells develop. Yeasts are single-celled microbes which are often used as model organisms, to help understand how cells work. They usually reproduce asexually, by a process called budding. However, sometimes yeast cells reproduce sexually by mating. The researchers used a highly complex mathematical model to determine what switches the mating process on and off, factoring in experimental data about the concentration of pheromones around the cell, the concentrations of different proteins relevant to mating inside the cell and how strongly these proteins bind together. They believe their mathematical model could be used to investigate the triggers that cause changes in other cells, such as normal cells becoming cancerous.



Engineering

ASTEROID KILLED OFF THE DINOSAURS

The Cretaceous-Tertiary mass extinction, which wiped out the dinosaurs and more than half of species on Earth, was caused by an asteroid colliding with Earth and not by massive volcanic activity, according to a comprehensive review of all the available evidence, published in March 2010 in the journal *Science*. The review, by panel of 41 international experts, including researchers from Department of Earth Science and Engineering, shows that the extinction was caused by a massive asteroid slamming into the Earth at Chicxulub in Mexico. The asteroid, around 15 kilometres wide, is believed to have hit the Earth with a force one billion times more powerful than the Hiroshima atomic bomb. It would have blasted material into the atmosphere at high velocity, triggering a chain of events that caused a global winter, wiping out much of the life on Earth in a matter of days.

NEW ROLLS-ROYCE AND IMPERIAL CENTRE

Imperial and Rolls-Royce, the global power systems company, opened the Rolls-Royce Nuclear University Technology Centre (UTC) in May 2010. A new hub for excellence in nuclear science and engineering research and training, the UTC will develop the next generation of nuclear scientists and engineers, with the aim of helping to secure the UK's long-term energy needs.

NEW IMAGING TECHNIQUE COULD HELP FIGHT AGAINST ATHEROSCLEROSIS

A new chemical imaging technique being investigated by scientists led by Professor Sergei Kazarian (Chemical Engineering and Chemical Technology) could, with further refinement, become a useful tool for doctors, suggests research published in the *Journal of the Royal Society Interface* in August 2009. The new method, known as attenuated total reflection Fourier transform infrared spectroscopic imaging, could potentially improve current techniques, by combining imaging and chemical analysis, helping doctors determine which patients most need treatment to prevent strokes and heart attacks.

CARS OF THE FUTURE COULD BE POWERED BY THEIR BODYWORK

Parts of a car's bodywork could one day double as its battery, according to the scientists behind a €3.4 million project announced in February 2010. Researchers from the Department of Aeronautics are working with Volvo Car Corporation and other partners to develop a prototype material that can store and discharge electrical energy, and is also strong and lightweight enough for car parts. Ultimately, they expect that this material could be used in hybrid petrol/electric vehicles to make them lighter and more energy efficient.

HELPING PEOPLE WITH DISABILITIES WITH GAMING

Imperial undergraduates have developed a computer game operated by eye movements, which could allow people with severe physical disabilities to become 'gamers'. The students, from the Departments of Bioengineering and Computing, have adapted an open source game called 'Pong', where a player moves a bat to hit a ball as it bounces around the screen. Their adaptation enables the player to move the bat with their eye, by wearing special glasses that contain an infrared light and a webcam to record the eye's movements.

Natural Sciences

SHOWING GALAXY IN NEW LIGHT

Pictures released by the European Space Agency in October 2009 show spectacular new images of interstellar material in our galaxy, using the UK-led SPIRE camera in tandem with the Herschel Space Observatory's other camera, PACS. Physicists from Imperial played a key role in conceiving, designing and developing SPIRE over the last 20 years and have, more recently, been instrumental in developing the software to convert the masses of raw data from space into these images. The cameras provide detailed images in five different far infrared colours, not only revealing new material in the galaxy, but providing astronomers with a wealth of information about it – such as how much material there is, its mass, temperature and composition, and whether or not some of it is collapsing to form new stars.

POTENTIAL WAY TO PREVENT MALARIA

Stopping male mosquitoes from sealing their sperm inside females with a 'mating plug' could prevent mosquitoes from reproducing, and offer a potential new way to combat malaria, according to research led by Dr Flaminia Catteruccia (Life Sciences). The study involved the species of mosquito primarily responsible for the transmission of malaria in Africa, *Anopheles gambiae*. When these mosquitoes mate, the male transfers sperm to the female and then seals it in with a coagulated mass of proteins and seminal fluids known as a mating plug. Scientists showed it was possible to prevent the formation of this plug in males, and that this stopped them successfully reproducing.

NEW WAYS TO TACKLE C. DIFF

In March 2010, Imperial scientists revealed different approaches to tackling the problem of *Clostridium difficile*, the 'superbug' that can cause severe gut infections in hospital patients and the elderly. Dr Ed Tate (Chemistry) is working on a chemical that could potentially be developed into a drug to make the bacterium more vulnerable to antibiotics. Meanwhile, Professor Neil Fairweather, Dr Kate Brown and Dr David Albesa-Jové (Life Sciences) are focusing on understanding the 3D structure of the toxin, with the aim of designing future vaccines.

Learn more about their work at:
<http://bit.ly/8XBjAs>

COMPETITION ENCOURAGES STUDENT ENTREPRENEURSHIP

Imperial PhD students competed for £20,000 business development money in a *Dragons' Den*-style competition in July 2010. Digitally compered by the BBC's Evan Davis, *DTC (Doctoral Training Centre) Den* saw three teams from the Chemical Biology Centre, and one from a research consortium based in Scotland, pitch their ideas to a panel of experts, including the CEOs of three research councils. Imperial team 'Anywhere HPLC' claimed victory with its proposal for a handheld, disposable device that connects to a smartphone, allowing researchers to analyse mixtures, such as groundwater or blood, anywhere with instant results. The finalists received guidance in entrepreneurship from the Business School and intellectual property patenting advice from Imperial Innovations, the College's technology commercialisation company. Imperial Innovations also provided the prize money.

Medicine

STUDY SHOWS VIRUSES CAN SPREAD FASTER THAN REALISED

Imperial research has challenged what researchers long believed about how viruses spread. Previously, viruses were thought to spread by entering a cell, replicating there, and then being released to infect new cells, so that the rate of spread would be limited by how quickly it could replicate in each cell. However, using live video microscopy, scientists, led by Professor Geoffrey L. Smith (Medicine), discovered that a virus called vaccinia was spreading four times more quickly than thought possible, based on the rate at which it replicates.

Watch videos of virus-infected cells at: <http://bit.ly/9acNbj>

SCREENING TEST COULD SAVE THOUSANDS FROM BOWEL CANCER

A five-minute screening test could cut the risk of developing bowel cancer by a third and save thousands of lives, according to Imperial research published in April 2010. Bowel cancer accounts for 600,000 deaths across the world each year. In a 16-year study led by Professor Wendy Atkin (Surgery and Cancer), researchers found that a single flexible sigmoidoscopy examination in people aged between 55 and 64 reduced the incidence of bowel cancer by a third. The examination halved incidence of the disease in the lower bowel.

SENDING SCIENCE DOWN THE PHONE

New mobile phone software to help epidemiologists and ecologists working in the field to analyse their data remotely and to map findings across the world, without having to return to the lab, was revealed in research published in September 2009. The software will eventually also enable members of the public to act as 'citizen scientists' to collect data for community projects. The researchers, led by Dr David Aanensen (Infectious Disease Epidemiology), are currently using the software, known as EpiCollect, as a tool in their studies of the epidemiology of bacterial and fungal infectious diseases. Their data is sent to a central internet-based database, which records the user's location using the phone's GPS system, and can display all the data collected on that topic across the world via Google Maps. Users can also use their smartphones to request and view all the maps and analyses available.

NEW CLINICAL TRIALS UNIT

The College launched a new unit dedicated to setting up and running clinical trials in February 2010. Clinical trials are carried out to determine whether new drugs and therapies are safe and effective for use in people. Professors Deborah Ashby and Neil Poulter, the co-directors of the Imperial Clinical Trials Unit (ICTU), hope it will build on existing trials being carried out at the College to create a centre of excellence for clinical trials of treatments for conditions including cardiovascular disease, cancer and mental health problems.

For more information visit: www.imperial.ac.uk/clinicaltrialsunit

MAJOR NEW STUDY ON HEALTH IMPACTS OF MOBILE PHONES

A new decades-long study was launched in April 2010 to investigate whether there is a link between the use of mobile phones and long-term health problems, such as cancer. The international Cohort Study on Mobile Communications (COSMOS) will run for 20-30 years and will follow the health of at least 250,000 participants aged 18-69 in five European countries. The UK arm of COSMOS is being led by a research team from Imperial. There are currently over six billion mobile phone devices in use worldwide, with over 70 million in use in the UK, which has a population of 61 million people.

IMPERIAL HIGHEST RATED FOR RESEARCH INTO COMMON LUNG DISEASES

Research into serious lung diseases at Imperial was rated the most highly cited in the world by *Thomson Reuters* in February 2010. The organisation looked at academic research into chronic obstructive pulmonary disease (COPD) published by nearly 10,000 institutions across 113 countries. COPD is a group of progressive inflammatory conditions, such as emphysema and chronic obstructive bronchitis, which affect around one in 10 adults over the age of 40 in the UK. The results, published on the *ScienceWatch* website, show that Imperial achieved more citations for COPD than any other institution. In addition, Professor Peter Barnes, the Head of Airway Disease at Imperial's National Heart and Lung Institute, achieved more citations for his work on COPD than any other researcher in the world.

Watch Professor Barnes talking about COPD and how Imperial researchers are tackling the disease at: <http://bit.ly/djytas>



The EpiCollect software developed by Dr David Aanensen and his team (see *Sending science down the phone* above) runs on smartphones. Researchers and members of the public can use it to log animals and plants, and their locations, all around the world.

Business School

UNIVERSITY RESEARCH CONTRIBUTES £45 BILLION A YEAR TO THE UK ECONOMY

Research from the Business School has demonstrated the value of public spending on research in higher education. An economic impact assessment of university research presented at a British Academy/Economic and Social Research Council innovation seminar in March 2010 suggested that the £3.5 billion a year currently spent on publicly funded research generates an additional annual output of £45 billion in UK companies. The data also suggest that benefits of research spending in higher education are greater than those from other areas of government-supported research and development. Co-author of the study, economist Professor Jonathan Haskel, said that was important to be able to put a figure on how public investment in university research correlates with private sector productivity.

BUSINESS SCHOOL RATED 32ND IN THE WORLD

Imperial's Business School has climbed seven places to 32nd in the world in the *Financial Times* global MBA rankings, published in January 2010. The ranking, compiled using measures such as graduate employment, salaries and alumni recommendations, also rates the School third in the world for entrepreneurship, sixth for economics and seventh for marketing, making it one of only two institutions in Europe to hold three top 10 places for specialisations. This achievement crowns a continual rise up the rankings for the Business School since it entered the top 90 in 2002.

INFORMING POLICY AND PRACTICE FOR HEALTHCARE DELIVERY

The Business School's Healthcare Management Group is taking a multidisciplinary approach to the development of new knowledge about key issues in healthcare delivery, with the aim of informing policy and practice. The group, which includes economists, doctors, operations researchers and social psychologists, works closely with collaborators within and beyond the College. The group engages with the users of its research findings, including policy makers, clinicians, managers and administrators, and the industrial supply chain, to gain a better understanding of the process between research and application. An example of this is the Health and Care Infrastructure Research and Innovation Centre (HaCIRIC), a collaboration directed by the group. With a resource of more than £10 million, of which £7.2 million is provided by EPSRC, HaCIRIC aims to deliver research findings that will improve the management, delivery and interaction between healthcare technologies, services and infrastructure.



Professor Nilay Shah (Chemical Engineering and Chemical Technology, pictured centre) is co-director of the BP Urban Energy Systems project, part of the Energy Futures Lab (EFL). Here he is discussing urban energy use with colleagues on the roof of one of the buildings at the South Kensington Campus.

Multidisciplinary

NEW STATUS AND PREMISES FOR ENERGY FUTURES LAB

Scientists developing new sustainable sources of energy and future energy technologies celebrated the opening of their new headquarters in November 2009. The Energy Futures Lab (EFL), the College's hub for energy research, is one of the College's multidisciplinary research institutes, dedicated to tackling global challenges. The EFL's new headquarters at Imperial's South Kensington Campus, include a display area to showcase the latest research and technological developments, plus new offices and meeting rooms. The EFL brings together around 600 Imperial researchers, who are working on some of the world's major energy challenges.

ESTIMATES OF CO₂ SAVINGS

Switching off lights, turning the television off at the mains and using cooler washing cycles could have a much bigger impact on reducing carbon dioxide emissions from power stations than previously thought, according to research led by Dr Adam Hawkes (Grantham Institute for Climate Change) published in June 2010. The study showed that the figure used by UK government advisors to estimate the amount of carbon dioxide saved by reducing people's electricity consumption is up to 60 per cent too low. It suggests that excluding power stations with low carbon emission rates, such as wind and nuclear power stations, and focusing on those that deal with fluctuating demand would give a more accurate emission figure.

CENTRE FOR SYNTHETIC BIOLOGY AND INNOVATION

January 2009 saw the launch of the Centre for Synthetic Biology and Innovation (CSynBI) at Imperial, the result of an £8 million EPSRC science and innovation award. Based in the Faculty of Engineering, but also drawing on expertise from the Faculty of Natural Sciences, CSynBI brings together expertise in engineering, bioengineering, life sciences and the social sciences. It also includes a partnership with LSE covering ethics and social science.

The Centre's aim is to establish a robust framework for the design, optimisation and production of novel synthetic biology parts, devices and systems. The approach involves a deeper understanding of related ethical, legal and societal issues, including public engagement and trust, policy and regulation.

DEVELOPING INTERNATIONAL COLLABORATION

Building on its longstanding relationship with Shell, and in collaboration with Qatar Petroleum and Qatar Science and Technology Park, the Energy Futures Lab at Imperial has formed the Qatar Carbonates and Carbon Storage Research Centre. Through this 10-year, US\$70 million research international collaboration, the College is helping to develop fundamental and applied strategies for enhanced natural gas production and carbon dioxide abatement in complex carbonate reserves.

LIFELONG HEALTH PROJECT

The increase in the number of the elderly around the world has repercussions for almost every aspect of day-to-day life. Although increased life expectancy symbolises a scientific success story, it has brought with it fresh challenges and the need for research. Imperial's Lifelong Health Project, established in 2010, addresses this through a programme of research that brings together over 100 world class researchers from across all the College's faculties and the Business School. Helping to catalyse cutting edge, high-impact work and allowing diverse contributions, the programme covers a range of areas from pensions to tissue engineering, through to neurodegenerative diseases, biosensors and personal mobility.

