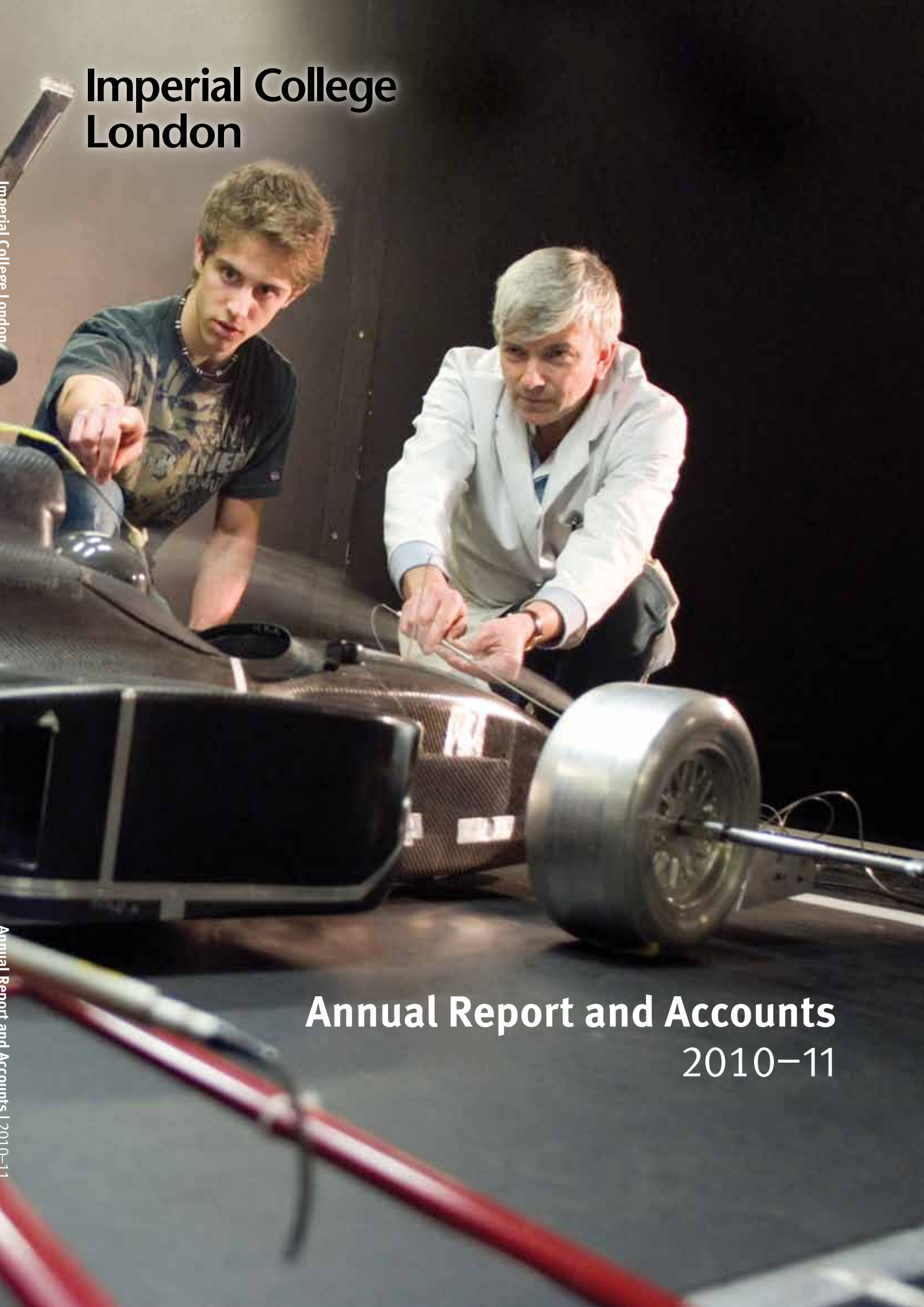


**Imperial College  
London**

Imperial College London

Annual Report and Accounts | 2010-11

**Annual Report and Accounts  
2010-11**



## 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:

*Undergraduate student, Gilbert, from the Department of Aeronautics, prepares a test with a member of staff in the Honda wind tunnel at the College.*

# Rector's foreword

2



Last year's foreword began with a note of caution on the wider world in which Imperial operates. At that time, there were significant questions to be answered about how English universities would be financed and regulated, following the coalition government's spending review and Lord Browne's report on higher education funding and student finance. Twelve months on, this picture is much clearer.

Following the government's decision to raise the ceiling on tuition fees paid by students from the UK and the European Union, Imperial announced in February 2011 that it would set its fees at £9,000 from 2012 subject to approval from the Office of Fair Access. When this was given in July, the College announced a distinctive package of financial support – acknowledged as the most generous in the Russell Group – which offers up to £6,000 per year for those UK students most in need, and operates on a sliding scale for household incomes up to £60,000. While raising fees to £9,000 has been necessary to maintain our quality in response to the reduction in government funding, this package will ensure that all those with demonstrated ability to manage Imperial's courses have the support they need to help manage its costs. We worked closely with our students' union and we believe the combination of tuition fee waiver and bursary is both attractive and reassuring to prospective students. We shall monitor closely the impact of both the rise in fees and our package of support to ensure that no prospective student is deterred from applying to the College.

In this new era of funding, the role of philanthropy has never been more important. This year we have increased the number of donors by 108%. One particular success to highlight is the recent appeal in support of the Rector's Scholarship Fund, in which 1,835 donors raised more than £270,000. Thanks to these and other generous gifts, we have been able to provide an additional 31 undergraduate scholarships, eight Master's scholarships and a PhD scholarship.

Essential to that fundraising success has been the support of our international alumni. Over the past 12 months I've had the pleasure to meet alumni at our associations in Singapore, Hong Kong, Kuala Lumpur, Beijing, New York, and Toronto, and my first visit to our Indian alumni took place in November 2011. Despite the geographical distance between them, they all shared, and showed, their affection for Imperial and the experiences they had here. These visits also allowed us to strengthen our strategic relationships with supporters and potential partners, and I am confident that 2012 will see tangible outcomes of these.

Another concern we faced this time last year was how funding for science would fare in the spending review. The news that the science budget would be protected was a welcome light amongst the general financial gloom although there are still uncertainties with regard to future research council funding. One notable institutional success should be highlighted in this respect.

The College and Imperial College Healthcare NHS Trust were successful in our bid to the National Institute for Health Research to renew our Biomedical Research Centre funding to the tune of £112 million. An award also went to our partnership with the Royal Brompton and Harefield NHS Foundation: the two Biomedical Research Units there received a grant of almost £20 million, supporting their research into challenging lung and heart conditions.

Looking further afield to Asia, this year has seen significant progress in the development of a new medical school in Singapore, in partnership with Nanyang Technological University (NTU). A S\$150 million donation from the Lee Foundation will be used to establish two endowments for student support and advancing medical education and, in recognition of the gift, the new medical school at NTU has been named the Lee Kong Chian School of Medicine. A recent independent review of curriculum development found that the course was on track to meet the requirements of the School's first intake in 2013 and well ahead in some areas. It praised the team behind the curriculum for its commitment and experience, and applauded the excellent facilities and resources that the School will offer.

In April 2011, I signed a new Memorandum of Understanding with a consortium of universities in Taiwan, which will provide opportunities for Taiwanese students to take their PhDs at Imperial, and will support joint research projects and research visits to Taiwan by Imperial academics, building on our strong existing links with the country.

Closer to home, we continue to play an important part on the European stage through our role as a lead partner in the EU's European Institute of Innovation and Technology Climate Knowledge and Innovation Community (otherwise known as Climate-KIC). This brings together the best European institutions and companies from the academic, corporate and public worlds with longstanding expertise in addressing the climate challenges we face today. Our central role here emphasises our reputation within the European research area, and we shall continue to explore the opportunities offered by our nearest neighbours.

In October 2011, Imperial joined the partners behind a new world-leading medical research initiative, the Francis Crick Institute, which is currently being built in north London. Bringing biologists, chemists, physicists, engineers, computer scientists and mathematicians together with some of the UK's leading hospitals, it will focus on understanding the underlying causes of health and disease in new ways. When the institute opens in 2015, Imperial scientists and engineers will be working there with scientists in other disciplines and from other institutions, on a scale we haven't seen before, to explore how we can improve health. It is an exciting venture for all the partners involved, for London and for UK science.

At a time when many in the HE sector are retracting, we continue to invest in excellence in terms of our people and our facilities. The Imperial College Lectureships Scheme has recruited 10 new lecturers across 10 departments. The level of applications was outstanding, demonstrating Imperial's continued ability to attract and develop some of the world's best teaching and research talent.

We have further invested in our buildings and infrastructure through the £37 million refurbishment of the Mechanical Engineering laboratories, and the decision to add additional floors to the ACE extension building will allow for the expansion of the Business School's activities. 2012 will also see the opening of the new research building located at our Hammersmith Campus, which will be a flagship facility for Imperial's Academic Health Science Centre, integrating patient-centred research with translational science activity. New purpose-built postgraduate accommodation has opened in Clapham Junction, with more to follow next year, as part of the redevelopment of our Wood Lane site. This represents phase one of our plans to develop a new campus in west London, currently known as Imperial West.

The second phase of our Masterplan for Imperial West was submitted for planning consideration in December 2011, and outlined the construction of significant research and teaching space to provide capacity to consolidate and expand our current activities. The mixed-use development will also offer space to accommodate our technology transfer activities, offering space to entrepreneurs as they grow new business. On completion, Imperial West will be embedded within the local community, offering a new health centre, shops, restaurants, community room and a hotel, as well as creating 2,500 new jobs during construction and operation.

Our achievements continue to be recognised by those outside the College and this year we have secured top 10 rankings in both the *THE World University Rankings* and the *QS World University Rankings*. Yet we also look closely at the feedback our students have given us on their time at the College and improving the student experience is among my priorities for the coming year. The 2011 National Student Survey results were published over the summer and we are listening to where they tell us we can improve. We will need to put a spotlight on specific areas, particularly the way we give students feedback about their work. Providing an exceptional student experience to a very diverse student community is a complex task, but the passion exists across the College to make it as good as it can possibly be.

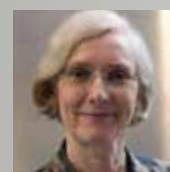
After more than six years' steering, scrutinising and supporting our work, John Kerr stood down as Chairman of the Imperial College Council. He led us through a period of considerable change, not least of which was the granting of the new Supplemental Charter that established Imperial as an independent university in our Centenary year, 2007. He deserves our heartfelt thanks for all that he has achieved. He was succeeded in July 2011 by Baroness Manningham-Buller, former Director General of the Security Service, and her appointment as our Chair is an honour for the College. Her outstanding leadership skills will be an invaluable asset to Imperial.

This year has seen a number of changes to our Management Board. Professor Mary Ritter retired as Pro Rector (International); Professor Stephen Smith, Principal of the Faculty of Medicine and Chief Executive of Imperial College Healthcare NHS Trust, stood down to concentrate on his role as Founding Dean of the Lee Kong Chian School of Medicine; and Claire Perry, Imperial College Healthcare NHS Trust Managing Director, began a secondment to the King's Fund. I thank them all for their outstanding contributions to the management of the College during a particularly turbulent time for higher education.

In their place we welcome: Professor Jeff Magee, Principal of the Faculty of Engineering; Professor Sir Anthony Newman Taylor, Principal of the Faculty of Medicine; Professor Donal Bradley, Pro Rector (Research); Dr Simon Buckle, Pro Rector (International Affairs); Muir Sanderson, Chief Financial Officer; and Mark Davies, Chief Executive, Imperial College Healthcare NHS Trust.

In 2012, the world's Olympians arrive not just in London but in our part of it, when we will be playing host to athletes from the Japanese and Swiss teams on the South Kensington Campus. Preparations around the College have been ongoing this year, and will continue to gather pace in the run up to the opening ceremony. Every member of staff and each student carries the torch of Imperial's success and reputation, and the 2010–11 Annual Report and Accounts reflects a small selection of their dedicated efforts.