Read more at: <http://bit.ly/bHbVQb>

Partnership with industry benefits undergraduates

Through a partnership with Agilent, a research instrument manufacturer, the Department of Chemistry has obtained access to complex and expensive equipment, and exposure to industrial practices for its undergraduate students. In exchange for use of Chemistry's clean laboratory environments and specialised infrastructure, the company houses an atomic force microscope in the Department as part of a demonstration site. The equipment is used by Imperial lecturers to teach undergraduate students valuable hands-on research and instrument-testing skills.



Education

TROPICAL TRIP TO THE RAINFOREST

Twenty third year biology and ecology students and three academic staff flew out to the Kibale National Park in western Uganda for two weeks in September 2009, for the College's first tropical biology field course. Staying at a Makerere University field station deep in the rainforest, the students got to experience the life of a tropical biologist first-hand. Often rising before dawn, they got involved with hands-on activities, such as mist-netting and ringing tropical birds, identifying plants and insects, and trapping palm-sized moths by moonlight.

PHD PROGRAMMES WITH NTU

Since January 2010, Imperial has delivered PhD programmes in partnership with Nanyang Technological University, Singapore, with completing PhD students being awarded a PhD degree under the seal of both the College and NTU. During the four-year programme, participants spend two years at each institution being exposed to the research environments of two research-intensive universities, which allows them to benefit from a combination of research resources, including supervisory talent and facilities. Initially based in bioengineering and chemical and biomolecular engineering, the intention is to extend the scheme across the engineering and science disciplines.

LONDON'S FIRST CARBON CAPTURE PILOT PLANT

Work began in June 2010 on London's first carbon capture pilot plant, as part of an £8.9 million redevelopment project at the College. Carbon capture and storage (CCS) technology could be used in the future to reduce the UK's greenhouse emissions, by fitting coal and gas fired power plants with technology to capture CO₂ before it is emitted into the atmosphere. It works by filtering harmful emissions through chemical solutions called amines, which capture the CO₂ so that it can be transported and stored deep underground in depleted oil and gas reservoirs. When the plant is completed, undergraduates in the Department of Chemical Engineering and Chemical Technology will have the chance to gain valuable hands-on experience of its operation.

SUMMER SCHOOL VISITORS

A summer break spent building robots and making chemicals glow in the dark helped boost the opportunities and aspirations of pupils at state schools, at Imperial's programme of summer schools during July and August 2009. The College hosted over 4,000 pupils aged between 11–17 for both residential and non-residential courses lasting from one day to two weeks. They took part in activities that allowed them to try their hands at practical science and engineering projects in well-equipped, cutting edge laboratories. At the same time they got a taste of life on a university campus, helping to make higher education feel more attainable, especially for those who have no family history of it.

EDUCATION DAY

Nearly 300 people involved in education and student support at Imperial took time out to explore the most innovative and effective approaches to teaching in April 2010 for the College's second Education Day. The day gave staff across the College the chance to come together for a series of sessions, workshops and exhibitions on what Imperial is currently doing to ensure it provides a world class education, as well as demonstrating future opportunities for further enhancing students' educational experience. The day was divided into two main themes. In the first, speakers tackled subjects including how students can make the jump from school curricula to learning at university level and engaging industrial partners to provide hands-on experience for students during their studies. Other sessions included sharing experience of giving undergraduates the opportunity to be teaching assistants and introducing ethics teaching in engineering.

PARTNERSHIP OFFERS TRAINING TO INDUSTRIAL CHEMISTS

Imperial has teamed up with pharmaceutical company GlaxoSmithKline (GSK) to provide a new qualification for activities in the workplace. The partnership gives GSK's chemists the opportunity to work for a Certificate of Advanced Study in Industrial Pharmaceutical Chemistry, awarded by the College, as part of their job. Participants are registered as part-time Imperial students in the Department of Chemistry. The first GSK participants began working towards the certificate in January 2010 and are expected to take between one and four years to complete it, depending on other work commitments. The initial cohort are chemists working in global manufacturing, whose work is focused on the large-scale synthesis of compounds and drugs.

INNOVATION AWARD FOR SUSTAINABLE ENERGY FUTURES MSC

Imperial MSc course that focuses on sustainable energy was recognised for its impact and innovativeness at the Institution of Chemical Engineers' (IChemE) Awards for Innovation and Excellence in November 2009. The course won in the education and training category, with the judges' chief criteria including originality and impact on the environment. The MSc is run by the Energy Futures Lab at the College, an Imperial Institute and hub for interdisciplinary energy research. The course focuses on the analysis of energy systems and the development of energy solutions.

Academic Health Science Centre developments

A new phase in the development of the Academic Health Science Centre (AHSC) began in June 2010. The AHSC is a unique kind of partnership between Imperial College London and Imperial College Healthcare NHS Trust that aims to improve the quality of life of patients and populations, by taking new discoveries and translating them into new therapies, as quickly as possible.

Health systems will increasingly need to find more effective and economical ways of treating the ageing population. The College, with its partners, will address significant research and innovation challenges around, for example, improving mobility, countering the effects of ageing, devising stem cell therapies, and improving diagnostic and interventional techniques.

The next step for the partnership is the development of an alliance between the partners in the AHSC and the Royal Brompton and Harefield NHS Foundation Trust, a collaboration that forms part of a new Imperial College Academic Health Science System or AHSS. This is a system of associates from the tertiary and primary healthcare sectors, that aims to explore new patterns of care and achieve greater advances in healthcare delivery and outcomes, by undertaking joint research studies and exploring clinician-led integration of services into joint working units and programmes.

Find out more about the AHSS at: <http://bit.ly/bWVK02>

Watch our short films that illustrate the AHSC in action at <http://bit.ly/hfYQga>



Translation

UNDERSTANDING INNOVATION

Understanding how innovation happens, the management of technological and organisational change, and the socio-economic consequences of innovation is central to how the College is translating its own work, and helping others to do so. The Business School's Innovation and Entrepreneurship Group focuses on bringing together the latest thinking and practice in this field, working closely with government and industry to provide advice on the development of policy and strategy. Its academic research, worldwide collaborations with institutions and partnerships with business, provide a unique insight into how organisations can deliver greater impact from innovation and translation. For example, research conducted for HM Treasury and other bodies, such as the OECD, has improved the understanding of the relationship between investment in science, innovation and economic growth.

See more about the group's work at www.imperial.ac.uk/business-school/research/innovationandentrepreneurship

HUGE INVESTMENT TO COMBAT CLIMATE CHANGE

A several hundred million euro initiative to combat climate change and its effects, on a previously unseen scale, was announced in December 2009. It brings together world-leading universities including Imperial and major companies and regions across Europe. The creation of the Climate Knowledge and Innovation Community (KIC) signaled Europe's commitment to tackling climate change and to making a step change in its ability to innovate. The initiative is one of three KICs to be established and be part-funded by the European Institute of Innovation and Technology (EIT). The Climate KIC aims to create new technologies and new businesses that will dramatically reduce Europe's carbon emissions, for example, by improving how cities are designed and operate, and enabling individual regions to increase their resilience to the predicted changes in temperature, rainfall and landscapes. Its innovations will also enable people to reduce their individual carbon footprints and live with the effects of climate change.

EUROPEAN BOOST FOR IT TECHNOLOGIES

Mobile air pollution monitors, sensors for collecting personal medical data and new approaches to cyber security are just some of the areas of research from Imperial that will feed into a new European consortium announced in December 2009. The consortium, known as the EIT ICT Labs, aims to provide Europe with an unprecedented proliferation of internet-based services and strengthen education, research and innovation for future information and communication requirements. The consortium is one of three Knowledge and Innovation Communities (KICs, see above) set up by the European Institute of Innovation and Technology to boost innovation in Europe and contribute to the goals of future EU strategy.

FIRST CLINICAL TRIALS FOR DIGITAL 'PLASTER'

A clinical trial run by Imperial researchers for a wireless digital 'plaster' that can monitor vital signs continuously and remotely began in November 2009 with patients and healthy volunteers at Imperial College Healthcare NHS Trust. Imperial spin-out company Toumaz Technology's Sensium™ digital 'plaster', or patch, is a disposable device that sticks to a patient's chest. It is designed to allow patients to have their health monitored continuously without being wired up to bulky, fixed monitoring machines, potentially freeing some patients from their hospital beds. The device is based on innovative technology created by Imperial engineers and contains a wireless, smart, ultra-low power sensor platform in a silicon chip, which can monitor a range of vital signs, such as body temperature, heart rate and respiration.

IMPERIAL INNOVATIONS SELLS RESPIVERT FOR £9.5 MILLION

In July 2010, Imperial Innovations Group sold its portfolio company Respivert to Centocor Ortho Biotech for £9.5 million, achieving a 4.7-times return on its three-year investment for Innovations. Respivert is a small molecule drug discovery company working towards the identification of new treatments for patients with chronic obstructive pulmonary disease, cystic fibrosis and severe asthma. Imperial Innovations received £8.1 million in cash, with a further £1.4 million to be released within 18 months. The company intends to use the proceeds for investment purposes.

NEW PARTNERSHIP WITH SAINSBURY'S TO HELP REDUCE ITS CARBON FOOTPRINT

In March 2010, Imperial and Sainsbury's announced a new partnership to work together for five years to inform the delivery of Sainsbury's plans for future stores. The partnership aims to research and deliver innovative and practical solutions to mitigate the future impacts of climate change and help Sainsbury's reduce its carbon footprint. The work involves Imperial researchers from the Faculty of Engineering and the Grantham Institute for Climate Change. Plans are underway for how Sainsbury's stores in the future might provide heat and recycled water to customers' homes, as well as help customers to manage their waste streams. Other initiatives include the use of smart grid technology to help reduce Sainsbury's energy demand, with the potential for eventually taking stores completely off-grid.

MENINGITIS B VACCINE LICENSED

In January 2010, Imperial Innovations Group entered into a licence agreement with Novartis Vaccines and Diagnostics, granting Novartis a worldwide, exclusive licence to the intellectual property (IP) for a novel vaccine candidate against meningitis B. Innovations received an up-front payment and is entitled to ongoing IP licence fees, success-based milestones and royalties on product sales. The new vaccine candidate is based on the work of Professor Christoph Tang's research group in the Centre for Molecular Microbiology and Infection at the College. The candidate is currently in the pre-clinical stage of development. Under the agreement, Novartis will fund a £1 million research and development programme over two years, aimed at its further validation in pre-clinical models.

Imperial tops London unis in sports rankings

The College won pole position among London universities and has climbed five places from 22nd to 17th in the British Universities and Colleges Sport (BUCS) championships' national rankings 2010. The championships see university clubs and individuals competing in a range of sports, from hockey to clay pigeon shooting. Imperial's new position marks a climb from 48th place 10 years ago.



Community news

SUSTAINABILITY CAMPAIGN

The first phase of Imperial's StepChange campaign was launched in April 2010, encouraging staff and students to share examples of wasteful energy use at the College and their ideas for making efficiencies. The overarching aim of the campaign is to help the College achieve its target of cutting carbon emissions by 20 per cent by 2014 from the 2008–09 baseline. Staff and students are being encouraged to understand that their collective small actions can help the College save energy. See *Carbon management programme*, page 25.

To find out more about what Imperial is doing about sustainability visit: www.imperial.ac.uk/sustainability

CEO OF THE YEAR

Imperial alumna Meher Pudumjee was named CEO of the Year by the *Business Standard*, India's leading business newspaper. Ms Pudumjee, chair of energy and environmental engineering company Thermax, was recognised for steadily increasing the firm's sales and profits, and achieving commercial success without compromising on corporate ethics. She took the top job in 2004, having joined the company in 1990 as a trainee engineer, after completing her postgraduate studies in chemical engineering at Imperial. Her progression through the company included a stint managing Thermax's UK subsidiary, before returning to India in 1996 to join the board of directors.

A CENTURY OF SUPPORTING SPORT

The importance of sport to life at Imperial was celebrated in November 2009 with a surprise ceremony for three members of staff, who between them have clocked up 100 years of service. Mick Reynolds, Grounds Manager (44-and-a-half years); Phil Ramsdale, Grounds Supervisor (26-and-a-half years) and Keith Cooper, Assistant Groundsman (nearly 29 years) received 'Harlington 100' tankards and champagne, while Mick Reynolds's wife, Anne, received flowers and a silver picture frame, having worked at Harlington part-time for 27 years as pavilion supervisor.

STUDENTS WIN IEEE COMPETITION

An Imperial student engineering project, which provides an electricity system to rural Rwandan communities, received top prize in the IEEE Presidents' Change the World competition in June 2010. Members of the e.quinox team collected a US\$10,000 award for their project, which focuses on making power accessible through a system where renewable energy, such as solar power, is used to charge portable batteries in a central kiosk. These batteries can then be hired out to local householders in areas without mains electricity, to provide power for a range of uses, such as lighting, radios and keeping medicines refrigerated. Fees from the hire of the batteries are channelled back into maintaining the kiosk and provide a salary to local people employed on the project.

DEPARTMENTS RECOGNISED FOR WOMEN-FRIENDLY WORK PRACTICES

The Departments of Chemistry, Chemical Engineering and Chemical Technology, Physics and the National Heart and Lung Institute all achieved Athena Silver SWAN status in September 2009, while Imperial as a whole was awarded a bronze award. SWAN (Scientific Women's Academic Network) awards are given in recognition of demonstrated commitment by an institution or department to recruit, retain and advance women academics. Winning the institutional silver award is the next goal at College level.

Find out more about the awards and the winning departments at <http://bit.ly/bSOIBU>

INNOVATION CHALLENGE TACKLES AGEING

At the end of 2009, undergraduates opting for the Design, Art and Creativity module of the Mechanical Engineering degree course were challenged to develop designs to assist the elderly with buying, preparing and eating food in a brief from the Disabled Living Foundation. They considered a range of food-related problems the elderly might face, ranging from finding and transporting shopping, to lifting heavy cooking implements. The competition was won by a team, which developed the 'Egg' cooking pot, designed to help elderly people in the kitchen. The pot is egg shaped, with a curved base to make it easier to tip and drain water, as well as an adjustable handle, making it easier to lift. Now in its third year, the Innovation Challenge aims to help students discover how their knowledge can be translated into practical applications.

CITY HALL PHOTO EXHIBITION

From improving safety in Formula One to understanding probability in poker, Imperial women in science demonstrated how their work is contributing to the world, in an exhibition at London's City Hall in Spring 2010. The month-long photo exhibition, *100 Women – 100 Visions*, showed women scientists, engineers and doctors highlighting different aspects of their work in a series of portraits taken by award-winning photographer Jackie King. The exhibition was organised by Imperial's Women in Science, Engineering and Technology (WSET) group.

To see the portraits visit: www.union.ic.ac.uk/scc/100women100visions

New accommodation for postgraduate students

New accommodation for postgraduate students being developed at Winstanley Road in Battersea. This artist's illustration shows the planned 450+ studio apartment complex, Griffon Studios, which will be available for postgraduates from September 2011. It provides an ideal base for all of Imperial's west London campuses.