Sir Keith O'Nions, Rector



MANAGEMENT BOARD  
2010–11  
(left to right, top to bottom)

- » Sir Keith O'Nions, Rector
- » Professor Stephen Richardson, Deputy Rector and Principal, Faculty of Engineering (until 31 December 2010), Deputy Rector (From 1 January 2011)
- » Professor Jeff Magee, Principal, Faculty of Engineering (From 1 January 2011)
- » Professor Maggie Dallman, Principal, Faculty of Natural Sciences
- » Professor Stephen Smith, Principal, Faculty of Medicine and Chief Executive, Imperial College Healthcare NHS Trust (until 31 November 2010), Pro Rector (Health) (from 1 December 2011)

- » Professor Sir Anthony Newman Taylor, Principal, Faculty of Medicine (from 1 December 2010)
- » Professor David Begg, Principal, Imperial College Business School
- » Dr Martin Knight, Chief Operating Officer (until 31 December 2010)
- » Mr Andrew Murphy, Acting Chief Financial Officer (from 1 January 2011)
- » Mr Edward Astle, Pro Rector (Enterprise)
- » Professor Julia Buckingham, Pro Rector (Education and Academic Affairs)
- » Professor Mary Ritter, Pro Rector (International)
- » Dr Rodney Eastwood, College Secretary and Clerk to the Court and Council
- » Ms Claire Perry, Managing Director, Imperial College Healthcare NHS Trust (until 30 April 2011)
- » Mr Mark Davies, Chief Executive, Imperial College Healthcare NHS Trust (from 1 May 2011)

# Financial review

## RESULTS FOR THE YEAR – KEY HIGHLIGHTS

As the new Chief Financial Officer of Imperial College London, I am very fortunate not just to be joining a world class institution, but also to be inheriting a well thought through and well managed financial position. My thanks must go to Dr Martin Knight and Mr Andrew Murphy for their far-sighted leadership and careful stewardship in achieving this. As the results show, they have helped put the College in a strong position, with the appropriate resources to continue investing for the future whilst guarding against the vagaries of the present. This is an approach we will continue in the future.

The financial position of the College continues to be very healthy and has strengthened over this financial year, providing a very sound platform for the College going forward.

The College's consolidated income and expenditure for the year to 31 July 2011 and the net cash position at that date are summarised below.



Mr Muir Sanderson  
Chief Financial Officer

<b>Income and expenditure summary</b>	<b>2011</b>	2010	Change
	<b>£m</b>	£m	%
Total income (including share of joint ventures)	<b>705.0</b>	694.0	1.6
Less: share of joint venture income	<b>(0.8)</b>	(0.8)	
Share of (losses)/profits from associates and joint ventures	<b>(1.8)</b>	0.3	
Total expenditure	<b>(660.4)</b>	(651.2)	1.4
Surplus on continuing operations	<b>42.0</b>	42.3	-0.7
Tax and minority interest	<b>1.2</b>	(0.9)	
Surplus before exceptional items	<b>43.2</b>	41.4	4.3
Exceptional income from sale of fixed assets	<b>18.2</b>	–	
Exceptional profit/(loss) on deemed disposal of interests in a group undertaking	<b>32.7</b>	(1.2)	
Surplus on continuing operations after exceptional items	<b>94.1</b>	40.2	134.1
Use of accumulated income within specific reserves	<b>0.6</b>	1.1	-45.5
Surplus for the year	<b>94.7</b>	41.3	129.3
	<b>2011</b>	2010	Change
	<b>£m</b>	£m	£m
<b>Capital expenditure</b>			
Externally funded	<b>43.6</b>	77.4	(33.8)
College funded	<b>33.3</b>	37.6	(4.3)
	<b>76.9</b>	115.0	(38.1)
<b>Cash and borrowings</b>			
Cash and short term investments	<b>260.5</b>	188.6	71.9
Long term borrowings	<b>(165.5)</b>	(171.3)	5.8
	<b>95.0</b>	17.3	77.7

The key highlights for the year are:

- Income increased by 1.6% over 2009–10 to £705 million. With expenditure roughly in line with income despite the upward cost pressures, the surplus on continuing operations remained flat at £42 million.
- There are two main exceptional items contained in the accounts this year, totalling £51 million. By their very nature they are one-off items, both relating to investment actions, and are the impact of the rights issue by Imperial Innovations Group plc ('Imperial Innovations') in January 2011 and the sale of a 150-year lease on land at Imperial West.
- The surplus for the year is £95 million.
- Capital expenditure has reduced this year, as was outlined in last year's report, to a gross figure of £77 million, of which the College share was £33 million.

- The net cash position of the College has strengthened to a healthy £95 million, an increase of £78 million in the year, with long term borrowings of £166 million and cash and short term investments of £261 million. The balance sheet continues to strengthen with the long term debt as a percentage of net assets reducing during the year from 23% to a 20%.

These results need to be taken in context and viewed against the changing university funding environment with the reductions in the level of government grants. The College will continue to examine rationally and clinically its position and the future environment and act accordingly; indeed we are now seeing the benefits of the management actions taken over the last few years. It is College strategy to be financially sustainable and the generation of an annual surplus to enable investment for the future is a key component. This is even more critical in an environment where the College will be required to fund a greater proportion of this investment from its own resources as government funding reduces.

## INCOME

Compared to the previous year, income to the College rose by 1.6%:

- Research income, at £299 million, is the largest source of income for College and increased by just under 1% over the year. Most of the income was matched by directly related expenditure, although the contributions towards overhead costs remained unchanged on the prior year at £55 million.
- Funding Council grants, primarily from the Higher Education Funding Council for England (HEFCE), which represent the second highest source of income for College, have fallen for the second year in a row.

- Academic fees and support grants increased by 14%, including a 17% increase in overseas student fees. This reflects higher student numbers, the annual fee increases and a change in the mix of student numbers on courses attended.
- Other operating income rose by 5.2% primarily due to increases in the income from residences, catering and conferences.

Income analysis	2011 £m	2010 £m	Change %
Funding Council grants	168.6	172.2	-2.1
Academic fees and support grants			
Home and EU students (full-time)	32.9	31.3	5.1
Overseas students	88.2	75.1	17.4
Other	16.8	14.5	15.9
	137.9	120.9	14.1
Research income			
UK research councils	102.7	104.4	-1.6
UK charities	68.7	70.2	-2.1
UK industry	18.2	19.6	-7.1
European Union and overseas	65.2	63.3	3.0
Other	44.4	39.3	13.0
	299.2	296.8	0.8
Other operating income	93.7	89.1	5.2
Endowment and investment income	5.6	15.0	-62.7
Less: share of joint venture income	(0.8)	(0.8)	0.0
Total income	704.2	693.2	1.6

## EXPENDITURE

College's expenditure increased by 1.4%. Staff costs are the largest item, representing 55% of the total expenditure, and have increased by 1.6% in the year to £364 million. Staff numbers have grown by roughly the same amount, with the majority of the increase coming in the Research and Education staff group. Other operating expenses totalled £243 million, 0.7% higher than in the prior year. However, included within this figure for 2010–11 is a one-off charge of £20.1

million for an increase in the decommissioning provision for the College's specialist engineering facility. Excluding this amount, other operating costs fell by 7.7%. The major factors explaining the decrease include a reduction in non staff expenditure on research grants and contracts, lower facilities and maintenance costs and lower central support services expenditure. This reduction is in line with the ongoing strategy to maximise efficiency and control the administrative cost base.

## SEGMENTAL ANALYSIS

The consolidated position discussed above comprises the three main segments within the College: the University (being the core academic function and associated activities), the College Fund (the pool of endowment and investment assets managed with an investment focus to support the long-term academic mission) and Imperial Innovations which focuses on the exploitation of intellectual property emanating from the College. The relative performance of each segment as included under the accounting treatments employed in the consolidated financial statements is outlined below. It should be noted that following Imperial Innovations' successful completion of an equity raise of £140 million (before issue costs) in the form of

a rights issue in January 2011, the College's holding in the company has been diluted from 50.4% to 30.3%. Consequently the figures for Imperial Innovations included in the table below and in the consolidated financial statements have been fully consolidated until 24 January 2011, but equity accounted for as an associate thereafter. The College consolidated accounts also include Imperial Innovations' figures prepared under UK GAAP, whereas Imperial Innovations has to abide by IFRS rules for its own reporting purposes. This leads to an operating loss for the year in these consolidated accounts rather than the profit reported in Imperial Innovations' own results (£3.7 million loss vs £0.6 million profit) and a lower net asset value.

Segmental information	University (education and research)	College Fund	Imperial Innovations Group plc	Total 2011	University (education and research)	College Fund	Imperial Innovations Group plc	Total 2010
	2011 £m	2011 £m	2011 £m	2011 £m	2010 £m	2010 £m	2010 £m	2010 £m
Operating surplus	41.6	4.1	(3.7)	42.0	36.7	3.1	2.5	42.3
Total fixed assets	771.4	89.9	58.7	920.0	741.8	81.8	44.9	868.5
<b>Net debt</b>								
Cash in hand	120.3	7.9	–	128.2	80.2	6.8	9.2	96.2
Overdrafts	–	–	–	–	(3.7)	–	–	(3.7)
Short term investments	115.0	–	–	115.0	65.0	–	14.6	79.6
Cash in endowment assets	0.1	17.2	–	17.3	–	16.5	–	16.5
Total cash and short term investments	235.4	25.1	–	260.5	141.5	23.3	23.8	188.6
Borrowings	(136.8)	(28.7)	–	(165.5)	(123.8)	(47.5)	–	(171.3)
Total net cash/(debt)	98.6	(3.6)	–	95.0	17.7	(24.2)	23.8	17.3

The University is the largest segment, comprising 99% of income.

The College Fund remains very much in a growth mode, with an increased emphasis on diversification of risk as the Fund gets larger. The Unitised Scheme, representing the pool of unrestricted, liquid assets within the Fund, grew by 36% during the year to £100 million. This included £13 million from new donations and endowments and £5.6 million realised from the Imperial Innovations rights issue. The underlying investment return of 14.1% for the year was again very strong, given the challenging market conditions. The overall growth in the market value of the College Fund was 4% to £310 million. Compared to these market values, the consolidated accounts incorporate total College Fund net assets at a value of approximately £144 million.

Imperial Innovations continues to progress and shows a strengthening balance sheet with net assets of £224 million increasing by £133 million over the year, as reported in its own financial statements. The lower profits (or losses under UK GAAP) compared to a profit in the prior year reflect higher level of gains arising from realisations last year whereas this year Imperial Innovations has focused on consolidating and building its portfolio of investments. The rights issue ensures that the company is fully funded to implement its augmented business model, and the technology pipeline remains strong. Supported by its collaborations with Cambridge Enterprise, Oxford Spin-out Equity Management and UCL Business, Imperial Innovations has started

to use the funds raised to invest in companies emanating from UCL and Cambridge and increasing the rate of investment in its existing portfolio. Imperial Innovations invested £35 million during the year. The 2010–11 financial year has laid the foundations for the next stage of Imperial Innovations' progress.

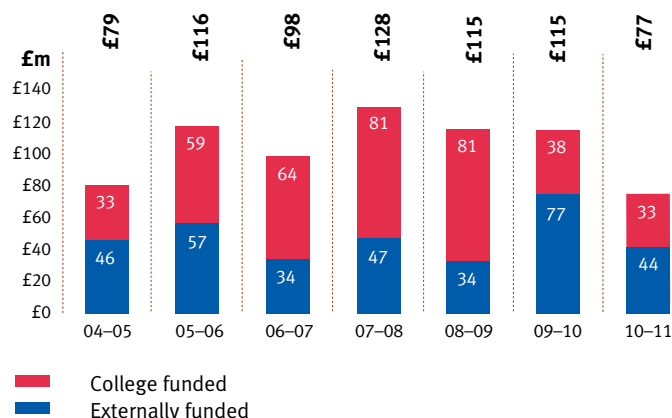
## EXCEPTIONAL ITEMS

There are two main exceptional items in this year's accounts. Both relate to investment activities:

- In January 2011 Imperial Innovations raised net proceeds of £135 million from a two for three rights issue in which the College did not take up its rights. As a consequence the College's shareholding in Imperial Innovations fell from 50.4% to 30.3%. Therefore from 24 January 2011 Imperial Innovations is no longer consolidated as a subsidiary but is accounted for as an associate undertaking. The College sold no shares and so realised no cash directly but the reduction in share holding has led to a deemed disposal profit in the accounts. The College did however sell warrants over its rights to a third party for net proceeds of £5.6 million.
- The College, through the College Fund, sold a 150-year lease over land at the Imperial West site for cash proceeds of £22 million and generating a profit on disposal of £18.2 million.