Estate developments

NEW LONDON CAMPUS

The College announced in September 2009 that it had completed the £28 million freehold purchase of a seven-acre site previously owned by the BBC, situated in west London, to the north of the A40. The site is within easy walking distance of Imperial's Hammersmith Campus on Du Cane Road and will form a new campus for the College. Proposals for the site were shared with local residents during three days of public consultation in May 2010. Plans for the new campus (see artist's illustration, pictured right) include postgraduate accommodation and affordable housing schemes. Potential future developments on the site also include retail units, a community centre, GP surgery, incubator space, new commercial office blocks, and new academic and administrative accommodation.



HAMMERSMITH MARKS MILESTONE

The last year has seen major progress in the construction of Imperial's new translational medicine facility at the Hammersmith Campus. When completed, towards the end of 2011, the six-storey building will bring researchers and clinicians from the College and Imperial College Healthcare NHS Trust together under one roof. It will form a key part of the Academic Health Science Centre and has been specially designed to encourage the translation of research findings into benefits for patients, particularly in those with serious health conditions, such as heart and circulatory problems.

POSTGRADUATE ACCOMMODATION DEVELOPMENTS

Two new schemes will create 1,187 bedspaces for postgraduates, meeting the College's aim to provide accommodation for a quarter of postgraduate students. The College Fund has negotiated terms to participate in a development at Winstanley Road in Clapham. The proposal is to provide 587 beds. The Fund has also signed an agreement with a real estate fund to take forward the development of postgraduate accommodation on the former BBC site at White City (see *New London campus* above), which will provide 600 beds. The first phase in the development of the new campus will provide postgraduate accommodation, together with family accommodation for junior lecturers and young trainee doctors. The aim for the accommodation to be available to new postgraduate students joining the College for the academic year 2012–13.

SKEMPTON BUILDING REDEVELOPMENT

December 2009 celebrated the completion of the floor of a new 185-seat lecture theatre (now completed and pictured right) in the Skempton Building, which was marked with a 'topping out' ceremony, as an important achievement in the ongoing development of the South East Quadrant (SEQ) of the South Kensington Campus. The redevelopment has also added new teaching areas on level one of Skempton and flexible, shared teaching spaces, which benefits the whole of the Faculty of Engineering.



CARBON MANAGEMENT PROGRAMME

Imperial's Carbon Management Plan aims to reduce Imperial's carbon footprint from 84,026 tonnes of carbon dioxide (the 2008–09 baseline) to 67,221 tonnes by 2014–15. The plan, which was published during this year, offers details of how the savings, equating to an absolute reduction of 20 per cent in carbon emissions, will be achieved. In addition, the College's StepChange campaign, which aims to involve staff and students in helping Imperial achieve this target, was launched in April 2010, with a competition asking staff and students to submit examples of wasteful energy usage at Imperial and ideas for saving it (see *Sustainability campaign*, page 23).

The Carbon Management Plan can be downloaded from: <http://bit.ly/bFbj8x>

Imperial at a glance

3rd

Imperial's position in league tables in *The Independent* and *The Times Good University Guide*.

89%

Percentage of Imperial leavers in employment or study six months after graduation says Destinations of Leavers from Higher Education survey published in 2010.

26

1,187

Planned new bedspaces for postgraduates resulting from the College Fund's developments in London.

£3.6m

Raised from alumni donations.

£10m

The amount invested over five years to support Imperial's Junior Research Fellowship scheme.

£296.8m

Imperial's research income in 2009-10.



Department of Materials undergraduate student, Arjoon, setting up and monitoring a creep test.

Public benefit statement

Imperial College London is an exempt charity under the laws of England and Wales by virtue of the Exempt Charities Order 1962 and the Second Schedule to the Charities Act 1993. Its activities include the promotion of scholarship, education and research in science, engineering and medicine especially in their application to industry. In accordance with the Charities Act 2006 HEFCE is the responsible body for regulating universities as charities on behalf of the Charity Commission.

The objects

Imperial College London's objects are set out in its Royal Charter. They are to provide the highest specialised instruction and the most advanced training, education, research and scholarship in science, technology and medicine, especially in their application to industry; and in pursuit of these objects to act in cooperation with other bodies.

The College's mission is derived from these objects. The mission states that Imperial College London embodies and delivers world class scholarship, education and research in science, engineering, medicine and business, with particular regard to their application in industry, commerce and healthcare. We foster multidisciplinary working internally and collaborate widely externally.

In setting and reviewing the university's objectives and activities, the Council has had due regard to the Charity Commission's guidance on the reporting of public benefit and particularly to its supplementary public benefit guidance on the advancement of education and on fee charging.

Strategic aims

The College's aims are set out in the College Strategy 2010–14, which was approved by the Council in July 2010. They are:

- To undertake research of the highest international quality within an intellectually challenging and inspiring environment.
- To extend the frontiers of knowledge within and beyond existing research disciplines.
- To bring together research expertise within and beyond the College to address science challenges of today and the future.
- To identify, attract and develop students of the highest ability who are most able to benefit from an education at the College.
- To provide research-led teaching of the highest international quality within an intellectually challenging and inspiring environment.
- To offer an educational experience that empowers graduates to be leaders in their chosen careers and contribute to the long-term needs of society.
- To engage with the world to understand, identify and lead emerging scientific challenges and solutions.

- To maximise the social and economic value of our education and research through the transfer of both talent and technology.
- To find innovative ways to extend the reach and impact of all our work.
- To maintain excellence by being efficient, effective, adaptable and integrated.
- To build mutually beneficial relationships with appropriate organisations in the UK and worldwide.
- To achieve high standards of health, safety and environmental practice.
- To attract, develop, reward and retain a diverse community of staff of the highest calibre.
- To invest in our facilities and estate and be financially sustainable with diverse sources of income.
- To develop and increase our endowment assets.
- To transform information and data into insight and intelligence that guides our thinking.
- To anticipate, understand and shape the thinking of stakeholders and policy makers worldwide, including those in government, academia and industry.
- To be a world leading source of independent scientific advice.
- To help create a wide awareness in society of the benefits of world class research and education in science, engineering, medicine and business.

In implementing its strategic aims and objectives, the College is guided by the values set out in its Vision and Strategy and the Council is mindful of its responsibility to ensure that the College acts for the benefit of the public.

The report on Imperial's activities during the year, which forms a major part of this Annual Report and Accounts provides further information on our progress and achievements against these and other objectives.

Student admissions and equal opportunities

The College's mission is to maintain excellent standards of achievement in teaching and research in order to attract and admit students of the highest calibre, and its international reputation relies on the people who make up its diverse and high-achieving community. In pursuing this aim, Imperial adheres to a comprehensive policy of equal opportunities which ensures that it does not discriminate against any individual, from the first point of contact through to graduation. Selection for entry is based on consideration of academic ability, motivation for study, interest in the subject area and the potential to benefit from the experience and to contribute to College life.

Corporate governance

The following corporate governance statement is provided to enable the reader of the financial statements to obtain a better understanding of the governance and legal structure of the College.

Principles

The College is committed to exhibiting best practice in all aspects of corporate governance. It endeavours to conduct its business in accordance with the seven principles identified by the Committee on Standards in Public Life (selflessness, integrity, objectivity, accountability, openness, honesty and leadership), and with the guidance to universities from the Committee of University Chairmen in its Guide for Members of Higher Education Governing Bodies in the UK, the latest edition of which was published by the Higher Education Funding Council for England (HEFCE) in 2009.

Legal status

The College is an independent corporation whose legal status derives from a Royal Charter granted under Letters Patent in 1907. Its objects, powers and framework of governance are set out in its Charter and Statutes, which were granted by Her Majesty The Queen in 1998. On 4 April 2007 a Supplemental Charter and Statutes were granted by Her Majesty. This Supplemental Charter, which came into force on the date of the College's Centenary, 8 July 2007, established the College as a university with the name and style of 'The Imperial College of Science, Technology and Medicine'.

Governance

The Charter and Statutes require the College to have three separate bodies, each with clearly defined functions and responsibilities, to oversee and manage its activities as follows:

The Council is 'the governing and executive body of the College', and is responsible for the finance, property, investments and general business of the College, and for setting its general strategic direction. There are up to 23 members of the Council, the majority of whom are external members, including the Chairman and Deputy Chairman. Also included in its membership are representatives of the staff of the College and of the student body. None of the external members receive any payment, apart from the reimbursement of expenses, for the work they do for the College.

The Court is a large, mainly formal body. It offers a means whereby the wider interests served by the College can be associated with it, and provides a public forum where members of the Court can raise any matters about the College. The Court normally meets once a year to receive the College's Annual Report and audited financial statements. In addition, changes to the College's Charter require the approval of the Court before they can be submitted to the Privy Council. The Court consists of some 160 members most of whom are from outside the College and appointed by appropriate bodies representing educational, research, international, regional and local interests. Its membership also includes representatives of the College's staff and students.

The Senate is the academic authority of the College and draws its membership entirely from the academic staff and the students of the College. Its role is to direct and regulate the teaching work of the College.

The principal academic and administrative officer of the College is the Rector who has a general responsibility to the Council for maintaining and promoting the efficiency and good order of the College. Under the terms of the formal Financial Memorandum between the College and the Funding Council, the Rector is the Designated Officer of the College and in that capacity can be summoned to appear before the Public Accounts Committee of the House of Commons. The financial management of the College is prescribed in the Financial Ordinance

approved by the Council and conducted in accordance with the Financial Memorandum with the Funding Council.

As chief executive of the College, the Rector exercises considerable influence upon the development of institutional strategy, the identification and planning of new developments, and the shaping of the institutional ethos. He is supported and advised by a Management Board comprising the Rector, the Deputy Rector, the Principals of the Faculties and the Imperial College Business School, the Chief Operating Officer, the Pro Rectors for Education and Academic Affairs, International Affairs and Enterprise, the College Secretary and the Managing Director of the Imperial College Healthcare NHS Trust.

The Council is responsible for the College's system of internal control and for reviewing its effectiveness. Its approach is risk-based and includes an evaluation of the likelihood and impact of risks becoming a reality and also ensures that risk assessment and internal control procedures are embedded in the College's ongoing operations. The reviews included in the College's risk-based Strategic Audit Plan cover business, operational and compliance issues as well as financial risk. Such a system of internal control is designed to manage rather than eliminate the risk of failure to achieve business objectives and can only provide reasonable, and not absolute, assurance against material mis-statement or loss.

The Council's view is that there is an ongoing process for identifying, evaluating and managing the university's significant risks that has been in place for the year ended 31 July 2010 and up to the date of approval of the annual reports and accounts, that it is regularly reviewed by the Council and that it accords with the internal control guidance for directors in the Combined Code as deemed appropriate for higher education.

The Council meets at least four times a year and, following the completion of a review of governance in 2010, now has six committees; the Audit Committee, Risk Committee, the Remuneration Committee, the Nominations Committee, the Development Board and the College Fund Board. These are formally constituted as committees of the Council with written terms of reference and specified membership, including a significant proportion of external members. With the exception of the Development Board, which is chaired by the Rector, all are chaired by external members of the Council. The decisions of these committees are formally reported to the Council.

The Audit Committee meets three times a year with the College's internal and external auditors in attendance. It considers detailed reports together with recommendations for the improvement of the College's systems of internal control and management's responses and implementation plans. It also receives and considers reports from the Funding Council as they affect the College's business and monitors adherence to regulatory requirements. The Committee reports directly to the Council and has the authority to call for any information from the College officers, from internal and external auditors and from others whom it considers necessary to consult in order to discharge its responsibilities effectively. Whilst senior officers attend meetings of the Committee, they are not members of it. At least once a year the Committee meets separately with the internal and external auditors on their own for independent discussions. The Audit Committee also receives regular reports from Internal Audit and from the Management Board. Its role in this area is confined to a high level review of the arrangements for internal control, value for money, risk management and the arrangements for the management and quality assurance of data submitted to formal funding bodies at the College. The emphasis is on obtaining the relevant degree of assurance and not merely reporting by exception.

The Risk Committee is newly created and its primary objective is to consider the strategic risks facing the College and the actions proposed to mitigate these risks.

Corporate governance

(continued)

The Remuneration and Nominations Committee determines the remuneration of senior staff in the College including the Rector.

The Nominations Committee considers nominations for membership of the Court and Council and for the latter's committees.

The Development Board provides independent objective guidance on the College's fundraising activities. Board members are asked to be advocates and enthusiastic communicators of Imperial's mission and vision, and to play an integral role in our fundraising activities.

The College Fund Board manages those College assets that are not essential to the core academic mission of the College and that can therefore be managed with a pure investment focus. Its Terms of Reference include an obligation to maintain a diversified portfolio of investments, to have regard to the suitability of the investments within this portfolio and to manage the investments in a way that is appropriate to achieve the Investment Objective set by the Council. The Investment Objective necessitates growth in value of the non-core assets in line with inflation whilst also providing a regular distribution for the core academic mission of the College. Within these restrictions, the College Fund Board is authorised to make such investments as it sees fit.

The Management Board receives reports setting out key performance and risk indicators and considers possible control issues brought to its attention by early warning mechanisms which are embedded within the operational units.

In January 2010 the Council established a Governance Review Group to conduct a review of the College's governance arrangements. The group's recommendations took into account best practice at other leading universities, as well as the views of stakeholders and of those knowledgeable in governance matters. The review confirmed that the Council should remain a supervisory, not an executive, body at its current size and composition, but recommended that the delegation of authority from the Council to the Rector should explicitly include reference to the Management Board as the senior executive body advising the Rector. Other recommended changes included splitting the Remuneration and Nominations Committee into its constituent parts, reconstituting the Development Board as a Council Committee and forming a new Risk Committee to take responsibility for the oversight of how risks of all kinds are managed. It was also proposed that the Court be reformed to form a stakeholder forum for the College. These recommendations were accepted by the Council and will be implemented in 2010–11.

The College maintains a Register of Interests of members of the Council and of Senior Officers which may be consulted by arrangement with the Clerk to the Court and Council.

The College Secretary is the Clerk to the Court and Council. Any enquiries about the constitution and governance of the College should be addressed to him.

Responsibilities of the Council

The Council has adopted the Governance Code of Practice published by the Committee of University Chairmen, and accordingly has approved the following Statement of Primary Responsibilities:

1. To approve the mission and strategic objectives of the College, its long-term business plans and key performance indicators, and to ensure that these take account of the interests of the College's stakeholders.
2. To safeguard the good name and values of the College.
3. To appoint the Rector, the College's chief executive, and to put in place suitable arrangements for monitoring his/her performance.
4. To appoint other executive members of the Council as specified in the Statutes.
5. To delegate authority to the Rector, as chief executive, as advised by the Management Board for the academic, corporate, financial, estate and personnel management of the College.
6. To assess risk to the College and to position its management and mitigation.
7. To ensure the establishment of systems of control and accountability, including financial and operational controls, risk assessment, and procedures for managing conflicts of interest; and monitor the effectiveness of these systems.
8. To ensure that processes are in place for regular monitoring and evaluation of the performance and effectiveness of the College against its approved plans and key performance indicators.
9. To conduct its business in accordance with best practice in higher education corporate governance and with the principles of public life drawn up by the Committee on Standards in Public Life.
10. To be the principal financial and business authority of the College, to ensure that proper accounts are kept, to approve the annual budget and financial statements, and to have overall responsibility for the university's assets, property and estate.
11. To be the College's legal authority and, as such, to ensure that systems are in place to ensure that all its legal obligations, including those arising from contracts and other legal commitments made in its name, are properly met.
12. In accordance with the College's Charter and Statutes, to act as trustee for any property, legacy, endowment, bequest or gift in support of the work and welfare of the College.
13. To ensure that the College's Charter and Statutes are adhered to at all times, with appropriate advice available as necessary.
14. To approve the College's human resources strategy.
15. To establish processes to monitor and evaluate the performance and effectiveness of the Council itself.
16. To appoint a Clerk to the Council and ensure that accountability for his/ her performance in that capacity is properly separated from such managerial responsibilities as he/ she may have in the College.

In accordance with the College's Charter and Statutes, the Council is responsible for the efficient management and good conduct of all aspects of the affairs of the university (including its finances and property). It is required to present audited financial statements for each financial year. As such it is responsible for keeping proper accounting records which disclose with reasonable accuracy at any time the financial position of the College and enable it to ensure that the financial statements are prepared in accordance with the Charter of Incorporation, the Statement of Recommended Practice (SORP) on Accounting in Higher Education Institutions and other relevant accounting standards. In addition, and in accordance with the formal financial memorandum between the College and the Higher Education

Funding Council for England, the Council, through its Designated Officer, is required to prepare financial statements for each financial year which give a true and fair view of the state of affairs of the College and of the surplus or deficit and cash flows for that year.

In causing the financial statements to be prepared, the Council has ensured that:

- suitable accounting policies are selected and applied consistently;
- judgements and estimates are made that are reasonable and prudent;
- the SORP and applicable accounting standards have been followed, subject to any material departures being disclosed and explained in the financial statements;
- the College has adequate resources to continue in operation for the foreseeable future and for this reason the financial statements are prepared on a going concern basis.

The Council has taken reasonable steps to:

- ensure that funds from the Higher Education Funding Council for England are used only for the purposes for which they have been given and in accordance with the Financial Memorandum with the Funding Council and any other conditions which the Funding Council may from time to time prescribe;
- ensure that there are appropriate financial and management controls in place to safeguard public funds and funds from other sources;
- safeguard the assets of the College and prevent and detect fraud;
- secure the economical, efficient and effective management of the College's resources and expenditure.

The key elements of the College's system of internal control, which is designed to discharge the responsibilities set out above, include the following:

- clear definitions of the authority delegated to principals of faculties and heads of academic and administrative departments and divisions as set out in the College's approved Levels of Authority;
- approval by Council each year of a College budget and a three year rolling College plan which, whilst driven from the academic standpoint, are based on detailed financial projections of all College budget centres;
- a comprehensive monthly review of the financial performance of all budget centres and update of forecast outturns with a report to the Rector and senior College staff, to the Management Board and to Governors at each Council meeting;
- clearly defined and formalised requirements for approval and control of expenditure, with investment decisions involving capital or revenue expenditure being subject to formal detailed appraisal and review according to approval levels set by the Council;
- a comprehensive Financial Ordinance, detailing financial controls and procedures, approved by the Audit Committee and the Council;
- independent internal auditors, whose risk-based Strategic Audit Plan of work (based upon the College's Risk Register) is approved by, and conclusions subsequently reviewed by, the Audit Committee.

The Audit Committee, on behalf of the Council, regularly reviews the effectiveness of the internal controls in the College and its subsidiaries. Any system of internal control can, however, only provide reasonable, but not absolute, assurance against material mis-statement or loss.

Council and Council committees



Members of Imperial's Council at their away day in July 2010. From left to right, back row: Dr Ashley Brown (ICU President); Ms Rachel Lomax; Mr Jeremy Newsum; Professor Jeff Kramer (Senior Dean); Lord Kerr (Chairman); Professor Stephen Richardson (Deputy Rector, Academic Operations, and Principal, Faculty of Engineering); Ms Kate Owen; Professor Sir Peter Knight (Deputy Rector, Research); Lord Tugendhat; Mr Stewart Newton; Professor Stephen Smith (Principal, Faculty of Medicine, and Chief Executive, Imperial College Healthcare NHS Trust). Front row: Sir Peter Gershon; Dr Rodney Eastwood (Clerk); Ms Carolyn Griffiths; Professor Sir Keith O'Nions (Rector); Professor Maggie Dallman (Principal, Faculty of Natural Sciences); Dr Martin Knight (Chief Operating Officer).

The Council

Chairman:

- ▶ The Lord Kerr of Kinlochard

Co-opted External Members:

- ▶ Sir David Cooksey (until 31 January 2010)
- ▶ Mrs P. Couttie
- ▶ Sir Peter Gershon (until 30 September 2010)
- ▶ Ms C. Griffiths (until 30 September 2010)
- ▶ Ms R. Lomax
- ▶ Baroness Manningham-Buller
- ▶ Mr J.H.M. Newsum
- ▶ Mr S. Newton
- ▶ Ms K. Owen
- ▶ The Lord Tugendhat
- ▶ Baroness Wilcox (until 17 May 2010)

Ex-Officio:

- ▶ Rector: Sir Roy Anderson (until 31 December 2009)
- ▶ Rector: Sir Keith O'Nions (from 1 January 2010)
- ▶ Deputy Rector: Professor S. Richardson (from 9 November 2009)

Senior Staff Representatives:

- ▶ Professor D.K.H. Begg
- ▶ Professor M. Dallman
- ▶ Dr M.P. Knight
- ▶ Professor Sir Peter Knight (until 30 September 2010)
- ▶ Professor S.K. Smith

Elected Staff Member:

- ▶ Professor J. Kramer

President, Imperial College Union:

- ▶ Mr A. Brown (until 31 July 2010)
- ▶ Mr A. Kendall (from 1 August 2010)

Clerk to the Court and Council:

- ▶ Dr R.F. Eastwood

Audit Committee

Chairman:

- ▶ Mrs P. Couttie

Membership:

- ▶ Sir Peter Gershon (until 30 September 2010)
- ▶ Ms C. Griffiths (until 30 September 2010)
- ▶ Ms R. Lomax
- ▶ Mr J. Newsum (from 1 October 2010)
- ▶ Mr S. Newton (from 1 October 2010)
- ▶ Ms K. Kantor (co-opted)

Secretary:

- ▶ Mr J.B. Hancock

Remuneration and Nominations Committee

Chairman:

- ▶ The Lord Kerr of Kinlochard

Membership:

- ▶ Sir Peter Gershon (until 30 September 2010)
- ▶ Baroness Manningham-Buller
- ▶ Ms K. Owen (from 1 October 2010)
- ▶ The Lord Tugendhat (from 1 October)
- ▶ Baroness Wilcox (until 17 May 2010)

Secretaries:

- ▶ Mr C. Gosling (until 31 July 2010)
- ▶ Ms L. Lindsay (from 1 August 2010)

College Fund Board

Chairman:

- ▶ Mr S. Newton

Membership:

- ▶ The Hon. R. Rayne
- ▶ Sir Roy Anderson (until 31 December 2009)
- ▶ Sir Keith O'Nions (from 1 January 2010)
- ▶ Dr M.P. Knight
- ▶ Mr N. Moakes (from 12 February 2010)

Secretary:

- ▶ Mr J.B. Hancock



The College Fund Board. From top, left to right: Mr Stewart Newton, The Hon. Robert Rayne, Sir Roy Anderson, Sir Keith O'Nions, Dr Martin Knight, Mr Nick Moakes.

Financial year 2009–10



Independent auditors' report to the Council of Imperial College London

We have audited the Group financial statements of Imperial College London for the year ended 31 July 2010 which comprise the Consolidated Income and Expenditure Account, the Consolidated and College Balance Sheets, the Consolidated Cash Flow Statement, the Consolidated Statement of Total Recognised Gains and Losses and the related notes. These financial statements have been prepared under the accounting policies set out therein.

Respective responsibilities of the Council and auditors

The Council's responsibilities for preparing the financial statements in accordance with the accounts direction issued by the Higher Education Funding Council for England, the Statement of Recommended Practice: Accounting for Further and Higher Education (SORP), applicable law and United Kingdom Accounting Standards (United Kingdom Generally Accepted Accounting Practice) are set out in the Statement of the Council's Responsibilities.

Our responsibility is to audit the financial statements in accordance with relevant legal and regulatory requirements, and International Standards on Auditing (UK and Ireland). This report, including the opinion, has been prepared for and only for the Council of the College in accordance with the Charters and Statutes of the College and for no other purpose. We do not, in giving this opinion, accept or assume responsibility for any other purpose or to any other person to whom this report is shown or in to whose hands it may come save where expressly agreed by our prior consent in writing.

We report to you our opinion as to whether the financial statements give a true and fair view and are properly prepared in accordance with the Statement of Recommended Practice: Accounting for Further and Higher Education, the Accounts Direction issued by the Higher Education Funding Council for England and United Kingdom Generally Accepted Accounting Practice.

We report to you whether in our opinion, funds from funding bodies, grants and income for specific purposes and from other restricted funds administered by the College, have been properly applied in all material respects for the purposes for which they were received, and whether income has been applied in all material respects in accordance with the College's statutes and where appropriate with the financial memorandum with the Higher Education Funding Council for England (HEFCE).

We also report to you if, in our opinion, the information given in the report of the Chief Operating Officer is not consistent with those financial statements, the College has not kept proper accounting records, or if we have not received all the information and explanations we require for our audit.

We read the other information contained in the Annual Report and consider the implications for our report if we become aware of any apparent misstatements or material inconsistencies with the financial statements. The other information comprises only the Rector's foreword, the section on Imperial's year, the corporate governance statement and the responsibilities of the Council.

The maintenance and integrity of the Imperial College London website is the responsibility of the Council; the work carried out by the auditors does not involve consideration of these matters and, accordingly, the auditors accept no responsibility for any changes that may have occurred to the financial statements since they were initially presented on the website.

Legislation in the United Kingdom governing the preparation and dissemination of financial statements may differ from legislation in other jurisdictions.

We also review the statement of internal control and comment if the statement is inconsistent with our knowledge of the College. We are not required to consider whether the statement of internal control covers all risks and controls, or to form an opinion on the effectiveness of the College's corporate governance procedures or its risk and control procedures. We consider the implications for our report if we become aware of any apparent misstatements or material inconsistencies with the financial statements.

Our responsibilities do not extend to any other information.

Basis of audit opinion

We conducted our audit in accordance with International Standards on Auditing (UK and Ireland) issued by the Auditing Practices Board and with the HEFCE Accountability and Audit Code of Practice contained in the Financial Memorandum 2008/19. An audit includes examination, on a test basis, of evidence relevant to the amounts and disclosures in the financial statements. It also includes an assessment of the significant estimates and judgements made by the Council in the preparation of the financial statements, and of whether the accounting policies are appropriate to the College's circumstances, consistently applied and adequately disclosed.

We planned and performed our audit so as to obtain all the information and explanations which we considered necessary in order to provide us with sufficient evidence to give reasonable assurance that the financial statements are free from material misstatement, whether caused by fraud or other irregularity or error. In forming our opinion we also evaluated the overall adequacy of the presentation of information in the financial statements.

Opinion

In our opinion:

- i. the financial statements give a true and fair view of the state of affairs of the College and the Group at 31 July 2010, and of the group's income and expenditure, recognised gains and losses and statement of cash flows for the year then ended;
- ii. the financial statements have been properly prepared in accordance with the Statement of Recommended Practice: Accounting for Further and Higher Education, the Accounts Direction issued by the Higher Education Funding Council for England and United Kingdom Generally Accepted Accounting Practice (UK GAAP);
- iii. in all material respects, income from the Higher Education Funding Council for England, grants and income for specific purposes and from other restricted funds administered by the College have been properly applied only for the purposes for which they were received; and
- iv. in all material respects, income has been applied in accordance with the College's statutes and funds provided by HEFCE have been applied in accordance with the financial memorandum (2008/19) with the Higher Education Funding Council for England, and any other terms and conditions attached to them.

Consolidated income and expenditure account

For the year ended 31 July 2010

	Note	2010 £m	2009 £m
Income			
Funding Council grants	1	172.2	178.4
Academic fees and support grants	2	120.9	108.8
Research grants and contracts	3	296.8	286.8
Other operating income	4	89.1	84.8
Endowment and investment income	5	15.0	13.3
Total income		694.0	672.1
Less: share of income from joint venture		(0.8)	(0.3)
Net income		693.2	671.8
Expenditure			
Staff costs	6	357.7	351.1
Restructuring costs	6	1.7	8.0
Depreciation	9	44.1	46.7
Other operating expenses	7	241.6	245.1
Interest and other finance costs	8	6.1	6.5
Total expenditure	9	651.2	657.4
Surplus after depreciation of fixed assets at valuation and before tax		42.0	14.4
Share of associates' operating results		0.1	0.1
Share of operating profit in joint venture		0.2	–
Surplus after depreciation of assets at valuation and tax		42.3	14.5
Minority interest	28	(0.9)	1.6
Surplus before exceptional items		41.4	16.1
Exceptional items: continuing operations			
Exceptional loss on deemed disposal of interests in a group undertaking	29	(1.2)	–
Surplus on continuing operations after depreciation, exceptional items and tax		40.2	16.1
Transfer from accumulated income within endowments	14	1.1	0.6
Surplus for the year retained within general reserves		41.3	16.7

No operations were discontinued during the year. All operations above are continuing.