## CAPITAL EXPENDITURE



The College continues to undertake an ongoing capital programme, although the level has been reduced this year following the conscious decision to scale back the programme over the last two years. It is worth noting that the level of external funding of capital has reduced from £77 million in the prior year to £44 million in this, which reflects the move towards a lower level of ongoing capital support that will be provided from government in the years to come. In the future the College will need to fund a greater proportion of the capital expenditure itself than has been the case in the past. The only significant College project ongoing at present remains the medical research building at the Hammersmith Campus that is due to be completed during the 2011-12 financial year. The College will continue with the ongoing refurbishment of buildings across the estate and in particular at the South Kensington Campus, specifically the refurbishment of the Mechanical Engineering laboratories and additional floors to the ACE extension, and is also working on the future development plans for the Imperial West site.

## CASH FLOW

There has been a net funds inflow in the year of £78 million, which leaves the College with a very healthy net cash position of £95 million at the year end. The cash inflow primarily reflects the level of operating surplus, continued active working capital management by the College, the reduced capital expenditure in the year and the cash realised on the sale of the 150-year lease at Imperial West.

Cash flow summary	2011 £m	2010 £m
Net cash inflow from operating activities	120.1	57.9
Returns on investments and servicing of finance	0.1	1.5
Capital expenditure	(75.2)	(117.4)
Purchase of fixed and endowment asset investments	(27.4)	(28.2)
Receipts from disposals of fixed assets, fixed assets investments and endowment assets	27.2	14.7
Deferred capital grants received	32.9	59.1
Endowments received	9.6	1.8
Acquisitions and disposals	(3.4)	0.1
Management of liquid resources	(41.6)	80.7
Net mortgages and loans repaid	(5.8)	(1.9)
Settlement of options	-	(0.1)
Increase in cash	36.5	68.2
Increase/(decrease) in short-term investments	35.4	(80.7)
Loan repayments	5.8	1.9
Change in net funds	77.7	(10.6)

## FUTURE FINANCIAL CHALLENGES

Although the College is in a very sound financial position there remain a number of financial risks and uncertainties on the horizon:

- The full extent and impact of government funding cuts, particularly from 2012 and beyond.
- Reductions in research council funding, and in particular the impact of the ongoing squeeze on the contribution to overheads paid and reduced capital equipment funding.
- Pressures on the cost base, particularly if we enter a period of sustained inflation.
- The potential increasing cost of pensions.
- The impact on the College, through our relationships, of government cuts in NHS funding.
- The ability to attract and retain the best students from the UK, Europe and around the world.
- The ongoing volatility in the investment markets.

## IN CONCLUSION

The College finances are healthy and provide a very good base on which to face the future challenges. The outlook around government financing remains uncertain, although the mechanisms of the new student fee regime have now emerged. Imperial will charge £9,000 per annum to our home and EU students but will offer a generous package of student support to ensure those students who have demonstrated the ability to manage Imperial's courses have the support they need to help manage its costs. It is clear that the College will need to fund a greater proportion of future investment from its own sources. However, the College has already taken many steps to meet these challenges and put itself in a sound financial position to embrace the future with optimism.

Muir Sanderson  
Chief Financial Officer

### Enabling ability

Sophie started at Imperial in October 2011, studying mathematics. She received a scholarship funded by donations to the Rector's Scholarship Fund. For more information see *Current students benefit from generous donations* on the next page. Sophie said: "As an Imperial undergraduate, I believe I will be equipped with the best skills and degree possible to compete in the modern workplace. Your kind donations will help me to pay for the books and equipment necessary to keep up in this rapidly developing science. I feel determined to do everything I can to prove I am deserving of a place on this prestigious course and of the career that will hopefully follow."

## SINGAPORE MEDICAL SCHOOL

A new undergraduate medical school, awarding joint Imperial College London and Nanyang Technological University (NTU) degrees in Singapore, was signed in October 2010. The Lee Kong Chian Medical School, jointly managed by NTU and Imperial, sees the College developing and delivering a course overseas for the first time. The first 50-strong cohort of mainly Singaporean students will be admitted to the school in 2013. Its main aim is to train more high quality doctors to meet the needs of Singapore's healthcare system in supporting a population that is living longer.

## STOCK EXCHANGE BOOST FOR INNOVATION INVESTMENT

December 2010 saw Imperial Innovations Group plc raising £140 million on the London Stock Exchange to boost support for inventions inspired by research at the College. Imperial Innovations is the first and only university-owned commercialisation company to be publicly listed, as well as the largest UK company investing in university inventions. It supports Imperial's academic staff in the translation of their ideas and discoveries to the commercial market through licensing or by establishing new companies. The funds will accelerate the number and size of investments, enabling spin-outs to achieve their commercial goals more rapidly.

## IMPERIAL JOINS SCIENTIFIC POWERHOUSE

Imperial has joined the partners behind a new world-leading medical research organisation, the Francis Crick Institute, being built in King's Cross in London. The Institute will bring biologists, chemists, physicists, engineers, computer scientists and mathematicians together with some of the UK's leading hospitals to focus on understanding the underlying causes of health and disease in new ways. Their aim will be to prevent and treat common conditions, including cancers, heart disease and stroke, infectious diseases, disorders of the immune system, and neurodegeneration. The pioneering labs and their 1,500 staff will strengthen the UK's reputation as a world class centre of excellence for medical science, and help to maintain the country's competitiveness in science and healthcare.

## FINANCIAL SUPPORT FOR UK STUDENTS

In July 2011, Imperial announced its financial support package for UK students joining the College in 2012–13:

- A maximum of £6,000 in non-repayable support available per annum to Home students from household incomes of less than £25,000.
- Financial support available to those from household incomes up to £60,000.
- A maximum of £9,250 per student per year in non-repayable support available from the College and government sources.

The College spent £4.3 million on financial support in 2010–11; it estimates that by 2015–16 it will spend between £6–£8.4 million on financial support for UK students. Imperial also announced a significant increase in its outreach programme targeted to give disadvantaged students a better chance of achieving the academic standards in science necessary to enter the College and other selective universities.

## CURRENT STUDENTS BENEFIT FROM GENEROUS DONATIONS

A Rector's Scholarship Fund direct mail appeal in June 2011 raised over £270,000 from 1,835 donors towards scholarships and bursaries for undergraduate and postgraduate students. The generosity of our donors has enabled the College to support more philanthropically funded scholarships in 2011–12, with 85 students, including Sophie pictured opposite, receiving a scholarship funded by donations to the Rector's Scholarship Fund.

## FULL MARKS

Imperial is one of only four universities to match all 10 criteria in a checklist looking at whether university practices and policies are welcoming and supportive of lesbian, gay and bisexual (LGB) students. The *Gay by Degree Guide* is organised by Stonewall UK to provide information on what different universities are doing to address the needs of their lesbian, gay and bisexual students. The criteria include whether a university has a LGB student society, whether it offers specific advice to LGB students and whether it has a policy to protect LGB students from bullying.

## NEW CHAIR OF COUNCIL

Baroness Manningham-Buller became the new Chair of Imperial's Court and Council, succeeding Lord Kerr of Kinlochard, in July 2011. She leads the Council, Imperial's governing body and is the first woman to hold the post. Baroness Manningham-Buller served as Director-General of the Security Service from 2002–07, and was Deputy Director-General for the five previous years. She joined Imperial's Council in 2009 and became Deputy Chairman later that year.

## IMPERIAL IN STONEWALL TOP 100

For the second year running, Imperial achieved a top 100 ranking in Stonewall's 2011 Workplace Equality Index, one of only five universities in that group. The College was ranked 87th in the index, which is published annually to showcase the UK's best employers for lesbian, gay and bisexual people, based on the steps they are taking to create a work environment in which all staff feel secure and valued.

## RECTOR'S INTERNATIONAL FOCUS

Overseas visits that strengthened links with institutions, governments and alumni were a major focus for the Rector, Sir Keith O'Nions, during 2011. In the Easter break, he visited Beijing and Taiwan, meeting alumni, ministers, business and university leaders. In July, he visited New York, hosting the largest-ever Imperial alumni event to be held in the region, and Toronto. Further trips were made in August to Malaysia, where the alumni association saw a 50% rise in membership in just one evening; Hong Kong, home to one of the most active and generous alumni groups; and Singapore, which has more Imperial alumni per capita than in any other country.

## Racing ahead

Dr Gregory Offer of the Department of Earth Science and Engineering is one of nine Imperial scientists awarded Engineering and Physical Sciences Research Council Career Acceleration Fellowships in July 2010. His research is based around fuel cell, battery and supercapacitor technology and their application in transport. He is also Director of Research and Development for Imperial Racing Green, an undergraduate teaching project in which students design, build and race electric and hybrid vehicles, see *Racing Green* on page 23.



## INSTITUTE OF GLOBAL HEALTH INNOVATION

Pioneer of robotic surgery and former health minister, Professor Lord Darzi, took the helm of a new Imperial institute launched in October 2010. The Institute of Global Health Innovation aims to develop innovative approaches to global health challenges and bring together world-leading academics in medical science, engineering, business and health policy to improve people's health and reduce health inequalities in developed and developing countries.

## EXCELLENT RESEARCH TEAMS

The 2010 Research Excellence Awards recognising research teams that demonstrate high academic achievement and significant future potential were announced in October. Prizes of £100,000 for blue skies research were awarded to a Department of Earth Science and Engineering team led by Professor Christopher Pain, investigating Next Generation Computational Geophysical Fluid Dynamics, and a research team led by Dr Julia Gorelik from the National Heart and Lung Institute working on a New Nanoscale Technique to Study cAMP/cGMP Localisation in Cardiovascular Tissue.

## ACADEMICS RECOGNISED IN NEW SCIENCE RANKINGS

Eight Imperial academics were included in *The Times's* Eureka 100: the science list – a new guide to the most important contemporary figures in British science and engineering – in October 2010. The Rector, Sir Keith O'Nions, appeared at number five in the guide's top 10 academic power brokers, while Professor Molly Stevens from the Department of Materials was named one of the top 10 scientists in Britain under the age of 40.

For more on this story visit: <http://bit.ly/scienc rankings>

## NEW PRINCIPAL FOR UK'S LARGEST ENGINEERING FACULTY

Professor Jeff Magee became Principal of the Faculty of Engineering on 1 January 2011. Previously the Faculty's Deputy Principal (Research) and Head of the Department of Computing, Professor Magee has over 30 years' experience of computer science research and has extensive experience of industry through research collaborations and consultancy work. In the *Times Higher Education World University Rankings 2011*, Imperial was ranked 10th in the world for engineering and information technology.

## IMPERIAL RESPIRATORY RESEARCHERS AMONGST MOST INFLUENTIAL IN EUROPE

Four academics from the National Heart and Lung Institute (NHLI) at Imperial have recently been named among the 30 researchers in Europe with the most citations in respiratory medicine. The analysis published in May 2011 by the journal *LabTimes*, counted how many times the work of different authors was cited in all journals between 1998 and 2009. No other institution in Europe had as many researchers in the top 30. Professor Peter Barnes came top of the list, with over 26,000 citations – almost twice as many as the second most cited author. Professors Fan Chung, Stephen Durham and Ian Adcock were ranked eighth, 15th and 23rd respectively.

## PRO RECTOR (INTERNATIONAL AFFAIRS)

Dr Simon Buckle took up the position of Pro Rector (International Affairs) on 1 October 2011 succeeding Professor Mary Ritter. Dr Buckle is responsible for the College's strategic international interests and will work closely with the Pro Rectors for Education and Academic Affairs, Research and Enterprise to identify and advance new opportunities. Dr Buckle is also Director of Climate Policy in Imperial's Grantham Institute for Climate Change.

## FELLOWSHIPS FOR NEXT GENERATION SCIENCE LEADERS

Nine scientists from Imperial, including Dr Gregory Offer pictured opposite, were awarded Engineering and Physical Sciences Research Council (EPSRC) Fellowships at the end of July 2010. The researchers were awarded more than £8 million in Career Acceleration Fellowships, which support early-stage researchers, and Leadership Fellowships supporting talented researchers with potential for international research leadership.

For more on this story visit: <http://bit.ly/earlystageleaders>

## TOP PAPER ACCOLADE

A paper by Imperial College Business School's Professor Erko Autio was named paper of the decade in August 2010 by the American Marketing Association (AMA). Professor Autio, who holds the QinetiQ–Engineering and Physical Sciences Research Council Chair in Technology Transfer at the School, won the Gerald E. Hills Prize for his paper *Social capital, knowledge acquisition, and knowledge exploitation in young technology-based firms*, first published in the Association's *Strategic Management Journal* in 2001.

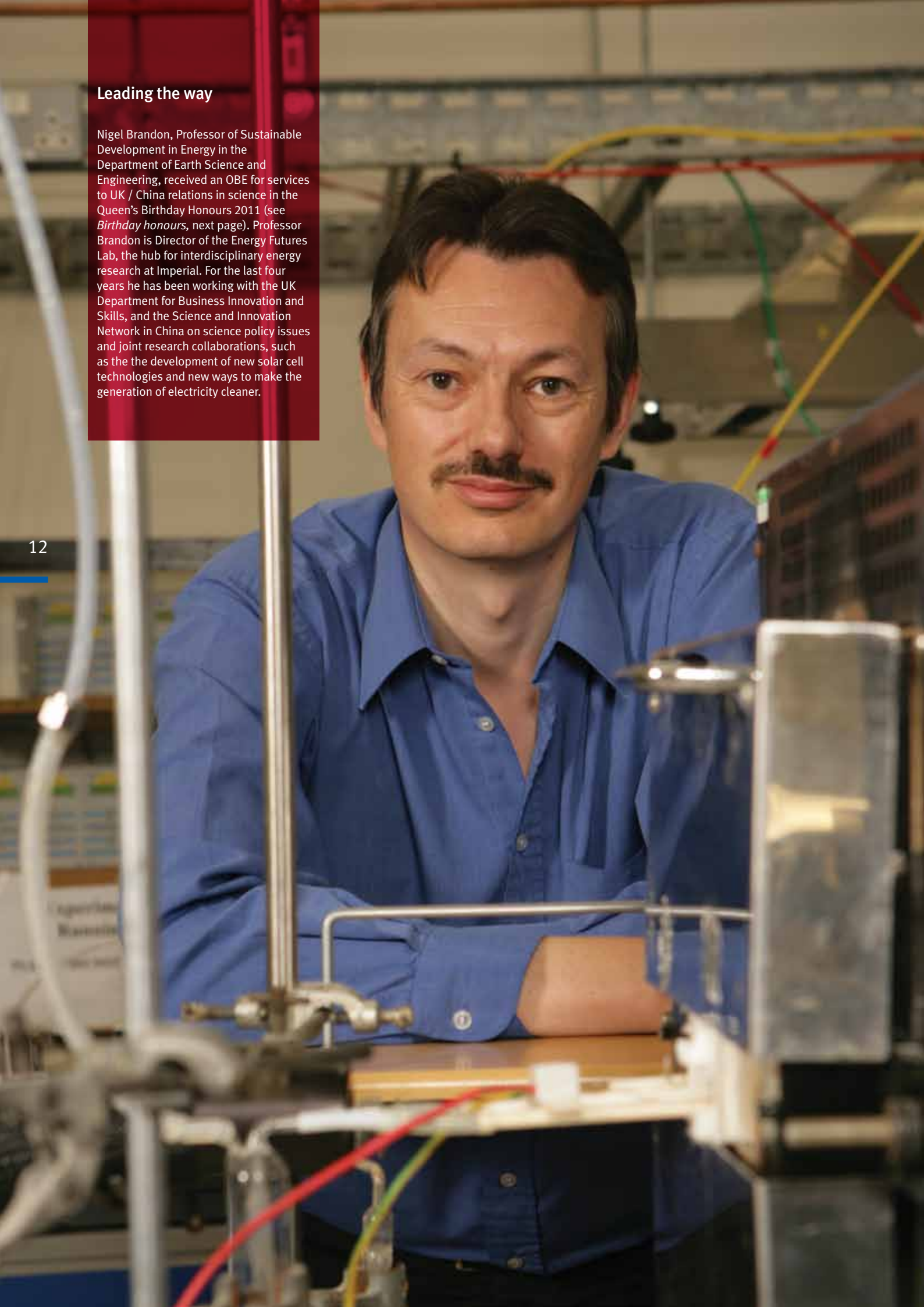
## RECTOR'S AWARDS

The important role that academic and non-academic staff play in supporting students and enhancing their experience at Imperial was recognised by the Rector's Awards for Excellence in Pastoral Care and for Supporting the Student Experience in June 2011. Five staff won awards for pastoral care, one of whom was also awarded the Rector's Medal for Outstanding Contribution. An innovation this year was the supporting the student experience award, of which there were 10 winners, two of whom were also awarded Rector's Medals for Outstanding Contribution.

For more on this story visit: <http://bit.ly/RAwinners>

## Leading the way

Nigel Brandon, Professor of Sustainable Development in Energy in the Department of Earth Science and Engineering, received an OBE for services to UK / China relations in science in the Queen's Birthday Honours 2011 (see *Birthday honours*, next page). Professor Brandon is Director of the Energy Futures Lab, the hub for interdisciplinary energy research at Imperial. For the last four years he has been working with the UK Department for Business Innovation and Skills, and the Science and Innovation Network in China on science policy issues and joint research collaborations, such as the the development of new solar cell technologies and new ways to make the generation of electricity cleaner.



# Awards and honours

## NEW YEAR'S HONOURS 2011

Past and present Imperial staff were recognised in the Queen's New Year's Honours list this year. Linda Jones, Projects Manager for the Faculty of Natural Sciences and Operations Manager in the Department of Physics; Lindsay Green, Administrative Director at the Medical Research Council's Clinical Sciences Centre in the Faculty of Medicine; and David Gentry, formerly Safety Manager in the Faculty of Natural Sciences, who left the College recently after more than 40 years' service, were all recognised with MBEs for services to science.

For more on this story visit: <http://bit.ly/ARhons1>

## BIRTHDAY HONOURS

Fostering sustainable energy research collaborations between the UK and an emerging Asian superpower, and promoting wider student participation in higher education were some of the achievements of College staff who were recognised in the Queen's Birthday Honours list in 2011. Among the staff honoured were Professor Nigel Brandon, Director of the Energy Futures Laboratory, pictured opposite, and Mr Alan West from the Reach Out Lab, which provides a high-tech, multidisciplinary space where teachers and students can get practical experience of science, participating in activities and experiments that many state schools would be unable to organise.

For more on this story visit; <http://bit.ly/ARhons2>

## RESEARCHERS WIN PRESTIGIOUS FELLOWSHIPS

Four leading Imperial researchers were awarded Fellowships of the Academy of Medical Sciences in June 2011. Professor Gianni Angelini (NHLI), Professor Daniel Davis (Life Sciences), Professor Christoph Tang (Medicine) and Professor Dominic Withers (Clinical Sciences) are among 40 eminent scientists who have been honoured this year. Academy Fellows are elected for outstanding contributions to the advancement of medical science, for innovative application of scientific knowledge or for their conspicuous service to healthcare.

## PRESTIGIOUS AWARD FOR MICRO-ENGINEERING PIONEER

Professor Eric Yeatman, Deputy Head of the Department of Electrical and Electronic Engineering, was awarded the Royal Academy of Engineering's Silver Medal in June 2011. He was one of only four engineers in the UK to be awarded the annual medal, which recognises an outstanding and demonstrated personal contribution to British engineering. Professor Yeatman is a world leader in the field of micro-engineering, which focuses on developing tiny devices, which can be smaller than a human hair, for use in a range of areas including electronics and communications.

## NEW FELLOW OF THE ROYAL SOCIETY

In May 2011, Professor Nicholas Franks, Professor of Biophysics and Anaesthetics and Head of Imperial's Division of Cell and Molecular Biology, was elected a fellow of the Royal Society for revolutionising our fundamental understanding of the action of general anaesthetics. He joins 66 other College staff or associates who are Fellows of the Royal Society.

## ENGINEERING INSTITUTION RECOGNITION

Professor Nick Buenfeld, the recently appointed Head of the Department of Civil and Environmental Engineering, was made a new Fellow of the Academy of Engineering in July 2011. He was among 59 engineers from around the world to be recognised by the Academy, which promotes excellence in the science, art and practice of engineering. Professor Buenfeld has helped to make some of the world's largest concrete infrastructures more sustainable, reliable, safe and durable.

## FARADAY MEDAL WINNER

Professor Donal Bradley, former Deputy Principal of the Faculty of Natural Sciences and now Deputy Rector (Research), was awarded the Institution of Engineering and Technology's Faraday Medal in November 2010. The award recognises the exceptional achievements of individuals working in engineering and technology and is the organisation's highest honour.

## EUROPEAN RESEARCH COUNCIL FOUNDER ACKNOWLEDGED

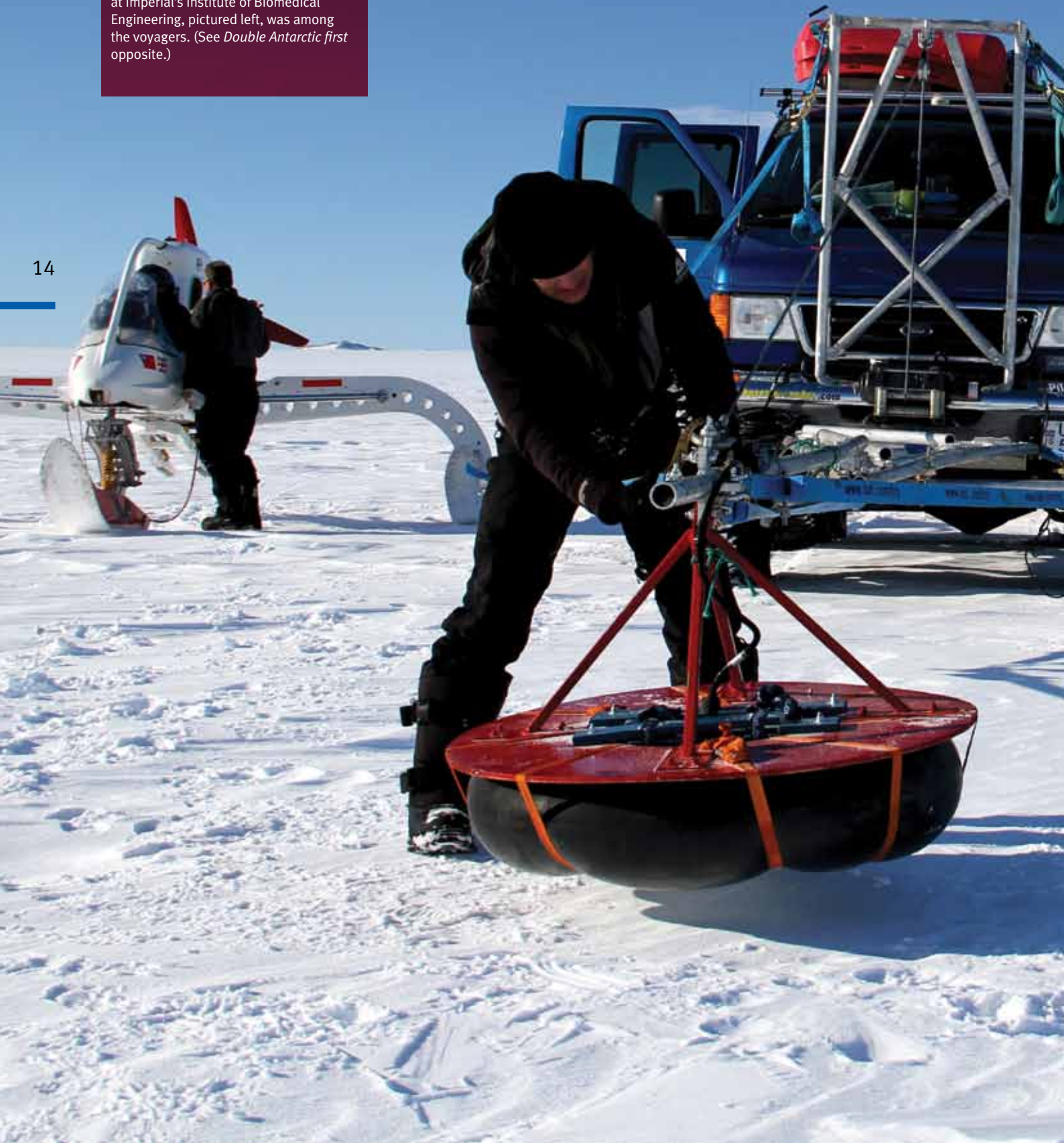
Professor Fotis Kafatos from the Division of Cell and Molecular Biology was awarded the prestigious Leibniz Medal by the Berlin-Brandenburg Academy of Sciences and Humanities in Germany in June 2011. An eminent scientist who has played a key role in establishing the European Research Council (ERC), he received the prize for his dedication to promoting science and scientific achievement. Professor Kafatos was instrumental in creating the ERC, which is considered a milestone for the European scientific community, as the first organisation to allocate funding to research based exclusively on scientific merit, rather than even distribution among the European nations.