Note of historical cost surpluses and deficits

For the year ended 31 July 2010

Surplus on continuing operations before taxation	40.2	16.1
Realisation of revaluation gains of prior years on fixed asset investments sold in the year	(0.1)	–
Historical cost surplus for the year before tax	40.1	16.1
Historical cost surplus for the year after taxation	40.1	16.1

Balance sheets

as at 31 July 2010

	Note	Consolidated		College	
		2010 £m	2009 £m	2010 £m	2009 £m
Fixed assets					
Tangible assets	11	803.5	733.4	792.4	715.1
Investments	12, 27	64.8	53.1	28.5	23.4
Investments in joint venture:					
Share of gross assets	13	0.7	0.3	–	–
Share of gross liabilities	13	(0.5)	(0.3)	–	–
		868.5	786.5	820.9	738.5
Endowment asset investments	14	58.8	56.0	58.8	56.0
Current assets					
Stocks		0.4	0.3	0.2	0.2
Debtors	15	124.8	93.6	128.7	99.9
Investments and short-term deposits	25	79.6	160.3	65.0	131.0
Cash at bank and in hand	25	96.2	22.8	87.0	20.8
		301.0	277.0	280.9	251.9
Creditors: amounts falling due within one year	16	(303.7)	(281.2)	(303.1)	(283.7)
Net current liabilities		(2.7)	(4.2)	(22.2)	(31.8)
Total assets less current liabilities		924.6	838.3	857.5	762.7
Creditors: amounts falling due after more than one year	17	(166.2)	(172.5)	(165.5)	(171.4)
Provisions for liabilities and charges	18	(13.8)	(18.4)	(13.8)	(18.4)
Total net assets excluding pension asset		744.6	647.4	678.2	572.9
Pension asset	32	–	–	–	–
Total net assets including pension asset		744.6	647.4	678.2	572.9

	Note	Consolidated		College	
		2010 £m	2009 £m	2010 £m	2009 £m
Represented by:					
Deferred capital grants	19	387.9	339.4	385.1	328.1
Endowments					
Expendable	20	17.1	17.6	17.1	17.6
Permanent	20	41.7	38.4	41.7	38.4
		58.8	56.0	58.8	56.0
Revaluation reserve	22	4.0	4.8	4.0	3.9
General reserves					
Income and expenditure account	21,22	256.5	211.1	230.3	184.9
Share based payments	22	4.7	4.7	-	-
Pension reserve	22	-	-	-	-
General reserves including pension reserve		261.2	215.8	230.3	184.9
Total College funds		711.9	616.0	678.2	572.9
Minority interest	28	32.7	31.4	-	-
Total funds		744.6	647.4	678.2	572.9

The financial statements on pages 35 to 59 were approved by the Council on 26 November 2010 and signed on their behalf by:

The Lord Kerr of Kinlochard, Chairman

Sir Keith O'Nions, Rector

Dr M.P. Knight, Chief Operating Officer

Consolidated cash flow statement

For the year ended 31 July 2010

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	Note	2010 £m	2009 £m
Net cash inflow from operating activities	24	57.9	54.4
Returns on investments and servicing of finance			
Income received from endowments		1.1	1.5
Income received from short-term investments		6.0	10.3
Other interest received		0.4	0.8
Interest paid		(6.0)	(8.9)
		1.5	3.7
Capital expenditure and financial investment			
Payments to acquire tangible assets		(117.4)	(122.2)
Purchase of fixed asset investments		(22.0)	(18.3)
Acquisition of endowment assets		(6.2)	(6.9)
Total payments to acquire fixed and endowment asset investments		(145.6)	(147.4)
Receipts from disposal of tangible assets		–	0.2
Receipts from disposal of fixed asset investments		12.8	9.7
Receipts from disposal of endowment assets		1.9	8.1
Deferred capital grants received		59.1	54.2
Endowments received		1.8	1.3
		(70.0)	(73.9)
Acquisitions and disposals			
Receipts on issue of shares to minority interests		0.1	–
		80.7	(19.3)
Management of liquid resources			
Financing			
Net mortgages and loans repaid		(1.9)	–
Settlement of options		(0.1)	–
		(2.0)	–
Increase / (decrease) in cash	25	68.2	(35.1)

Reconciliation of net cash flow to movement in net funds

For the year ended 31 July 2010

	2010 £m	2009 £m
Increase/(decrease) in cash in the period	68.2	(35.1)
(Decrease)/increase in short-term investments	(80.7)	19.3
Loan repayments	1.9	–
Change in net funds	(10.6)	(15.8)
Net funds at 1 August	27.9	43.7
Net funds at 31 July	25	27.9

Statement of consolidated total recognised gains and losses

For the year ended 31 July 2010

	Note	2010 £m	2009 £m
Surplus on continuing operations after depreciation, exceptional items and tax		40.2	16.1
Increase/(decrease) in market value of endowment asset investments	14, 20	2.1	(0.7)
Net endowment additions	14, 20	1.8	1.3
Revaluation of investments within fixed assets		(0.9)	(1.6)
Transfer from deferred capital grants		4.3	–
Movement in share based payment reserve	22	(0.1)	–
Total recognised gains relating to the year		47.4	15.1
Opening reserves and endowments		276.6	
Total recognised gains relating to the year		47.4	
Closing reserves and endowments		324.0	

Statement of principal accounting policies

1. Accounting convention

The financial statements have been prepared under the historical cost convention, as modified by the revaluation of endowment and fixed asset investments, and in accordance with both the Statement of Recommended Practice: Accounting for Further and Higher Education Institutions (SORP) and applicable UK accounting standards.

2. Basis of consolidation

The consolidated financial statements incorporate the financial statements of the College, Imperial College Union and all subsidiary undertakings, including Imperial Innovations Group plc, for the financial year to 31 July. The consolidated income and expenditure account includes the College's share of the income, expenditure and tax of associated undertakings and joint ventures, while the consolidated balance sheet includes investment in associated undertakings and joint ventures at the College's share of their net tangible assets. Associated undertakings are those in which the College has a significant, but not dominant, influence over their commercial and financial policy decisions. Joint ventures represent investments in which the College has joint control.

A separate income and expenditure account for the parent organisation has not been presented because the College has taken advantage of the exemption allowed under s408 of the Companies Act 2006.

For those subsidiary, joint venture and associated undertakings that have different accounting year-end dates, interim accounts to 31 July for these companies have been consolidated. For those subsidiary companies that report under International Financial Reporting Standards for their own financial statements, (primarily Imperial Innovations Group plc), accounts have been restated to comply with UK accounting standards for the purposes of consolidation into these consolidated Group accounts.

3. Recognition of income and expenditure

Income from donations, research grants and contracts, and other services rendered is included to the extent of the associated expenditure incurred during the year together with any related contributions towards overhead costs.

All income from short-term deposits and endowments is credited to the income and

expenditure account in the period in which it is earned. Income from endowments not expended in accordance with the restrictions of the endowment is transferred from the income and expenditure account to endowments. Income is deferred only when the College has to fulfil conditions before becoming entitled to it or where it has been specified by the donor that the money should be expended in a future period.

Expenditure incurred relates to the receipt of goods and services. This includes patent costs which are written off in the year that they are incurred rather than being capitalised. A provision for bad debts is estimated on the basis that as debts become older, a higher percentage become irrecoverable.

Where the College disburses funds it has received as paying agent on behalf of the Funding Council or other body, and has no beneficial interest in the funds, the receipt and subsequent disbursement of the funds has been excluded from the income and expenditure account.

4. Pension schemes

The College participates in four principal pension schemes which are funded defined benefit schemes. The schemes are contracted-out of the State Second Pension (S2P). The SAUL, USS and FPS schemes are valued formally every three years by professionally qualified and independent actuaries using the Projected Unit method. The NHS pension scheme is valued every four years using the aggregate method.

The USS, SAUL and NHS are multi-employer schemes and it is not possible to identify the College's share of the underlying assets and liabilities of the schemes. Therefore, as required by FRS 17, the contributions are charged directly to the income and expenditure account as if the schemes were defined contribution schemes.

The FPS pension scheme is accounted for on the basis of FRS 17. The scheme's assets are included at market value and the scheme's liabilities are measured on an actuarial basis using the projected unit method and discounted at an appropriate rate of return. The College's share of the surplus or deficit of the scheme is recognised as an asset or liability on the balance sheet, with surplus included only to the extent that it is recoverable through reduced contributions in the future or through refunds from the scheme. The current service cost and past service costs are included within staff costs and the expected return on the scheme's assets, net of the impact of the unwinding

of the discount on the scheme's liabilities, is included within endowment income. Actuarial gains and losses, including differences between the expected and actual return on the scheme's assets, are recognised in the statement of total recognised gains and losses.

Imperial Innovations Group plc, a subsidiary of the College, operates a defined contribution pension scheme for its employees, with contributions being charged to the income and expenditure account in the period to which they relate.

5. Foreign currencies

Transactions denominated in euros, US\$ and other foreign currencies are recorded at the rate of exchange ruling at the dates of the transactions. Monetary assets and liabilities denominated in foreign currencies are translated into sterling at year end rates of exchange or, where there are related forward foreign exchange contracts, at contract rates. The resulting exchange differences are recognised as part of income and expenditure.

6. Finance leases

Assets held under finance leases together with the related lease obligations are recorded on the balance sheet with initial values equivalent to the purchase price of the asset. The excess of lease payments over recorded lease obligations are treated as finance charges which are amortised over each lease term to give a constant rate of charge on the remaining balance of the obligations.

7. Land and buildings

Purchased land and purchased or constructed buildings are stated at cost. Freehold land is not depreciated while leasehold land is depreciated over the life of the lease. Buildings, including service plant, are depreciated over their expected useful lives or at the rate of 2% per annum of their historical cost (no purchased buildings are held on leases of less than 50 years). Buildings which are still under construction are not depreciated. Where land and buildings are acquired with the aid of specific grants, the grants are treated as deferred capital grants and released to income at the same rate as depreciation is charged.

Buildings acquired on integration of previously independent institutions are brought into the balance sheet at fair

value (market value where ascertainable, otherwise depreciated replacement cost) and depreciated over their remaining expected useful lives. An amount equivalent to the fair value of assets so acquired is credited to deferred capital grants and released in the same manner as other such grants.

Costs incurred in relation to buildings after their initial acquisition are capitalised only to the extent that they increase the expected future benefits beyond those originally assessed. The cost of such enhancements are depreciated at the rate of 2% per annum, or over the life of the asset if shorter. Finance costs which are directly attributable to the construction of land and buildings are capitalised as part of the cost of those assets.

Some accommodation within associated hospitals is occupied rent free by the College but this is approximately offset by College accommodation occupied rent free by them.

A review of impairment of a fixed asset is carried out if events or changes in circumstances indicate that the carrying amount of any fixed asset may not be recoverable.

On adoption of FRS 15, the College followed the transitional provision to retain the book value of land and buildings but not to adopt a policy of revaluations of these properties in the future. These values are retained subject to the requirement to test assets for impairment in accordance with FRS 11.

8. Fixtures, fittings, tools and equipment

Fixtures, fittings, tools and equipment, including computers and software, costing less than £50,000 per individual item or group of related items are written off in the year of acquisition. All other items are capitalised.

Capitalised equipment is stated at cost and, once in service, depreciated over its expected useful life or at 20% per annum; equipment acquired for specific research projects is depreciated over the remaining life of the project (generally three years).

Where fixtures, fittings, tools and equipment are acquired with the aid of specific grants they are capitalised and depreciated as above. The related grant is treated as a deferred capital grant and released to income at the same rate as depreciation is charged.

9. Reserves

Discretionary reserves are earmarked for specific purposes by the management of the College whereas non-discretionary reserves are legally restricted.

10. Investments

Endowment asset investments and listed fixed asset investments are included in the balance sheet at market value less a provision, where appropriate, to reflect restrictions in their marketability. Fixed assets investments that are not listed on a recognised stock exchange are carried at cost less any provision for impairment in their value except where costs are revalued in compliance with accounting standards. Current asset investments are included at the lower of cost and net realisable value. Increases/decreases in value arising on the revaluation of fixed asset investments are carried to the revaluation reserve; a diminution in value is taken to the income and expenditure account to the extent it is not covered by a previous revaluation surplus. Investments in associated companies where the input from the College is represented only by the intellectual property rights are valued at zero historical cost.

11. Stocks

Only the value of stocks held in the refectories and central stores are included on the balance sheet. They are valued at the lower of cost and net realisable value.

12. Cash flows and liquid resources

Cash flows comprise increases and decreases in cash. Cash includes cash in hand, deposits repayable on demand and overdrafts. Deposits are repayable on demand if they can be withdrawn at any time without notice and without penalty or if a maturity or period of notice of not more than 24 hours has been agreed. No investments, however liquid, are included as cash.

Liquid resources comprise assets held as readily disposable stores of value. They include term deposits, government securities and loan stock held as part of the College's treasury management activities. They exclude any such assets held as endowment asset investments.

13. Taxation status

The College is an exempt charity within the meaning of Schedule 2 of the Charities Act 1993 and as such is a charity within the meaning of Paragraph 1 of Schedule 6 to the Finance Act 2010. Accordingly, the College is potentially exempt from taxation in respect of income or capital gains received within categories covered by Sections 478–488 of the Corporation Taxes Act 2010 (CTA 2010) (formerly enacted in Section 505 of the Income and Corporation Taxes Act 1988 (ICTA)) or Section 256 of the Taxation of Chargeable Gains Act 1992 to the extent that such income or gains are applied to exclusively charitable purposes. The College receives no similar exemption in respect of value added tax. The College's subsidiary companies are subject to corporation tax and VAT in the same way as any commercial organisation.

14. Share based payments

Certain employees (and directors) of Imperial Innovations Group plc, a subsidiary of the College, receive remuneration in the form of share-based payments. Equity settled share-based payments are measured at fair value, using the binomial option pricing model, at the date of grant. This fair value is expensed on a straight-line basis to the income and expenditure account over the vesting period, based on an estimate of shares that will eventually vest. A corresponding credit is taken to the share-based payment reserve.

Notes to the accounts

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1. Funding Council grants	Note	2010 £m	2009 £m
Recurrent—teaching		61.0	56.9
Recurrent—research		92.8	98.3
London Whole Institutions		–	0.4
Higher Education Innovation Fund (HEIF)		1.5	1.4
Project capital allocations		62.0	32.8
Other specific grants		2.4	4.7
<hr/>			
Grants from Higher Education Funding Council for England (HEFCE)		219.7	194.5
Joint Information Systems Committee (JISC)		–	0.1
Transferred to deferred capital grants in the year			
Buildings		(61.8)	(30.2)
Equipment		(0.2)	(2.6)
Deferred capital grants released in the year			
Buildings	19	11.0	12.2
Equipment	19	3.5	4.4
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		172.2	178.4
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2. Academic fees and support grants	Registered student numbers		2010 £m	2009 £m
	31 Dec 2009	31 Dec 2008		
Full-time home and European Union students	9,539	9,185	31.3	27.2
Full-time overseas students	3,934	3,834	75.1	68.6
Part-time students	1,094	994	5.5	5.1
Research training support grants			5.7	5.4
Short course fees			3.3	2.5
<hr/>				
			120.9	108.8
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Research training support grants include £2.7 million (£2.6 million in 2009) of tuition fees paid in respect of full-time home and European Union students.

Total numbers of full-time and part-time students are 14,567 in 2010 and 14,013 in 2009 (excluding those on Research Training Support Grants and short courses).

3. Research grants and contracts	2010 £m	2009 £m
UK research councils	104.4	102.1
UK government departments, local and health authorities	38.5	29.7
UK industry, commerce and public corporations	19.6	27.1
UK charities	70.2	70.9
UK other	0.8	1.4
European Commission	20.0	15.3
Other European Union and overseas	43.3	40.3
	296.8	286.8
Research income relating to the direct expenditure incurred during the year	241.6	233.8
Contributions towards overhead costs	55.2	53.0
	296.8	286.8

Total research income excludes £9.9 million (£6.1 million in 2009) deferred capital grants received in 2010 but includes £8.4 million (£6.7 million in 2009) released from deferred capital grants.