## IET ACHIEVEMENT MEDALS

Leading engineering researchers and a visiting professor won major awards at the Institution of Engineering and Technology's (IET) Achievement Awards ceremony in November 2010. From the Department of Electrical and Electronic Engineering, Professor Erol Gelenbe received the Oliver Lodge Medal for Achievement in Information Technology, Professor Ron Hui received the Crompton Medal for Achievement in Power, and Professor Vincent Poor, a visiting professor from Princeton University and member of the US National Academy of Engineering, received the Ambrose Fleming Medal for achievement in communications. The IET has a global membership of 150,000.

## Icy achievement

Travelling in a one-man biofuelled ice vehicle on skis and two six-wheel drive science support vehicles, the Moon Regan expedition team set a record time for traversing Antarctica in vehicles when they reached the Ross Ice Shelf on 9 December 2010, before retracing their tracks to their starting point. They covered a total distance of around 4,000 kilometres. Senior Research Associate, Mr Ray Thompson from the Winston Wong Centre for Bio-Inspired Technology at Imperial's Institute of Biomedical Engineering, pictured left, was among the voyagers. (See *Double Antarctic first* opposite.)





## Engineering

### NEW ENGINEERING INDUSTRY PARTNERSHIP

A multi-million pound partnership between Imperial and engineering company Laing O'Rourke was formed in September 2010 to establish a Laing O'Rourke Centre in Systems Engineering and Innovation at the College. The centre, directed by Professor David Fisk, is expected to run a two-year, part-time MSc course in Systems Engineering, which will focus on innovation in systems engineering, dealing with how complex engineering projects are designed and managed.

### QATARI CARBON STORAGE PARTNERSHIP

Imperial researchers are devising new ways to store carbon dioxide (CO<sub>2</sub>) underground in Qatar in the Middle East. The work is part of a 10-year project begun in 2008 by the College's Qatar Carbonates and Carbon Storage Research Centre, Qatar Petroleum and Shell. The partners are working to understand the complex geology of carbonate rock to determine how they can store CO<sub>2</sub> safely. Researchers at the Centre, including Professors Geoff Maitland, Martin Blunt and Martin Trusler, have also been developing state-of-the-art lab equipment and complex numerical models to improve understanding of the behaviour of CO<sub>2</sub> under the extreme pressures and temperatures to which it would be subjected when injected into carbonate rock.

### DOUBLE ANTARCTIC FIRST

In December 2010, a team of Imperial scientists partnered the Moon Regan Trans-Antarctic Expedition, which completed the first 'there and back' crossing of Antarctica in wheeled vehicles. The 10-strong team of explorers and scientists, including staff from Imperial's Winston Wong Centre for Bio-Inspired Technology in the Institute of Biomedical Engineering, which is led by Professor Chris Toumazou, travelled for 20 days and 4,000 kilometres across Antarctica via the South Pole, collecting scientific data about the environment (see picture opposite). They also used wireless sensor technology developed at Imperial to monitor the environment, the vehicles, and their own bodies.

For more on this story visit: <http://bit.ly/ARmoonR>

### EARLY HUMAN TOOLMAKING

Stone Age humans were only able to develop relatively advanced tools after their brains evolved a greater capacity for complex thought, according to a study published in the journal *PLoS One* in November 2010 that investigated why it took early humans almost two million years to move from razor-sharp stones to a hand-held stone axe. A cross-disciplinary team of researchers from a number of institutions, led by neuroscientist Dr Aldo Faisal of Imperial's Departments of Bioengineering and Computing, employed a flintnapper to replicate ancient toolmaking techniques. They then used tiny sensors embedded in gloves and computer modelling to assess the complex hand skills that early humans needed in order to make two types of tools during the Lower Palaeolithic period, which began around 2.5 million years ago. The team said that comparing the manufacturing techniques used for both Stone Age tools provides evidence of how the human brain and human behaviour evolved during the Lower Palaeolithic period.

## Medicine

### OBESITY DOUBLES

The worldwide prevalence of obesity has nearly doubled since 1980, according to a major study published in *The Lancet* in February 2011 on how three important heart disease risk factors have changed across the world over the last three decades. The study, led by Professor Majid Ezzati from the School of Public Health, looked at all available global data to assess how body mass index, blood pressure and cholesterol changed between 1980 and 2008. It shows that in 2008, more than one in 10 of the world's adult population was obese, with women more likely to be obese than men.

### RETROVIRUS UNDERSTANDING GROWS

Understanding of how HIV and other retroviruses infect human or animal cells has been advanced by research using data collected at the Diamond Light Source, the UK's national synchrotron facility. Using the facility's finely tuned pinpoint X-ray beams, the researchers, led by Dr Peter Cherepanov of the Department of Medicine, were able to determine the 3D structures of the key molecular machine used by viruses, such as HIV, to insert copies of their genetic material into host DNA. This fundamental knowledge will not only facilitate design of better drugs for fighting AIDS, but may also have an impact on pioneering treatments, such as gene therapy. The research was published in *Nature* in November 2010.

### BIOBANK FOR MAJOR DISEASE RESEARCH

A 'biobank' is being established by Qatar Foundation for Education, Science, and Community Development and Qatar's Supreme Council of Health, with the assistance of experts from Imperial led by Professors Elio Riboli and Paul Elliott from the Faculty of Medicine. The project was announced at the Royal Society in the presence of Her Highness Sheikha Mozah bint Nasser Al-Missned, during a Qatari state visit to the UK in October 2010. The biobank will collect a wealth of medical data from up to 100,000 volunteers and store samples of their blood and urine in a high-tech storage facility over many years. This will allow scientists to look at diseases already present in the population, as well as following up the participants to see who develops disease in the future.

### NEW GENETIC VARIANTS FOR HEART DISEASE

Five new genetic variants linked to heart disease have been identified in a meta-analysis of four large genome-wide association studies, published in *Nature Genetics*. The findings of the study, which was co-led by Professor Jaspal Kooner, Dr John Chambers and Professor Paul Elliott, will guide research into new treatments for coronary heart disease, which kills 88,000 people in Britain each year. The discoveries add to 11 common variants previously shown to be associated with heart disease, and provide further evidence that many genes have a small but significant effect on heart disease risk.

### GLOBAL DIABETES EPIDEMIC

A major international study collating and analysing worldwide data on diabetes since 1980 has found that the number of adults with the disease reached 347 million in 2008, more than double the number in 1980. The research, co-led by Professor Majid Ezzati and published in June 2011 in *The Lancet*, revealed that the prevalence of diabetes rose or, at best, remained unchanged in virtually every part of the world over the last 30 years. The study found that between 1980 and 2008, the number of adults with diabetes rose from 153 million to 347 million. 70% of the rise was due to population growth and ageing, with the other 30% due to higher prevalence. The proportion of adults with diabetes rose to 9.8% of men and 9.2% of women in 2008, compared with 8.3% of men and 7.5% of women in 1980.

## Natural Sciences

### GATES FUNDING

Researchers in the Centre for Environmental Policy exploring the most effective ways in which governments and donors can support agricultural development in sub-Saharan Africa were awarded a £2.7 million grant from the Bill and Melinda Gates Foundation in November 2010. The funding allows the researchers, led by Professor Sir Gordon Conway, to deliver evidence-based policy advice to European governments, so that resources for agricultural development are put to the best possible use. Agriculture is vital to food security in the region and for countries' economies, playing a key role in reducing poverty.

### GIVING A NEW DIMENSION TO MATHS

Mathematicians from Imperial are aiming to identify all the shapes across three, four and five dimensions that cannot be divided into other shapes. The results should provide a resource that mathematicians, physicists and other scientists can use for calculations and research in a range of areas, including computer vision, number theory and theoretical physics. The three-year project, announced in February 2011, is led by Professor Alessio Corti of the Department of Mathematics.

For more on this story, including a gallery of shapes, visit: <http://bit.ly/ARmaths1>

### MATERIALS SCIENCE IN TOP THREE

Imperial is one of the top three institutions in the world for materials science research, according to a global review of the most prominent researchers in the field. Professors Jenny Nelson, Iain McCulloch, James Durrant and Donal Bradley from the Centre for Plastic Electronics are the first, second, fourth and sixth most prominent materials scientists in the UK respectively, ranked on citations per paper. With four entries in the list, and half of all UK entries, Imperial as an institution is ranked joint second in the world. Thomson Reuters compiled the list to celebrate the 2011 International Year of Chemistry.

### ENVIRONMENT GETTING 'BLUER'

In a major study published in April 2011, researchers, including Mr Bernardo Garcia-Carreras and Dr Daniel Reuman of the Department of Life Sciences, examined how quickly or slowly animal populations and their environment fluctuate over time, something ecologists describe using 'spectral colour'. Previous studies show that the spectral colour of a population is linked to its risk of becoming extinct; this study showed a way that climate change could influence the extinction risk of populations by affecting the 'colour' of populations. They found that our environment is becoming 'bluer', in other words, fluctuating more rapidly over time.

### RISK AND REALITY

Our flawed understanding of how decisions in the present restrict our options in the future means that we may underestimate the risk associated with investment decisions, according to research by Dr Ole Peters from the Department of Mathematics and the Grantham Institute for Climate Change. The research, published in December 2010, suggests how policy makers might reshape financial risk controls to reduce market instability and the risk of market collapse. Finding more accurate ways to predict and manage risk will also improve the way we prepare for and respond to extreme events, and will help our consideration of future risks due to a changing climate.

For more on this story visit <http://bit.ly/ARrisk>



### New technology could reduce DNA sequencing time

Scientists from the Department of Chemistry are developing technology that could ultimately sequence a person's genome in minutes, at a fraction of the cost of current commercial techniques. The researchers have patented an early prototype technology that they believe could lead to an ultrafast commercial DNA sequencing tool within 10 years. Their work, described in a study published in the journal *Nano Letters* in December 2010 by authors including Dr Joshua Edel, pictured here, could provide huge benefits for medical tests, or DNA profiles for police and security work.

## Identifying and protecting endangered species

Conservationists may need to change their approach to protecting animals and plants from extinction, if they are to successfully shield key species and habitats from the effects of global climate change, according to a review published in March 2011. One of the lead authors, Professor Georgina Mace of the Grantham Institute for Climate Change, pictured here, said that recommendations for a new vulnerability assessment will mean conservation efforts could be targeted to protect the most vulnerable species and habitats, instead of focusing on a threatened location.