UK other research grants and contracts include restricted grant aid from the Big Lottery Fund. The total amount of funding awarded for projects ongoing in 2010 includes £13.1 million (2009: £11.8 million) to fund an interdisciplinary study of the natural environment, focusing on biodiversity and the skills, tools and training associated with the identification and recording of flora and fauna. Of the total awarded, £7.0 million (2009: £4.1 million) had been received as at 31 July from the funder. A total of £5.8 million has been spent on the project to date (£1.9 million by the College, and £3.9 million by unrelated third party partners). Of the amounts recorded as income to date by College £0.7 million was recognised in the year to 31 July 2010 (2009: £0.8 million).

4. Other operating income	2010 £m	2009 £m
Health and hospital authorities	17.0	16.2
Consultancies and scientific services	10.5	8.2
Donations	3.1	3.4
Residences, catering and conferences	27.2	23.3
Income from exploitation of intellectual property	2.2	2.0
Rents receivable	4.1	3.6
Commissions and fees	1.8	1.6
Other departmental income	8.0	9.1
Released from deferred capital grants on land and buildings	1.6	6.0
Released from deferred capital grants on equipment	0.1	0.1
Other income	13.5	11.3
	89.1	84.8

5. Endowment and investment income	Note	2010 £m	2009 £m
Income from expendable endowment investments	20	0.3	0.5
Income from permanent endowment investments	20	0.8	1.1
Income from long-term investments		9.0	0.5
Income from short-term investments		4.5	10.5
Other interest receivable		0.4	0.7
		15.0	13.3

Notes to the accounts

6. Staff	Note	2010 £m	2009 £m
Staff costs:			
Wages and salaries		296.9	295.7
Social security costs		25.3	23.3
Other pension costs	32	35.5	32.1
		357.7	351.1
Restructuring costs		1.7	8.0
		359.4	359.1

A number of staff restructuring initiatives are currently underway as part of a cost control exercise being undertaken by the College.

	2010 £000	2009 £000
Emoluments of the Rector:		
Remuneration	299	292
Social security costs	37	34
Other	12	6
	348	332
Employer's pension contributions	19	41
	367	373

On 31 December 2009, Sir Roy Anderson resigned as Rector of the College. On 1 January 2010, Sir Keith O'Nions was appointed Acting Rector. Subsequently, on 9 July 2010, he was appointed permanent Rector. Emoluments included in the table above for the year to 31 July 2010 include remuneration received by Sir Roy Anderson in respect of qualifying services for the five months to 31 December 2009, and by Sir Keith O'Nions in respect of qualifying services for the seven months to 31 July 2010.

Aggregate payments for compensation for loss of office paid to senior members of staff earning in excess of £100,000 per annum (eight in 2010, none in 2009);

	2010 £000	2009 £000
Payments in respect of loss of office	626	–
Benefits in kind	90	–
	716	–

Payments in respect of loss of office comprise termination payments paid directly to individuals in respect of loss of office, plus contributions made towards legal expenses.

Benefits in kind include the value of the use of a furnished private residence granted to Sir Roy Anderson from the date of his resignation as Rector to 30 June 2010.

All compensation in respect of loss of office has been internally funded by the College.

	Full-Time Equivalent		Headcount	
	2010 Number	2009 Number	2010 Number	2009 Number
Average staff numbers by major category:				
Research and education	3,365	3,233	3,527	3,385
Professional services	2,162	2,237	2,362	2,438
Technical services	559	602	577	622
Operational services	527	582	594	705
	6,613	6,654	7,060	7,150

The Full-Time Equivalent (FTE) number is based on the headcount but adjusted to include only the pro rata element of part-time staff. The numbers include staff employed by the subsidiary companies and the Students' Union.

Remuneration of higher paid staff (excluding the Rector)	2010 Number	Restated 2009 Number
£100,000–£109,999	54	54
£110,000–£119,999	40	35
£120,000–£129,999	27	29
£130,000–£139,999	17	22
£140,000–£149,999	23	28
£150,000–£159,999	24	23
£160,000–£169,999	19	22
£170,000–£179,999	18	13
£180,000–£189,999	11	10
£190,000–£199,999	12	8
£200,000–£209,999	5	3
£210,000–£219,999	5	3
£220,000–£229,999	2	3
£230,000–£239,999	4	2
£240,000–£249,999	1	1
£250,000–£259,999	1	1
£260,000–£269,999	–	1
£270,000–£279,999	1	1
£280,000–£289,999	–	1
£290,000–£299,999	1	1
£300,000–£309,999	1	1

Remuneration of higher paid staff excludes employer's pension and National Insurance contributions but includes NHS Distinction Awards. 2009 figures have been restated to include the impact of a shared equity housing benefit previously excluded from remuneration totals.

7. Other operating expenses	2010 £m	2009 £m
Research grants and contracts	99.5	100.9
Consultancies and scientific services	3.6	2.8
Short courses	1.8	1.0
General expenditure in academic departments	34.6	40.9
Residences, catering and conferences	14.3	13.7
Central support services	21.2	22.2
Fellowships, scholarships and prizes	8.2	7.4
Books, periodicals and other library expenditure	6.3	5.9
Facilities and maintenance of premises	46.9	47.1
Auditors' remuneration	0.2	0.2
Auditors' fees in respect of non-audit services	0.1	0.1
Other, including Students' Union	4.9	2.9
	241.6	245.1
8. Interest and other finance costs	2010 £m	2009 £m
Losses on long-term investments	–	0.6
Bank and other loans wholly repayable after more than one year	5.6	5.4
Other financing costs	0.5	0.5
	6.1	6.5

Notes to the accounts

9. Analysis of expenditure by activity	Staff costs £m	Depreciation £m	Other operating expenses £m	Interest and other finance costs £m	2010 Total £m	2009 Total £m
Academic departments	148.0	2.8	36.5	0.1	187.4	192.4
Academic services:						
Libraries and information services	4.1	–	6.3	–	10.4	10.5
Central computer and computer networks	11.0	1.0	5.0	–	17.0	19.5
Other	8.1	–	8.1	–	16.2	15.3
Total academic services	23.2	1.0	19.4	–	43.6	45.3
Research grants and contracts	133.6	8.4	99.5	–	241.5	233.9
Residences, catering and conferences	7.0	4.7	14.3	–	26.0	22.8
Premises	15.0	26.2	46.9	–	88.1	93.9
Administration and central services:						
Central administration	18.3	0.1	3.8	–	22.2	24.9
General educational expenditure	2.3	–	10.6	–	12.9	11.6
Staff and student facilities	4.8	0.9	5.3	–	11.0	9.7
Total administration and central services	25.4	1.0	19.7	–	46.1	46.2
Other expenditure:						
Consultancies and scientific services	4.6	–	3.6	–	8.2	7.8
Other, including restructuring costs	2.6	–	1.7	6.0	10.3	15.1
Total other expenditure	7.2	–	5.3	6.0	18.5	22.9
	359.4	44.1	241.6	6.1	651.2	657.4
The depreciation charge has been funded by:	Note	£m				
Deferred capital grants released	19	24.6				
General income		19.5				
Total depreciation charge		44.1				

10. Segmental reporting	Segment total income £m	Inter-segment income £m	Income from third parties £m	Surplus/(deficit) before tax, minority interest and exceptional items £m	Total assets £m	Net assets £m
Year ended 31 July 2010						
Education and research	674.6	0.7	673.9	36.7	1,009.1	577.1
College Fund	8.4	1.4	7.0	3.1	148.1	99.6
Imperial Innovations Group plc	12.7	0.4	12.3	2.5	71.1	67.9
	695.7	2.5	693.2	42.3	1,228.3	744.6
Year ended 31 July 2009						
Education and research	661.9	0.8	661.1	15.3	931.1	486.4
College Fund	4.9	0.3	4.6	1.8	118.0	93.7
Imperial Innovations Group plc	6.3	0.2	6.1	(2.6)	70.4	67.3
	673.1	1.3	671.8	14.5	1,119.5	647.4

The Education and research segment comprises the core academic activities of scholarship, education and research.

The College Fund manages assets not required for the core academic mission of the College with a pure investment focus, in order to provide steady capital growth and a regular income to support the College's academic objectives.

Imperial Innovations Group plc ('Innovations'), is an intellectual property, incubation and investment subsidiary developed to provide commercialisation and business support services to the College and external organisations. For purposes of its individual financial statements it reports as an AIM listed group under International Financial Reporting Standards. Figures included in the segmental analysis above, however, have been prepared on the basis of UK Generally Accepted Accounting Principles to comply with the consolidation requirements of the Statement of Recommended Practice: Accounting for Further and Higher Education Institutions (SORP) and other applicable UK accounting standards.

11. Tangible assets

	Consolidated				
	Land and buildings		Fixtures, fittings, tools and equipment £m	Assets under construction £m	Total £m
	Freehold £m	Leasehold £m			
Cost					
At 1 August 2009	348.9	390.7	162.6	130.8	1,033.0
Additions	30.6	4.0	17.0	63.4	115.0
Transfers	80.5	19.4	(0.2)	(99.7)	–
Disposals	–	(0.2)	(4.0)	–	(4.2)
At 31 July 2010	460.0	413.9	175.4	94.5	1,143.8
Depreciation					
At 1 August 2009	79.9	106.6	113.1	–	299.6
Charge for year	12.3	16.1	15.7	–	44.1
Eliminated on disposals	(0.1)	0.3	(3.6)	–	(3.4)
At 31 July 2010	92.1	123.0	125.2	–	340.3
Net book value					
At 31 July 2010	367.9	290.9	50.2	94.5	803.5
At 1 August 2009	269.0	284.1	49.5	130.8	733.4
	College				
	Land and buildings		Fixtures, fittings, tools and equipment £m	Assets under construction £m	Total £m
	Freehold £m	Leasehold £m			
Cost					
At 1 August 2009	348.9	380.8	159.1	120.9	1,009.7
Additions	30.6	11.8	16.7	62.0	121.1
Transfers	80.5	8.7	(0.2)	(89.0)	–
Disposals	–	–	(2.3)	–	(2.3)
At 31 July 2010	460.0	401.3	173.3	93.9	1,128.5
Depreciation					
At 1 August 2009	79.8	105.1	109.7	–	294.6
Charge for year	12.3	15.5	15.5	–	43.3
Eliminated on disposals	–	–	(1.8)	–	(1.8)
At 31 July 2010	92.1	120.6	123.4	–	336.1
Net book value					
At 31 July 2010	367.9	280.7	49.9	93.9	792.4
At 1 August 2009	269.1	275.7	49.4	120.9	715.1

The transitional rules set out in FRS 15 'Tangible Fixed Assets' have been applied on implementing FRS 15. Accordingly, the book values at implementation have been retained.

Under a 2004 arrangement a finance lease on land was acquired by the College from the Hammersmith Hospitals Trust for the construction of new research buildings for use by the College and by GlaxoSmithKline) and the Medical Research Council under finance leases. All leases have been fully paid hence no finance lease debtor or creditor is reported in the accounts. The land held under the finance lease at a cost of £1.7 million and cumulative depreciation of £0.1 million have been included under Leasehold.

Included at cost within land and buildings for the College and Group as at 31 July 2010 and 2009 is a heritage asset, being the nineteenth century Queen's Tower, currently insured at a value of £8.4 million (2009: £8.4 million).

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12. Investments	Note	Consolidated		College	
		2010 £m	2009 £m	2010 £m	2009 £m
Investment in subsidiary companies at cost		–	–	9.2	9.2
Investment in other associated undertakings		0.7	0.6	0.1	0.1
Other fixed asset investments	27	64.1	52.5	19.2	14.1
		64.8	53.1	28.5	23.4

As at 31 July 2010 the College's direct equity holdings in subsidiary and associated undertakings were as follows:

Undertaking	Activity	Holding %
Subsidiaries		
IC Consultants Ltd	Consultancy and scientific services	100.0
Imperial Activities Ltd	Commercial property services	100.0
Extracalm Co Ltd	Administrative services	100.0
Private Patient Healthcare Ltd	Private patient healthcare services	100.0
Burlington Danes Construction Ltd	Construction and property services	100.0
Imperial Bioincubator Ltd	Provision of facilities to spin-out companies	100.0
Imperial College (S) Pte Ltd	In members voluntary liquidation	100.0
Imperial College Company Maker Ltd	Dormant	100.0
Imperial College Ltd	Dormant	100.0
Imperial MBA Ltd	Dormant	100.0
Imperial College London Ltd	Dormant	100.0
Imperial Innovations Group plc	Commercialisation of ideas and inventions	50.4
Extracalm Cleaning LLP	Cleaning services partnership	partnership
Associates		
Natural Resources Intl Ltd	Environmental consultancy and scientific services	50.0
GMEC Management Company Ltd	Promotion of collaborative biomedical research	20.0

The College holds a total 49% interest in Winstanley 1 Ltd and Winstanley 2 Ltd and a 49.9% holding in Woodlands 1 LLP — entities formed to develop and let postgraduate student accommodation in the UK. These investments are included at valuation split between fixed asset investments (note 12) and endowment assets (note 14). Although the College holds more than 20%, these holdings are considered to be pure investment assets and are not equity accounted for as associates. As at 31 July 2010 a 35.9% equity interest in both Winstanley 1 Ltd and Winstanley 2 Ltd was included within endowment assets, with a remaining equity interest of 13.1% being included within the College's fixed asset investments. A 36.6% interest in the Woodlands 1 LLP was included within endowment assets, with a remaining interest of 13.3% included within fixed asset investments.

All companies are registered in England, except for Imperial College (S) Pte Ltd, which is registered in Singapore.

13. Investment in joint venture

At 31 July 2010 the College held a 50% share in the Bio Nano Centre Ltd, a UK company limited by guarantee that specialises in the development of biomedical and nanotechnology-based products. The investment has been consolidated using the gross equity method.