## Business School

### INNOVATION IS NOT AN OPTION

Experience gained from working with BAA and Laing O'Rourke to analyse their innovative approach when planning and constructing terminal five at London's Heathrow Airport was fed into a new course called Managing the Strategic Value of Innovation in June 2011. The short course, designed by researchers from the Business School's Innovation and Entrepreneurship Group led by Professor David Gann, focused on the benefits of innovation and how to implement innovation in existing companies and new start-ups effectively. Students on the course explored organisational strengths and weaknesses, opportunities and threats in innovation, and produced a development plan for transforming their own organisation's results through innovation.

### MAKEOVER FOR ENVIRONMENT DATA AND MODELS

Researchers are creating a web-based cloud computing platform where people can access and exchange data and algorithms to manage risks associated with environmental changes, in a new project announced in July 2011. The project will see the Business School and the Grantham Institute for Climate Change at Imperial collaborating with the Met Office and IBM, in a multi-million pound initiative funded by the Technology Strategy Board, as part of the Digital Economy Collaborative R&D programme. The researchers hope that the new website will be available in 2012.

### HOW DIGITAL TECHNOLOGY CAN TRANSFORM CITIES

In July 2011 Imperial researchers embarked on the Digital City Exchange programme to transform the way that our cities are used. They are investigating how digital technologies can boost the capabilities of energy, health, transport and utility resources, so that they run as effectively as possible. Through the programme, funded with a £5.9 million grant from Research Councils UK, researchers from the Business School and the Department of Electrical and Electronic Engineering intend to improve the use and planning of cities by collecting appropriate data and conducting analysis at a systemic level.

## Multidisciplinary

### REDUCING ROAD TRANSPORT EMISSIONS

Radical changes in vehicle technologies and fuel and energy sources will be essential, if the UK is to meet its commitment of an 80% reduction in greenhouse gas emissions by 2050, according to a briefing paper on road transport technologies published in October 2010 by Imperial's Grantham Institute for Climate Change. Dr Ricardo Martinez-Botas from Department of Mechanical Engineering, one of the authors of the briefing paper, and an expert in engine turbochargers, said that the move to low-carbon vehicles needs to embrace the significant and affordable changes that engineering can make, and recognise that short to medium-term solutions will be essential.

### NEW CHEMICAL BIOLOGY INSTITUTE

In recognition of its continuing growth and success, and in its 10th anniversary year, Imperial's Chemical Biology Centre was reconstituted as the Institute of Chemical

Biology in November 2010. The Institute joins the College's other cross-faculty institutes that aim to bridge world class research activity in the different faculties and departments within the College. Co-chaired by Professor David Klug of the Department of Chemistry, the Institute focuses particularly on the development and application of novel tools and technology for solving major problems in the life and biomedical sciences.

### IMPERIAL-TAIWAN PARTNERSHIP

A new academic partnership agreed in April 2011 by Imperial and a consortium of universities in Taiwan will provide opportunities every year for three years for five Taiwanese students to take their PhDs at Imperial and for 10 Imperial academics to make research visits to Taiwan. The collaboration will also support joint research projects building on Imperial's strong existing links with the country. The initiative will focus on research in bio-inspired science and technology, humanities and social sciences, drawing particularly on the expertise of Imperial College Business School and the Winston Wong Centre for Bio-Inspired Technology, part of the Institute of Biomedical Engineering.

### NEW GREEN INDUSTRY FOR THE UK?

The UK has the capacity to develop new green industries for capturing harmful carbon dioxide emissions from industry and storing them deep underground, but more investment is needed to further develop the relevant technologies and infrastructure, said scientists from the Grantham Institute for Climate Change at Imperial in research published in December 2011. The development of carbon capture and storage technologies could promote economic growth, and spawn new green technology companies and services, said the report's authors, including Professor Martin Blunt.

## Simulation science

Professor Roger Kneebone, Professor of Surgical Education, and his team have developed an inflatable operating theatre. This training tool is portable, cheap and, when packed up, will fit into the boot of a car. It contains a special lightweight operating lamp, special audio effects and an image of an anaesthetic machine. (See *Simulated theatre teaching* opposite.)

# Education

## NATIONAL STUDENT SURVEY

The results of the National Student Survey released in August 2010 showed an overall satisfaction rating of 85% for Imperial, 3% higher than the sector average, while satisfaction with the College's learning resources stands at 90%, 10% higher than the sector average. The College came 43rd in the national league table and 13th among Russell Group institutions. NSS data is based on the opinions of final year undergraduates, across most UK universities and colleges, on a number of issues. These include how the students rate universities' learning resources, quality of personal development support and how intellectually stimulating their courses are.

## TOP MARKS FOR IMPERIAL MEDICAL STUDENTS

Medical students at the College have achieved the highest scores in the country in the application scheme for the Foundation Programme, the two-year generic training programme which bridges medical school and specialty training. Imperial students have consistently ranked in the top five since the Foundation Programme application system was first introduced five years ago. In 2011, the average score of 81.3 topped the table for all medical schools in the UK. The scores in the application process are the primary determining factor in allocating students to foundation schools, which teach the two-year programme. The first year builds upon the knowledge, skills and competences acquired in undergraduate training. The second year focuses on training in the assessment and management of the acutely ill patient, as well as generic professional skills including team work, time management and communication skills.

## STUDENT PROFILE

Imperial aims to identify, attract and develop students of the highest ability; those who are most able to benefit from its rigorous, intensive and research-led degree courses in science, engineering, medicine and business. For the 2010–11 academic year, six applications were received for every undergraduate place and 39% of applications were from non-EU applicants. The average A-level tariff score on entry, based on the best three grades, was better than the equivalent of one A\* and two As. Student numbers are carefully managed to ensure a high quality education experience and the student:staff ratio was 12.1:1 in 2010–11. International students form a significant part of the College community and in 2010–11, 30% of full-time students came from a range of countries outside the EU.

## CONSTRUCTIONARIUM

In June 2011, over 100 Civil and Environmental Engineering undergraduates, together with PhD students, academic and support staff, as well as alumni, assembled at the National Construction College in Norfolk in June 2011 for Constructionarium. The students divided into teams, assigned themselves typical construction site roles and worked on five projects based on existing structures, such as the Gherkin, the Kingsgate Bridge in Durham and the Don Valley Stadium in Sheffield. Supported by volunteer technicians and contractors, each team had to complete their project within five days, while managing resources and budgets, and developing short-notice contingencies as required. Constructionarium teaching was pioneered by Imperial in 2003 and the award-winning scheme has now been adopted by over 15 universities nationally, as well as being supported by HEFCE.

## SIMULATED THEATRE TEACHING

The Distributed Simulation Group at Imperial, led by Professor Roger Kneebone from the Department of Surgery and Cancer, pictured opposite, is developing a real-world approach to medical training, involving experienced medical staff, an inflatable theatre, and realistic silicon models like those used in TV hospital dramas. A surgical registrar devises scenarios that put an entire team through their paces in a mocked-up operating theatre, the walls of which are formed by an inflatable 'igloo' that recreates a convincing clinical space. They even use lifelike model humans on which to perform procedures in order to see people behaving as they really would in the workplace. Unlike training in virtual settings generated by computers, using the igloo drills trainees in working as a team.

For more on this story visit <http://bit.ly/ARigloo>

## MATHS LEARNING CENTRE OPENED

March 2011 saw the official opening of the Mathematics Learning Centre (MLC) in the Huxley Building at the South Kensington Campus, home to the Department of Mathematics. The creation of the MLC was a College-funded initiative and was achieved thanks to input from the Faculty of Natural Sciences, the Department of Mathematics and the Library. The new space enhances the student learning experience with the provision of new study rooms with tables and whiteboards, more computers with large screens, and an informal soft seating area. The space can also be used for teaching sessions and a number of academic staff use it for their regular meetings with students.

### Pioneering analysis

Professor Jeremy Nicholson, Head of the Department of Surgery and Cancer, is working on using powerful metabolic screening tools which give doctors more information about a patient's physiology and response to treatment at different stages. The aim is to help optimise the management of individual patients, ultimately saving lives as well NHS money. (See *Tailoring healthcare* opposite.)

# Translation

## MEDICAL IMAGING ALLIANCE

In April 2011, it was announced that the UK research community will soon benefit from access to world class medical imaging facilities, thanks to a unique joint venture between the Medical Research Council, Imperial, King's College London and UCL. The partners have assumed responsibility for the facilities and operations at the £47 million Clinical Imaging Centre at Imperial's Hammersmith Campus, previously operated by GlaxoSmithKline. Under the new arrangements, the partners' research and technical expertise will help the facility to focus on new areas and applications of imaging, and accelerate the translation of biomedical research into healthcare and economic benefits.

## HEALTH MANAGEMENT APP

A smartphone health portal application that helps users manage their health was released in November 2010 by a team at the College and Imperial College Healthcare NHS Trust, led by Professor Lord Darzi (Institute for Global Health Innovation and Department of Surgery and Cancer). The Wellnote by Dr Darzi iPhone app allows patients to anonymously rate healthcare services, maintain health records, and set appointment and medication reminders – a particularly useful feature given that up to half of patients do not take their medication correctly. The information can also be easily emailed to their doctor or shown to a clinician when required.

## TRANSLATION AT WORK

The Duke of York visited Imperial in March 2011 to learn about the College's pioneering healthcare innovations. He toured the Imperial Incubator, which houses early-stage technology companies spun out of Imperial. One such company is RepRegen, which is developing biomaterials to repair bones that have been damaged from disease, trauma or surgical intervention and the Duke met Molly Stevens, Professor of Biomedical Materials and Regenerative Medicine and Chief Scientific Officer of RepRegen. He also heard about international partnerships that support the translation of Imperial expertise into practice and sustainable benefits in local healthcare, such as the Qatar Biobank programme (see *Biobank for major disease research*, page 15).

## TAILORING HEALTHCARE

Chemical screening technologies will help doctors monitor surgical patients before, during and after operations, said experts from Imperial's newly opened Centre for Surgical Metabonomics, in a *Lancet* article in May 2011. Such technologies could produce a 'molecular fingerprint' of a biological sample, providing useful diagnostic information about which parts of tissue are diseased, how severe a disease is, and what the effects of particular therapies might be. The Centre is already enabling researchers to apply this kind of analysis in a hospital setting. Teams led by the College's Professor Jeremy Nicholson and Professor Lord Darzi (Department of Surgery and Cancer) are using nuclear magnetic resonance spectroscopy and mass spectrometry to analyse body fluids and tissue samples from patients undergoing surgery at Imperial College Healthcare NHS Trust, to investigate how these tools could be used to tailor treatment and care individually.

## DEVELOPING NEW ENERGY OPTIONS

Naked Energy is an innovative London-based small enterprise that has developed a novel solar panel combining photovoltaic and solar-thermal technology to produce high efficiency carbon-free heat and electricity for the home. Working with Professor Peter Childs, Professorial Lead in Engineering Design from the Department of Mechanical Engineering, the company is using Imperial expertise in fluid modelling and product design to refine the prototype and verify its performance ahead of the product's launch. To date, Naked Energy has won several prestigious awards including the Shell Springboard Award and European Institute of Innovation and Technology Venture Prize. It has also become a partner of the Imperial co-managed Climate-KIC programme, a multi-million pound European Union initiative to accelerate innovation in climate change mitigation and business creation.

## MEDICATION RESPONSE PREDICTOR

Scientists at Imperial spin-out company DNA Electronics have successfully tested a prototype device developed to determine if patients are genetically predisposed to suffering adverse reactions to prescription drugs. The researchers, led by Professor Chris Toumazou of the Institute of Biomedical Engineering, believe the success of the pilot study takes the device, the SNP Dr, one step closer use in healthcare settings. The device's portable technology gives accurate, real-time, on-the-spot results for specific DNA sequences that may be used by doctors to indicate how people are likely to respond to certain drugs. It works by analysing genetic differences found in DNA called Single Nucleotide Polymorphisms (SNPs). These differences can indicate how people may respond to disease, bacteria, viruses, toxins and medication. The team's work was recognised by awards in the electronics, emerging technologies and healthcare categories at the Institution of Engineering and Technology's Innovation Awards in November 2010. They were the only entrants to win awards in more than one category entered.

### Spray-on science

Silly string sprayed by partygoers was the inspiration behind a collaboration between chemical engineer Professor Paul Luckham and designer Dr Manel Torres. Experimenting with fibre mixtures, polymers and solvents, they developed a liquid that turns into a solid when sprayed onto a surface. Their company, Fabrican Ltd, demonstrated the results during London Fashion Week 2010 with a dramatic catwalk fashion show in the College's main entrance. Commercial applications are expected to be in healthcare, design and transport sectors.



# Community and public engagement

## RACING GREEN

The College's undergraduate, zero emission car development team, Imperial Racing Green, began the year by coming third and fourth with its Formula One-style vehicles in an international competition. They were competing in the Class 2 Design section of the Institution of Mechanical Engineering's annual, international Formula Student competition in August 2010 at Silverstone, the home of British motorsport. Then, in April 2011, the College's postgraduate and alumni Racing Green Endurance team exhibited its all-electric supercar at the Science Museum. Earlier in the year, the Radical SRZero battery powered supercar, which can reach a top speed of 190 kilometres per hour, was driven on a 26,000-kilometre journey down the Americas; a 140-day trip across two continents and 14 countries.

## HANDS ON SUMMER SCIENCE

Around 900 young people aged eight to 18 experienced a taste of university life at Imperial, thanks to the 2010 science summer schools designed to raise the aspirations of young people from families with no experience of higher education. The schools give pupils a chance to get the kind of hands-on experience in science, technology, engineering and mathematics subjects that many state schools are not able to offer. Run in partnership with the education provider Exscitec, they are also an opportunity for pupils to spend time on a university campus, find out more about student life, and meet academics and students.

## JOIN-IN CLIMATE SURVEY

In March 2011, a nationwide community climate survey by Open Air Laboratories (OPAL), a collaboration between Imperial, the Met Office and other partners, was launched at the College. The project, which is collecting data that will play an important role in meteorological research, needed no hi-tech equipment, just a free survey pack downloadable from the OPAL website. Participants looked for aeroplane condensation trails in the sky, observed cloud movement to record wind direction at cloud level, blew bubbles to measure wind direction and speed at street level, and noted the clothes they wore for a better understanding of thermal comfort. Imperial is the lead partner of OPAL, which is directed by Dr Linda Davies, from the College's Centre for Environmental Policy.

## RESEARCH AT THE SCIENCE MUSEUM

A multi-coloured mouse brain, a jacket grown from bacteria and a miniature bioreactor were all on display in the Science Museum during August 2010 as Imperial researchers took their work to the public. Scientists, including Emeritus Professor Colin Caro from the Department of Bioengineering, showcased research in the Who Am I? exhibit, which invited people to explore the science of who they are, and the Trash Fashion exhibit, which looked at new techniques for reducing the environmental impact of the fashion industry. They also demonstrated cutting-edge green power technology in the Antenna Wing.

## SCIENCE MASTER CLASSES

November 2010 also saw schoolchildren from seven academies in south London visit the Reach Out Lab at the College for an inspirational evening of science master classes led by Professor Lord Winston. Over two evening events 48 pupils got hands-on experience of science and medicine in action. In a surgery simulation inside an inflatable operating theatre, they donned full surgical kit to work alongside Professor Roger Kneebone of the Department of Surgery and Cancer and his medical team, to stem the flow of blood from a knife wound on a life-sized prosthetic dummy. They also participated in a workshop to remove lesions from prosthetic limbs and a rat dissection masterclass led by Robert Winston.

## CREATIVE FUTURES

The fifth Creative Futures event was held at Imperial in November 2010, featuring a series of workshops designed to inspire young, black and minority ethnic pupils from London secondary schools to think about science and higher education. They were given the opportunity to take part in hands-on sessions focusing on collaboration and team-building, including a laboratory-based workshop on stem cells led by Dr Sara Rankin of the National Heart and Lung Institute in Imperial's Reach Out Lab. Prizes were awarded at the end of the day to the teams who worked best together.

## LONDON'S TOP SPORTING UNIVERSITY

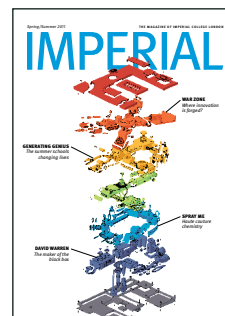
The 2010–11 British Universities and Colleges Sports Season came to a close with Imperial finishing in 17th place and as the top London institution. Teams maintained the College's 17th position in the national league table, coming in only 10 points behind the 16th placed institution. The points total of 1455.5 was an increase on the previous year and enabled Imperial to secure the title as number one institution for London, seven places in front of the nearest rival.

## INSPIRING PHYSICS TEACHING

School teachers found themselves back in the classroom during the 2011 Easter break but on the other side of the desk, thanks to an event organised by Department of Physics academics, including Teaching Fellow Dr Mark Richards, in collaboration with the Institute of Physics. The free workshop targeted state school science teachers without a physics background, who teach physics as part of GCSE science courses. The aim was to boost teachers' confidence and pass on skills to spark their students' imagination in the classroom without extensive resources.

## IMPERIAL MAGAZINE

*Imperial* is the College's new magazine for friends, supporters and alumni, covering thought-provoking stories and images from across our university community.



Download *Imperial* magazine from [www.imperial.ac.uk/alumni/magazine](http://www.imperial.ac.uk/alumni/magazine)

### Sporting commitment

Alexia, an undergraduate in the Department of Bioengineering, practising with the Shotokan Karate Club in the refurbished gym facilities at Imperial College Union in Beit Quad.

# Estate developments

## UNION BUILDING REFURBISHMENT

The completed transformation of Imperial College Union's main facilities in Beit Quad on the South Kensington Campus, which began in 2008, was celebrated in March 2011. The work has resulted in more space for student club and society activities, and refurbished gym facilities on the third floor. The work's last phase saw the nightclub and bar renovated and renamed. The cost of the final phase of development was £2.6 million, two-thirds funded by Imperial College Union and a third by a gift from the College to help the Union enhance the student experience at Imperial.

## A LONDON FIRST

The £8.9 million refurbishment of the Department of Chemical Engineering and Chemical Technology's pilot plant, completed in mid 2011, has created London's first carbon capture pilot plant. The completed facility gives undergraduates the chance to learn first-hand about carbon capture and storage (CCS) technology and how it works. CCS works by filtering harmful emissions through chemical solutions called amines that capture the carbon dioxide, so that it can be transported and stored deep underground in depleted oil and gas reservoirs. The students will be trained to operate the plant, providing a valuable head start for those planning to work in the chemical industry.

## NEW POSTGRADUATE ACCOMMODATION

Griffon Studios, a development of 566 studios in south London is moving towards completion. Aiming to expand availability of accommodation for postgraduates in London, with priority for Imperial students, the apartments are being developed by the College together with property developer Berkeley First. The development's rooms are being released in two phases, the first of which saw 452 studio apartments being made available in 2011, with the remaining 114 scheduled to be ready for the 2012–13 academic year. The facilities include a gym, common room and gardens. Meanwhile, work on Wood Lane Studios, a 606-bed postgraduate accommodation development at Imperial's new campus in White City, is ongoing, with the project on schedule to be finished for the start of the 2012–13 academic year.

## NEW FACILITIES AT HAMMERSMITH CAMPUS

Construction at the L Block site on the Hammersmith Campus continued during the year for completion in the autumn of 2011. The new building's laboratories and other areas are now being fitted out for occupation in 2012. When completed 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, designed to encourage the translation of research findings into benefits for patients with serious, common health conditions.

## LAB REFURBISHMENT FOR STRUCTURES

A £2 million College investment in the upgrading of the Department of Civil and Environmental Engineering's structures laboratories has provided new equipment and workshops so that researchers can complete structural tests more productively and with greater precision. The refurbishment, which was unveiled in September 2010, will help ensure that the Department's facilities remain world class. It was the best performing civil engineering department in the country in the last Research Assessment Exercise.



Two views of the L Block development at the Hammersmith Campus, which is nearing completion.

# Imperial at a glance

## 2nd

Imperial's position for graduate employment in *The Sunday Times University Guide*.

## 3rd

Imperial's league table position in Europe in the *THE World University Rankings* and *QS World University Rankings*.

26

## £4.3m

The amount spent by the College on student financial support in 2010–11.

## £9.96m

Philanthropic income raised in 2010–11.

## 108%

The percentage by which donors have increased during the year.

## £299.2m

Imperial's 2010–11 research income.



# 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.

The Council serves as the College's trustee and is responsible for defining Imperial's strategic aims and directing the activities of its executive in the furtherance of these objects. 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. The Council has also paid due regard to the guidance issued by HEFCE in its role as principal regulator on behalf of the Commission.

## Strategic aims

The College's aims are set out in the 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 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. This section highlights areas in which the College carried out its activities for the public benefit during the year in furtherance of its objects.

## Education

The College offers excellent research-led education in science, engineering, medicine and business subjects. It places importance on teaching, whilst recognising that teaching alone is not sufficient to provide a higher education, particularly in science, technology and medicine (STEM) subjects. At undergraduate level, the College provides academically rigorous courses in core disciplines which give students practical experience, a theoretical understanding of research and a fundamental knowledge of their discipline. This provision is research-led, encouraging students to think independently and critically, and develop strong analytical skills. The College's postgraduate taught courses build upon fundamental knowledge acquired at undergraduate level. They include both discipline-based and multidisciplinary programmes and provide students with a platform to pursue doctoral study or to develop a successful career in the commercial, industrial, healthcare or public sectors. In addition, through the School of Professional Development, the College delivers short, bespoke postgraduate courses in science, engineering, medicine and business to the commercial sector and the NHS.

## 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.

The College has a number of support methods to facilitate access of appropriately qualified students to its courses regardless of their financial circumstance. Fees for Home and EU undergraduates are set currently at the maximum level and a generous undergraduate bursary scheme is provided, to which 31% of additional fee income has been allocated since the introduction of variable fees. Scholarships are provided for overseas students, which are awarded on academic merit and financial need, and the College has a dedicated fund of around £500k per annum to support PhD students.

### **Outreach**

Imperial College London has a long established reputation for delivering excellent outreach activities to school and college students. The College believes in raising the aspirations of all students, regardless of background, to fulfil their potential and apply to the right university for them. Imperial is committed to inspiring students in the study of science, technology, engineering and medicine. In support of this commitment, the College offers a range of activities and programmes ranging from open days for prospective students, inspirational hands-on activities, summer schools, mentoring programmes in schools and exciting lectures, to a schools visit programme to help raise awareness of higher education.

### **Research**

The challenges faced by the world today are complex and inter-related, affect the length and quality of life of entire populations, and can be addressed only through the discovery and application of new knowledge, most particularly in science, engineering and medicine. The College's research aims to create knowledge generally and provide solutions to a broad spectrum of societal and economic issues, including energy, environment, healthcare and security. It addresses these challenges on three broad levels, which are interdependent (core disciplines, multidisciplinary research, global challenges) with many academics being engaged with all three.

### **Translation**

The College's definition of translation encompasses all forms of knowledge transfer. The College is the only UK university to focus exclusively on science, technology, engineering, medicine and business, and the only one to have had the application of its work to industry, commerce and healthcare central to its mission since its foundation. Imperial College London's approach to translation is distinguished by being:

- open to external engagement, which stimulates the exchange of new ideas and a shared understanding of how emerging challenges might be addressed;
- multidisciplinary in mobilising people, knowledge and expertise across internal and external boundaries; and
- innovative in widening the overall reach and impact of its work – both in the UK and internationally. The College seeks to ensure that translating both into, and from, practice continues to remain an integral part of how it maximises value for society from its education and research.

### **Summary**

In 2010–11 the College fulfilled its educational and research mission, bringing direct benefit to its members and to society at large.

# 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'. On 16 March 2011, the Privy Council approved a number of changes to the Statutes which had been recommended in the governance review. These amendments included changes to the membership of the Council and the appointment processes for senior staff at the College.