14. Endowment asset investments**Consolidated and College**

	Balance 2009 £m	Disposals £m	Additions £m	Net expenditure from capital £m	Transfers between investments £m	Increase/ (decrease) in market value £m	Balance 2010 £m
UK equities	8.5	–	–	–	(1.5)	(1.8)	5.2
International equities	19.1	–	–	–	2.2	3.3	24.6
Absolute return investments	5.5	–	–	–	(0.4)	0.4	5.5
Long/short UK equities fund	2.0	–	–	–	(0.1)	0.1	2.0
Associate property partnerships	–	–	–	–	4.0	–	4.0
Investment property	0.8	–	–	–	–	0.1	0.9
Investment income receivable	0.1	–	–	–	–	–	0.1
Short-term investments/cash	20.0	(0.5)	2.3	(1.1)	(4.2)	–	16.5
Total	56.0	(0.5)	2.3	(1.1)	–	2.1	58.8
Fixed interest and equities at cost	52.6						55.1

15. Debtors: amounts falling due within one year**Consolidated****College**

	2010 £m	2009 £m	2010 £m	2009 £m
Amounts falling due within one year:				
Amounts due on research grants and contracts				
Debtors	20.0	18.4	20.0	18.4
Work in progress	48.8	45.5	48.8	45.5
Other debtors	40.9	14.3	36.4	10.5
Prepayments and accrued income	15.6	15.1	13.0	12.8
Amounts owed by group undertakings	–	–	11.0	12.0
Provision for bad debts	(1.8)	(2.0)	(1.4)	(1.6)
	123.5	91.3	127.8	97.6
Amounts falling due after more than one year:				
Prepayments and accrued income	1.3	2.3	0.9	2.3
	124.8	93.6	128.7	99.9

The increase in other debtors above reflects a change in the student fee billing process during 2009–10. Whereas in 2008–09 postgraduate tuition fees were billed in the academic year of study, in 2009–10 students have been invoiced the full year fees at the point of unconditional offer. This has resulted in an increase in the year-end tuition fee receivable balance of approximately £20.6 million as at 31 July 2010.

16. Creditors: amounts falling due within one year**Consolidated****College**

	2010 £m	2009 £m	2010 £m	2009 £m
Bank overdraft	3.7	2.0	15.8	10.5
Loans repayable within one year	5.8	1.9	5.8	1.9
Research payments received on account	146.8	130.4	146.8	130.4
Creditors	12.9	17.9	11.0	16.4
Social security and other taxation payable	9.2	9.1	9.2	9.0
Accruals and deferred income	125.3	119.9	110.5	108.0
Amounts owed to group undertakings	–	–	4.0	7.5
	303.7	281.2	303.1	283.7

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17. Creditors: amounts falling due after more than one year	Consolidated		College	
	2010 £m	2009 £m	2010 £m	2009 £m
Other taxation payable	–	0.1	–	0.1
Loans repayable in one to two years	5.8	5.8	5.8	5.8
Loans repayable in two to five years	17.3	17.3	17.3	17.3
Loans repayable after more than five years	142.4	148.2	142.4	148.2
University Challenge Fund grants and Revenue Share Liability	0.7	1.1	–	–
	166.2	172.5	165.5	171.4

The College has arranged four unsecured sterling borrowing facilities.

1. A 30-year £50 million private placement arranged through Royal Bank of Scotland with a small number of institutions. It takes the form of loan notes. The facility was drawn down in a single amount in March 2003 and is not repayable until 2033. Interest at a fixed rate of 5.39% is payable annually in arrears.
2. A 15-year £23.2 million facility from the European Investment Bank. The facility was drawn in a single amount in December 2005 and repayments started in December 2009. Interest at variable rates is payable quarterly in arrears.
3. A 50-year £50 million private placement arranged through Royal Bank of Scotland with a small number of institutions. It takes the form of loan notes. The facility was drawn in a single amount in July 2006 and is not repayable until 2056. Interest at a fixed rate of 4.84% is payable annually in arrears.

4. A 15-year £50 million facility from the European Investment Bank. The facility was drawn in a single amount in May 2008 and repayments start in May 2011. Interest at variable rates is payable quarterly in arrears.

During 2009 the Group entered into a hedging arrangement in order to minimise its foreign exchange exposure. It took out a forward contract to exchange US dollars for sterling in May 2011 and November 2011 in respect of £1.4 million of proceeds receivable on the sale of one of its fixed asset investments. The discounted fair value of the currency forward exchange contracts held as at 31 July 2010 was £0.1 million. No amounts have been recognised in these financial statements in respect of this arrangement.

18. Provisions for liabilities and charges	Restructuring provision £m	Decommissioning of engineering facility £m	Total £m
Consolidated and College			
At 1 August 2009	9.6	8.8	18.4
Provided in the year	3.0	–	3.0
Utilised / written back in the year	(8.1)	–	(8.1)
Unwinding of the discount	–	0.5	0.5
At 31 July 2010	4.5	9.3	13.8

A number of restructuring programmes are currently underway within the College with the aim of reducing costs.

The decommissioning provision relates to a potential liability to remove a specialist engineering facility.

19. Deferred capital grants		Consolidated			College
Note	HEFCE & JISC grants £m	Other grants & benefactions £m	Total £m	Total £m	
At 1 August 2009					
Buildings	229.1	81.2	310.3	299.1	
Equipment	21.0	8.1	29.1	29.0	
Total	250.1	89.3	339.4	328.1	
Cash receivable					
Buildings—specific funding (including transfers)	60.8	2.1	62.9	71.2	
Equipment—specific funding	0.2	10.0	10.2	10.2	
Total	61.0	12.1	73.1	81.4	
Released to income and expenditure account					
Buildings	(11.0)	(4.1)	(15.1)	(14.9)	
Equipment	(3.5)	(6.0)	(9.5)	(9.5)	
Total	(14.5)	(10.1)	(24.6)	(24.4)	
At 31 July 2010					
Buildings	278.9	79.2	358.1	355.4	
Equipment	17.7	12.1	29.8	29.7	
Total	296.6	91.3	387.9	385.1	

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	20. Endowments					
	Consolidated and College					
	Unrestricted permanent £m	Restricted permanent £m	Total permanent £m	Restricted expendable £m	2010 Total £m	2009 Total £m
At 1 August						
Capital	11.0	26.4	37.4	24.0	61.4	60.8
Accumulated income	(0.3)	1.3	1.0	(6.4)	(5.4)	(4.8)
	10.7	27.7	38.4	17.6	56.0	56.0
New endowments	0.5	1.4	1.9	(0.1)	1.8	1.3
Investment income	0.2	0.6	0.8	0.3	1.1	1.6
Expenditure	(0.1)	(0.8)	(0.9)	(1.3)	(2.2)	(2.2)
	0.1	(0.2)	(0.1)	(1.0)	(1.1)	(0.6)
Increase/(decrease) in market value	0.4	1.1	1.5	0.6	2.1	(0.7)
At 31 July	11.7	30.0	41.7	17.1	58.8	56.0
Represented by:						
Capital	11.9	28.9	40.8	24.5	65.3	61.4
Accumulated income	(0.2)	1.1	0.9	(7.4)	(6.5)	(5.4)
	11.7	30.0	41.7	17.1	58.8	56.0

Included within endowments are a number of permanent funds with a deficit of accumulated income as at 31 July 2010. Within unrestricted permanent endowments these comprise two funds with a combined deficit balance of £0.3 million (2009: two funds with a deficit totalling £0.4 million). Within restricted permanent endowments there are 42 individual funds with a total combined deficit of £0.9 million (2009: 41 funds with a total combined deficit of £0.7 million). The College closely monitors funds in a deficit position and expects them to return to an accumulated income position over future years.

21. Income and expenditure account	Consolidated £m	College £m
Balance at 1 August 2009	211.1	184.9
Surplus after tax and minority interest	41.3	41.3
Transfers between reserves /deferred capital grants	4.1	4.1
Balance at 31 July 2010	256.5	230.3

22. Statement of movements on reserves	Consolidated				
	Opening balance £m	Surplus for the year £m	Transfer between reserves £m	Movement in year £m	Closing balance £m
Specific non-discretionary reserves					
Imperial College Union funds	2.0	–	(0.1)	–	1.9
Subsidiary and associate companies' reserves	24.2	–	0.1	–	24.3
	26.2	–	–	–	26.2
General income and expenditure reserve	184.9	41.3	(0.2)	4.3	230.3
Total income and expenditure reserves	211.1	41.3	(0.2)	4.3	256.5
Share based payments	4.7	–	0.1	(0.1)	4.7
Pension reserve	–	–	–	–	–
Total general reserves including pension reserve	215.8	41.3	(0.1)	4.2	261.2
Revaluation reserve	4.8	–	0.1	(0.9)	4.0
Total reserves	220.6	41.3	–	3.3	265.2

23. Related party transactions

For some years the College has maintained a Register of Interests of all Governors, Academic and Academic Related staff. Policies incorporated within the College's Financial Regulations require an individual to declare an interest and withdraw from any commercial discussions should a conflict of interest potentially arise. Written assurances have been obtained from all Governors and senior officers of the College in respect of themselves and their close family that for the year to 31 July 2010 they have not unduly influenced any transaction between the College and a related party, as defined by FRS 8.

Commercial relationships with companies or other organisations that might be regarded as related parties have been reviewed. During the year, the College purchased goods and services amounting to £14.5 million and received research grants and contracts amounting to £48.8 million from such parties. Research grants include £22.8 million from the Wellcome Trust where Baroness Manningham-Buller is a Governor and where Mr Stewart Newton is a member of the Investment Committee. The Wellcome Trust has detailed guidelines and controls which require that Governors withdraw from any discussion or decision making on the award of grants where there may be a conflict of interest.

Sir Keith O'Nions was on the board of Finmeccanica UK Ltd when he was appointed Rector. He resigned from the board on 31 March 2010.

The previous Rector, Sir Roy Anderson, is a non-executive director of GlaxoSmithKline plc. He is also a member of the Science Advisory Board of the Bill and Melinda Gates Foundation (Grand Challenges) and a Science Policy Committee Member for the Royal Society. Research grants and contracts include £1.8 million from GlaxoSmithKline plc, £4.8 million from the Bill and Melinda Gates Foundation and £3.9 million from the Royal Society.

The Lord Kerr of Kinlochard is deputy chairman of Royal Dutch Shell plc and is a member of the advisory board of BAE Systems plc. Research contract income includes £1.1 million from Royal Dutch Shell plc and £0.8 million from BAE Systems plc. The College also received £2.1 million of research contract income from AWE ML where Sir Peter Knight is a member of the Advisory Council.

Professor Stephen Smith, Principal of the Faculty of Medicine is also the Chief Executive of Imperial College Healthcare NHS Trust. Professor Maggie Dallman joined the Trust board in February 2010 as the university-appointed non-executive director, following the departure of

Sir Roy Anderson. Dr Rodney Eastwood, is also a member of the Trust Board. Claire Perry, the Managing Director of Imperial College Healthcare NHS Trust, serves on the College's Management Board. Purchased goods and services include £7.5 million and research grant income includes £6.5 million from Imperial College Healthcare NHS Trust.

Dr John Green, Chief Coordinating Officer, was also a Trustee of the Kennedy Institute of Rheumatology Trust. Research grant income includes £1.9 million from the Kennedy Institute of Rheumatology Trust.

In common with many universities, senior members of the College sit on Research Councils, other NHS Trust boards and other grant awarding bodies which have their own internal procedures to avoid potential conflicts of interest.

Mr Christopher Gosling, Director of Human Resources during the year, was a Trustee of the SAUL pension scheme. Purchased goods and services include £4.9 million to the SAUL Trustee Company. Further details of the scheme are outlined in note 32.

Dr M.P. Knight, Chief Operating Officer, is also the Chairman of the College's subsidiary Imperial Innovations Group plc (Imperial Innovations) and fees of £60k were paid by Imperial Innovations to Merrycroft Ltd, in which Dr Knight has a beneficial interest, for the provision of the Chairman's services to Imperial Innovations. Dr M.P. Knight also holds options over ordinary shares of Imperial Innovations and held ordinary shares in Imperial Innovations at 31 July 2010. Further details of Dr Knight's shares and options in the ordinary share capital of Imperial Innovations are given in the Directors Remuneration Report and in Note 27 on Related Party Disclosures within the Imperial Innovations' Annual Report for the year ended 31 July 2010 which is publicly available.

A number of other College employees own ordinary shares in Imperial Innovations Group plc, a subsidiary of the College. The total shareholding owned by College employees continues to represent less than one half of one per cent of the issued share capital.

The College has close relationships with a number of west London NHS Trusts with whom the College shares a number of sites and facilities. College staff work closely with those Trusts particularly in the clinical service areas.

24. Reconciliation of consolidated operating surplus to net cash inflow from operating activities

	2010 £m	2009 £m
Surplus after depreciation of fixed assets at valuation and before tax	42.0	14.4
Depreciation	44.1	46.7
Deferred capital grants released to income	(24.7)	(29.4)
Investment income	(15.0)	(13.3)
Loss on disposal of fixed assets	–	0.3
Fair value loss on revaluation of fixed asset investments	3.4	0.5
Increase in stock option obligation	0.1	–
Interest payable	6.1	6.5
Increase in stocks	(0.1)	–
Increase in debtors	(32.4)	(0.3)
Increase in creditors	39.5	22.6
(Decrease)/increase in provisions	(5.1)	6.4
Net cash inflow from operating activities	57.9	54.4

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	Balance 1 Aug 2009 £m	Cash flow £m	Balance 31 Jul 2010 £m
25. Analysis of changes in net funds			
Cash at bank and in hand	22.8	73.4	96.2
Endowment assets	20.0	(3.5)	16.5
Bank overdraft	(2.0)	(1.7)	(3.7)
	40.8	68.2	109.0
Short-term investments	160.3	(80.7)	79.6
Debt due within one year	(1.9)	(3.9)	(5.8)
Debt due after one year	(171.3)	5.8	(165.5)
	27.9	(10.6)	17.3

Short-term investments represent deposits with terms of up to 12 months.

	2010 £000	2009 £000
26. Access funds		
Balance at start of the year	3	53
Funding Council grants	127	145
Interest earned	–	2
	130	200
Disbursements	(122)	(197)
Balance unspent at end of the year	8	3

Funding Council grants are available solely for students and the College acts only as a paying agent. The grants and related disbursements are therefore excluded from the income and expenditure account.

	Note	Balance 1 Aug 2009 £m	Movements in year £m	Balance 31 Jul 2010 £m
27. Fixed asset investments				
Subsidiary undertakings' investments		38.4	6.5	44.9
Other investments		14.1	5.1	19.2
Other fixed asset investments	12	52.5	11.6	64.1
Investments in associated undertakings		0.6	0.1	0.7
Fixed asset investments	12	53.1	11.7	64.8

28. Minority interest

The minority interest relates entirely to Imperial Innovations Group plc. In January 2010 Imperial Innovations Group Plc issued 2.2 million new shares as a result of which the Group's percentage investment decreased from 52.3% to 50.4% (see note 29).

	2010 £m	2009 £m
Balance at 1 August	31.4	33.3
Profit/(loss) after tax and minority interest	0.9	(1.6)
Revaluation of investments within fixed assets	(0.8)	(0.3)
Movement in share based payment reserve	(0.1)	–
Stock option exercise	0.1	–
Gain on deemed disposal	1.2	–
Balance at 31 July	32.7	31.4

29. Exceptional items	2010 £m	2009 £m
Exceptional loss on the deemed disposal of interest in a subsidiary undertaking	(1.2)	–
	(1.2)	–

In January 2010, a subsidiary of the College, Imperial Innovations Group Plc, issued 2.2 million new shares as a result of which the Group's percentage investment decreased from 52.3% to 50.4%. The Group recorded a loss of £1.2 million in respect of the deemed disposal.

30. Capital commitments	Consolidated and College	
	2010 £m	2009 £m
Capital commitments for major building projects contracted at 31 July	45.3	39.8

31. Contingent assets and liabilities

On 18 December 2008 the Group divested its holding in Thiakis Ltd. Under the sale agreement, the Group could receive deferred consideration on the achievement of certain milestones. The fair value of the consideration receivable is estimated to be in the region of £5.7 million (2009: £6.3 million). No amounts have been recognised in these financial statements in relation to this potential asset.

On 7 August 2009 the College signed an agreement to enter into a rental guarantee to one of its associates, Winstanley 2 Ltd, over 452 bed spaces in a postgraduate accommodation development at Clapham Junction for a minimum of 15 years from January 2012. The present value of the maximum potential liability to the College arising under this guarantee is estimated at approximately £43 million.

As at 31 July 2010, the College has also provided a *carnet de passage* up to the value of £450,000 for the Imperial Racing Green electric supercar as it undertakes an epic pan-American journey from Alaska to Argentina.

No amounts have been provided for as at 31 July 2010 in these financial statements in respect of these guarantees.

32. Pension schemes

The College participates in four separate, independently managed, defined benefit, occupational pension schemes, which are contracted out of the State Second Pension (S2P); each is valued by professionally qualified and independent actuaries, triennially except the NHS scheme which is quadrennially. The USS, SAUL and NHS pension schemes are multi-employer schemes and it is not possible to identify the College's share of the underlying assets and liabilities of the schemes on a consistent and reasonable basis and hence, as required by FRS 17, contributions to the schemes are accounted for as if they were defined contribution schemes. As a result, the amounts charged to the income and expenditure account represent the contributions payable to the schemes in respect of the accounting period. Both USS and SAUL are 'last man standing' schemes wherein in the event of the insolvency of any of the participating employers, the amount of any pension funding shortfall (which cannot otherwise be recovered) in respect of that employer will be spread across the remaining participant employers and reflected in the next actuarial valuation.

Imperial Innovations Group plc and Imperial Consultants Ltd, subsidiaries of the College, operate defined contribution pension schemes for their employees with contributions being charged to the income and expenditure account in the period to which they relate.

It was announced in the Budget on Tuesday 22 June 2010 that the Government will adopt the Consumer Price Index (CPI) for the indexation of public service pensions from April 2011. This will have an impact upon the future operation of the pension schemes.

USS

Staff paid on academic and academic-related scales, who are otherwise eligible, can acquire pension rights through the Universities Superannuation Scheme (USS), which is a national scheme administered centrally for UK universities. USS has over 135,000 active members and as at 31 March 2010 the College had 3,179 active members participating in the scheme.

The assets of the scheme are held in a separate trustee-administered fund. At the latest valuation as at 31 March 2008, which was carried out using the projected unit method, the market value of the assets of the scheme was £28,842.6 million and the value of the past service liabilities was £28,135.3 million, indicating a surplus of £707.3 million. The assets therefore were sufficient to cover 103% of the benefits which had accrued to members after allowing for expected future increases in earnings. The actuary also valued the scheme on a number of other bases as at the valuation date.

Under the Pension Protection Fund regulations introduced by the Pensions Act 2004 the scheme was 107% funded; on a buy-out basis the assets would have been approximately 79% of the amount necessary to secure all the USS benefits with an insurance company; and using the FRS 17 formula as if USS was a single employer scheme, using an AA bond discount rate of 6.5% per annum based on spot yields, the actuary estimated that the funding level at 31 March 2008 was 104%.

Since 31 March 2008 global investment markets have continued to fall and at 31 March 2010 the actuary has estimated that the funding level under the new scheme specific funding regime had fallen from 103% to 91%. On the FRS 17 basis, using an AA bond discount rate of 5.6% per annum based on spot yields, the actuary estimated that the funding level at 31 March 2010 was 80%. An estimate of the funding level measured on a buy-out basis at that date was approximately 57%.

The College contribution rate required for future service benefits alone at the date of valuation was 14% of pensionable salaries and the trustee company, on the advice of actuary, agreed to increase its contribution rate to 16% of pensionable salaries from 1 October 2009.

The next formal triennial actuarial valuation is due as at 31 March 2011. The contribution rate will be reviewed as part of each valuation and may be reviewed more frequently.

SAUL

The College participates in the Superannuation Arrangements of the University of London (SAUL), a centralised defined benefit scheme for all eligible employees with the assets held in a separate Trustee-administered fund. The College has now adopted FRS 17 for accounting for pension costs. It is not possible to identify the College's share of the underlying assets and liabilities of SAUL. Therefore contributions are accounted for as if SAUL were a defined contribution

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scheme and pension costs are based on the amounts actually paid (i.e. cash amounts) in accordance with paragraphs 8–12 of FRS 17. The last available valuation was carried out as at 31 March 2008 using the projected unit credit method in which the actuarial liability makes allowance for projected earnings. As a whole, the market value of the scheme's assets was £1,266 million representing 100% of the liability for benefits after allowing for expected future increases in salaries.

Based on the strength of the Employer covenant and the Trustee's long-term investment strategy, the Trustee and the Employers agreed to maintain employer and member contributions at 13% of salaries and 6% of salaries respectively following the valuation.

A comparison of SAUL's assets and liabilities calculated using assumptions consistent with FRS 17 revealed the scheme to be in surplus at the last formal valuation date (31 March 2008). The next formal actuarial valuation is due at 31 March 2011 when the above rates will be reviewed.

NHS

Staff who have pension rights in the NHS pension scheme, on taking up a post within the College, may remain in membership of that scheme which is the nationally administered scheme for the National Health Service. The NHS pension scheme is an unfunded, defined benefit scheme that covers NHS employers, general practices and other bodies, allowed under the direction of the Secretary of State, in England and Wales. As a consequence it is not possible for the College to identify its share of the underlying scheme. Therefore, the scheme is accounted for as if it was a defined contribution scheme in accordance with FRS 17.

The scheme is subject to a full valuation every four years. The results of the latest available valuation at 31 March 2004 concluded that the scheme had accumulated a deficit of £3.3 billion as at 31 March 2004. However, after taking into account the changes in the benefit and contribution structure effective from 1 April 2008, the actuary reported that employer contributions could continue at the existing rate of 14% of pensionable pay. Up to 31 March 2008, employees paid contributions at the rate of 6% of pensionable pay. From 1 April 2008 employee contributions changed to a tiered scale from 5% up to 8.5% of their pensionable pay depending on total earnings.

An FRS 17 valuation of the scheme liability is carried out annually by the scheme actuary by updating the results of the full actuarial valuation. The valuation of the scheme liability was performed as at 31 March 2010 and is contained in the scheme actuary report, which forms part of the annual NHS pension scheme (England and Wales) Resource Account, published annually. These accounts can be viewed on the NHS Business Services Authority website.

The main features of the most recent valuations of the principal schemes, under a FRS 17 basis, are as follows:

Latest actuarial valuations	31 Mar 2008	
Assumptions		
USS scheme		
Valuation rate of return		6.4%
Salary scale increases per annum		4.3%
Pension increases per annum		3.3%
Life expectancy:		
Males (females) currently aged 65		22.8 yrs (24.8 yrs)
Males (females) currently aged 45		24.0 yrs (25.9 yrs)
SAUL scheme		
Investment return on liabilities:	31 Mar 2008 Past Service	31 Mar 2008 Future Service
Before retirement	6.9%	7.0%
After retirement	4.8%	5.0%
Salary scale increases per annum	4.85%	4.85%
Pension increases per annum	3.35%	3.35%

FPS defined benefit scheme

The Federated Pension Scheme 1634 (FPS) is the scheme St Mary's Hospital Medical School operated for non-academic staff prior to 1 August 1988, when it was closed to new entrants. Two thirds of the membership elected to transfer into SAUL at that time and there are now no contributing members. A full actuarial valuation was carried out as at 31 March 2007 and has been updated to 31 July 2010 by a qualified independent actuary.

Figures for prior years have been restated to reflect the fact that certain annuity contracts were purchased in the names of individual members rather than under the names of the Trustees of the scheme. Whereas previously assets and pensions liabilities relating to these members were shown gross, in the disclosures below they have been restated to show the net liability position for these members. The restatement has no impact on the figures included within the consolidated financial statements.

The main assumptions used for the purposes of FRS 17 are (in nominal terms):

Assumptions	2010	2009
Price inflation per annum	3.40%	3.75%
Salary inflation per annum	N/A	N/A
Rate of increase to pensions in payment at the LPI rate	3.20%	3.40%
Rate used to discount scheme liabilities	5.40%	6.00%
RPI	3.40%	3.50%
Post retirement mortality assumption	PxA92(b=yob)mc	PxA92(b=yob)mc

The assets in the scheme and the expected rates of return	Rate of return		Market value	Restated market value
	2010	2009	£m	£m
Equities	5.00%	6.00%	1.5	2.8
Property and infrastructure	–	6.00%	–	0.3
Gilts	4.30%	4.50%	0.8	1.2
Corporate bonds	4.30%	6.00%	3.3	0.9
Insured annuity contracts	5.40%	6.00%	1.9	1.9
Total fair value of assets			7.5	7.1

Reconciliation of the present value of scheme liabilities and fair value of assets to the asset recognised in the Balance Sheet	2010 £m	Restated 2009 £m
Fair value of assets	7.5	7.1
Value of liabilities	(6.2)	(6.0)
Funded status	1.3	1.1
Unrecognised pension asset	1.3	1.1

Amounts included within operating profit	2010 £m	Restated 2009 £m
Current service cost	–	–
Total operating charge	–	–

The amounts to be included as other finance income	2010 £m	Restated 2009 £m
Expected return on scheme assets	0.4	0.5
Interest on scheme liabilities	(0.3)	(0.4)
Effect of restriction on expected return	(0.1)	(0.1)
Net finance return	–	–

Changes in the present value of the defined benefit obligation	2010 £m	Restated 2009 £m
Opening defined benefit obligation	(6.0)	(6.4)
Interest cost on obligation	(0.3)	(0.4)
Actuarial (loss) /gain on obligation	(0.3)	0.3
Benefits paid	0.4	0.5
Closing defined benefit obligation	(6.2)	(6.0)

Notes to the accounts

Changes in the present value of scheme assets	2010 £m	Restated 2009 £m
Opening fair value of assets	7.1	7.9
Expected return	0.4	0.5
Actuarial loss	0.4	(0.8)
Benefits paid	(0.4)	(0.5)
Closing fair value of scheme assets	7.5	7.1

Total amounts recognised in the Statement of total recognised gains and losses (STRGL)	2010 £m	2010 £m	Restated 2009 £m	Restated 2009 £m
Pension scheme asset at start of year		-		-
Actuarial (loss) /gain on assumptions	(0.3)		0.3	
Actuarial loss on experience	-		-	
Actuarial loss on assets	0.4		(0.8)	
Surplus restriction	(0.2)		0.4	
Effect of restriction on expected return	0.1		0.1	
STRGL losses		-		-
Pension scheme asset at end of year		-		-

Actual return on scheme assets	2010 £m	Restated 2009 £m
Expected return on scheme assets	0.4	0.5
Actual return on scheme assets	0.8	(0.3)
Actual less expected return on scheme assets	(0.4)	0.8

Amounts for the current and previous four periods	2010 £m	Restated 2009 £m	Restated 2008 £m	2007 £m	2006 £m
Fair value of scheme assets	7.5	7.1	7.9	10.8	10.8
Value of liabilities (funded obligation)	(6.2)	(6.0)	(6.4)	(8.4)	(8.9)
Surplus	1.3	1.1	1.5	2.4	1.9
Experience loss on liabilities	-	-	(0.2)	-	(0.1)
Experience gain/(loss) on assets	0.4	(0.8)	(0.4)	-	0.1

The pension costs for the College and its subsidiaries under SSAP 24 were:	2010 £m	2009 £m
Contributions to USS	24.9	21.7
Contributions to SAUL	5.9	6.0
Contributions to NHS	4.4	4.1
Contributions to defined contribution pension schemes	0.3	0.3
	35.5	32.1

33. Funding of fixed assets (£m)

Land and buildings at cost	Balance 1 Aug 2009	Additions/(disposals) during the year				Balance 31 Jul 2010
		HEFCE grants	Other grants/ donations	College reserves	Transfers	
Land	12.9	(1.0)	(3.3)	31.4	–	40.0
Buildings						
Freehold						
South Kensington Campus	233.0	0.5	0.2	2.5	79.2	315.4
Charing Cross Campus	7.1	–	–	–	–	7.1
Hammersmith Campus	–	–	–	–	–	–
St Mary's Campus	36.4	–	–	–	0.1	36.5
Royal Brompton Campus	10.8	–	–	–	–	10.8
Silwood Park Campus and outstations	25.7	–	–	0.1	1.0	26.8
Wye Campus	13.7	–	–	0.4	0.1	14.2
Clayponds	11.0	–	–	–	–	11.0
	337.7	0.5	0.2	3.0	80.4	421.8
Leasehold						
South Kensington Campus	227.6	0.1	–	3.2	11.4	242.3
Charing Cross Campus	33.9	–	–	–	–	33.9
Hammersmith Campus	100.2	1.5	2.4	(2.6)	7.3	108.8
St Mary's Campus	10.7	–	(0.3)	0.2	–	10.6
Royal Brompton Campus	0.3	–	–	–	–	0.3
Evelyn Gardens	16.3	–	–	–	–	16.3
	389.0	1.6	2.1	0.8	18.7	412.2
Buildings under construction	130.0	59.7	3.1	(0.7)	(99.1)	93.0
Total land and buildings	869.6	60.8	2.1	34.5	–	967.0
Represented by:	Balance 1 Aug 2009	Additions during the year	Disposals during the year	Transfers during the year	Balance 31 Jul 2010	
Grants from HEFCE	319.4	61.8	–	(1.0)	380.2	
Other grants/donations	128.4	5.4	–	(3.3)	130.5	
Capital expenditure met from reserves	421.8	30.4	(0.2)	4.3	456.3	
	869.6	97.6	(0.2)	–	967.0	
Equipment at cost	Balance 1 Aug 2009	Additions during the year	Disposals during the year	Balance 31 Jul 2010		
Funded from HEFCE grants	48.4	0.2	(0.2)	48.4		
Funded from research grants and contracts	42.8	9.6	(0.9)	51.5		
Funded from other grants/donations	1.9	0.1	(0.7)	1.3		
Funded from reserves	69.7	7.2	(2.2)	74.7		
Donated assets	0.6	0.3	–	0.9		
Total equipment	163.4	17.4	(4.0)	176.8		



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