## 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 stakeholders with an interest in 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 at least 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. In 2011 the Council, acting on the recommendations of a governance review, decided to reconfigure the Court as a stakeholder body to include representatives from associated NHS Trusts, funding agencies, alumni and companies, public sector bodies and charities which fund research and employ graduates from the College. The reconfigured Court came into effect on 1 October 2011 and now consists of 100 members most of whom are from outside the College. 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 Financial Officer, the Pro Rectors for Research, Education and Academic Affairs, International Affairs and Enterprise, the College Secretary and the Chief Executive of 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 misstatement 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 2011 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 UK Corporate Governance 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, the 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's** primary objective is to consider the strategic risks facing the College and the actions proposed to mitigate these risks

**The Remuneration 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.

The Council conducted a review of the College's governance arrangements in 2010. The review's recommendations, which took into account best practice at other leading universities, as well as the views of stakeholders and of those knowledgeable in governance matters, were accepted by the Council in July 2010 and have now been fully implemented.

Following the completion of the governance review in 2010, the Chairman, Lord Kerr of Kinlochard, advised the Council of his intention to step down as Chairman in July 2011. A Search Committee was then established to identify his successor under the chairmanship of Lord Tugendhat. Following a full and transparent search, the Committee reported back to the Council in May 2011. The Council accepted the Search Committee's recommendation and, on 13 May 2011, resolved to appoint Baroness Manningham-Buller as its Chairman with effect from 16 July 2011.

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: Accounting in Higher Education Institutions (SORP)* 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 misstatement or loss.

# Council and Council committees



Members of Imperial's Council 2010–11. Back row from left to right, Professor David Begg, Mr Jeremy Newsum, Mr Philip Dilley, Lord Tugendhat, Professor Sir Anthony Newman Taylor, Mr Alex Kendall, Professor Jeff Magee, Mr Andrew Murphy, Mr Stewart Newton, Professor Jeff Kramer. Front row from left to right: Dame Julia Higgins, Professor Stephen Richardson, Professor Maggie Dallman, Sir Keith O'Nions, Baroness Manningham-Buller, Lord Kerr, Ms Kate Owen, Mr Iain Conn, Dr Rodney Eastwood.

## The Council

### Chairman:

- ▶ The Lord Kerr of Kinlochard (until 15 July 2011)
- ▶ Baroness Manningham-Buller (from 16 July 2011)

### Co-opted External Members:

- ▶ Mr I. Conn (from 11 February 2011)
- ▶ Mrs P. Coultie
- ▶ Sir Peter Gershon (until 30 September 2010)
- ▶ Ms C. Griffiths (until 30 September 2010)
- ▶ Mr P. Dilley (from 13 May 2011)
- ▶ Ms R. Lomax
- ▶ Baroness Manningham-Buller (until 15 July 2011)
- ▶ Mr J.H.M. Newsum
- ▶ Mr S. Newton
- ▶ Ms K. Owen
- ▶ The Lord Tugendhat

### Ex-Officio:

- ▶ Rector: Sir Keith O'Nions
- ▶ Deputy Rector: Professor S. Richardson
- ▶ Chief Financial Officer (Acting): Mr A. Murphy (1 January–31 October 2011)
- ▶ Chief Financial Officer: Mr M. Sanderson (from 1 November 2011)

### Senior Staff Representatives:

- ▶ Professor D.K.H. Begg
- ▶ Professor M. Dallman
- ▶ Dr M.P. Knight (until 31 December 2010)
- ▶ Professor Sir Peter Knight (until 30 September 2010)
- ▶ Professor J. Magee (from 1 January 2011)
- ▶ Professor Sir Anthony Newman Taylor (from 1 December 2010)
- ▶ Professor S.K. Smith (until 31 November 2010)

### Elected Staff Member:

- ▶ Professor J. Kramer

### President, Imperial College Union:

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

### Clerk to the Court and Council:

- ▶ Dr R.F. Eastwood

## Audit Committee

### Chairman:

- ▶ Mrs P. Coultie

### 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 Committee

### Chairman:

- ▶ The Lord Kerr of Kinlochard (until 15 July 2011)
- ▶ Baroness Manningham-Buller (from 16 July 2011)

### Membership:

- ▶ Sir Peter Gershon (until 30 September 2010)
- ▶ Baroness Manningham-Buller (until 15 July 2011)
- ▶ Ms K. Owen (from 1 October 2010)
- ▶ The Lord Tugendhat (from 1 October 2010)

### Secretaries:

- ▶ Ms L. Lindsay

## College Fund Board

### Chairman:

- ▶ Mr S. Newton

### Membership:

- ▶ Professor D.K.H. Begg
- ▶ Dr M.P. Knight (until 31 December 2010)
- ▶ Mr N. Moakes
- ▶ Mr J. Newsum (from 11 February 2011)
- ▶ Sir Keith O'Nions
- ▶ The Hon. R. Rayne
- ▶ Professor S. Richardson (from 11 February 2011)

### Secretary:

- ▶ Ms J. Soulieux

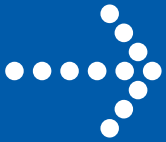


The College Fund Board. From top, left to right: Mr Stewart Newton, Professor David Begg, Dr Martin Knight, Mr Nick Moakes, Mr Jeremy Newsum, Sir Keith O'Nions, The Hon. Robert Rayne, Professor Stephen Richardson.



Undergraduate Department of Earth Science and Engineering students in the Surface Processes module being taught by Professor Sanjeev Gupta.

# Financial year 2010–11



# Independent auditors' report

## Independent auditors' report to the Council of Imperial College London

We have audited the Group and College financial statements (the 'financial statements') of Imperial College London for the year ended 31 July 2011, which comprise the Consolidated Income and Expenditure Account, the Consolidated and College Balance Sheets, the Consolidated Cash Flow Statement, the Statement of Consolidated Total Recognised Gains and Losses and the related notes. The financial reporting framework that has been applied in their preparation is applicable law and United Kingdom accounting standards (United Kingdom Generally Accepted Accounting Practice).

## Respective responsibilities of the Council and auditors

As explained more fully in the statement of Responsibilities of the Council on page 32, the Council is responsible for the preparation of the financial statements and for being satisfied that they give a true and fair view. Our responsibility is to audit and express an opinion on the financial statements in accordance with applicable law and International Standards on Auditing (UK and Ireland). Those standards require us to comply with the Auditing Practices Board's Ethical Standards for Auditors.

This report, including the opinions, has been prepared for and only for the Council, as a body in accordance with the Charters and Statutes of the College, and for no other purpose. We do not, in giving these opinions, accept or assume responsibility for any other purpose or to any other person to whom this report is shown or into whose hands it may come save where expressly agreed by our prior consent in writing.

## Scope of the audit of the financial statements

An audit involves obtaining evidence about the amounts and disclosures in the financial statements sufficient to give reasonable assurance that the financial statements are free from material misstatement, whether caused by fraud or error. This includes an assessment of: whether the accounting policies are appropriate to the Group's and College's circumstances and have been consistently applied and adequately disclosed; the reasonableness of significant accounting estimates made by the Council; and the overall presentation of the financial statements.

In addition, we read all the financial and non-financial information in the Annual Report and Accounts to identify material inconsistencies with the audited financial statements. If we become aware of any apparent material misstatements or inconsistencies we consider the implications for our report.

## Opinion on financial statements

In our opinion the financial statements:

- give a true and fair view of the state of the Group's and College's affairs as at 31 July 2011 and of the Group's income and expenditure, recognised gains and losses, and cash flows for the year then ended;
- have been properly prepared in accordance with United Kingdom Generally Accepted Accounting Practice; and
- have been prepared in accordance with the *Statement of Recommended Practice: Accounting for Further and Higher Education*.

## Opinion on other matters prescribed in the HEFCE Audit Code of Practice issued under the Further and Higher Education Act 1992

In our opinion, in all material respects:

- funds from whatever source administered by the College for specific purposes have been properly applied to those purposes and, if relevant, managed in accordance with relevant legislation;
- 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 and any other terms and conditions attached to them.

## Matters on which we are required to report by exception

We have nothing to report in respect of the following matter where the HEFCE Audit Code of Practice issued under the Further and Higher Education Act 1992 requires us to report to you if, in our opinion:

- the statement of internal control (included as part of the Corporate Governance Statement) is inconsistent with our knowledge of the College and Group.

PricewaterhouseCoopers LLP  
Chartered Accountants and Registered Auditors  
London  
25 November 2011

# Consolidated income and expenditure account

For the year ended 31 July 2011

	Note	2011 £m	2010 £m
<b>Income</b>			
Funding Council grants	1	168.6	172.2
Academic fees and support grants	2	137.9	120.9
Research grants and contracts	3	299.2	296.8
Other operating income	4	93.7	89.1
Endowment and investment income	5	5.6	15.0
<b>Total income</b>		<b>705.0</b>	<b>694.0</b>
Less: share of income from joint venture		(0.8)	(0.8)
<b>Net income</b>		<b>704.2</b>	<b>693.2</b>
<b>Expenditure</b>			
Staff costs	6	363.6	357.7
Restructuring costs	6	1.4	1.7
Depreciation	9	45.9	44.1
Other operating expenses	7	243.2	241.6
Interest and other finance costs	8	6.3	6.1
<b>Total expenditure</b>	9	<b>660.4</b>	<b>651.2</b>
<b>Surplus after depreciation of fixed assets at valuation and before tax</b>		<b>43.8</b>	<b>42.0</b>
Share of associates' operating results		(1.8)	0.1
Share of operating profit in joint venture		–	0.2
<b>Surplus after depreciation of assets at valuation and tax</b>		<b>42.0</b>	<b>42.3</b>
Minority interest	29	1.2	(0.9)
<b>Surplus before exceptional items</b>		<b>43.2</b>	<b>41.4</b>
<b>Exceptional items: continuing operations</b>			
Exceptional income from sale of fixed asset land and buildings	30	18.2	–
Exceptional profit/(loss) on deemed disposal of interests in group undertakings	25, 30	32.7	(1.2)
<b>Surplus on continuing operations after depreciation, exceptional items and tax</b>		<b>94.1</b>	<b>40.2</b>
Transfer from accumulated income within endowments	14	0.6	1.1
<b>Surplus for the year retained within general reserves</b>		<b>94.7</b>	<b>41.3</b>

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 2011

Surplus on continuing operations before taxation	<b>94.1</b>	40.2
Realisation of revaluation gains of prior years on fixed asset investments sold in the year	<b>(0.5)</b>	(0.1)
<b>Historical cost surplus for the year before tax</b>	<b>93.6</b>	40.1
<b>Historical cost surplus for the year after taxation</b>	<b>93.6</b>	40.1

# Balance sheets

as at 31 July 2011

	Note	Consolidated		College	
		2011 £m	2010 £m	2011 £m	2010 £m
<b>Fixed assets</b>					
Tangible assets	11	830.4	803.5	818.3	792.4
Investments	12, 28	89.4	64.8	40.0	28.5
Investments in joint venture:					
Share of gross assets	13	0.6	0.7	-	-
Share of gross liabilities	13	(0.4)	(0.5)	-	-
		<b>920.0</b>	<b>868.5</b>	<b>858.3</b>	<b>820.9</b>
<b>Endowment asset investments</b>	14	<b>75.6</b>	<b>58.8</b>	<b>75.1</b>	<b>58.8</b>
<b>Current assets</b>					
Stocks		0.4	0.4	0.2	0.2
Debtors	15	130.6	124.8	139.6	128.7
Investments and short-term deposits	26	115.0	79.6	115.0	65.0
Cash at bank and in hand	26	128.2	96.2	123.8	87.0
		<b>374.2</b>	<b>301.0</b>	<b>378.6</b>	<b>280.9</b>
<b>Creditors: amounts falling due within one year</b>	16	<b>(334.9)</b>	<b>(303.7)</b>	<b>(334.4)</b>	<b>(303.1)</b>
<b>Net current assets / (liabilities)</b>		<b>39.3</b>	<b>(2.7)</b>	<b>44.2</b>	<b>(22.2)</b>
<b>Total assets less current liabilities</b>		<b>1,034.9</b>	<b>924.6</b>	<b>977.6</b>	<b>857.5</b>
<b>Creditors: amounts falling due after more than one year</b>	17	<b>(159.7)</b>	<b>(166.2)</b>	<b>(159.7)</b>	<b>(165.5)</b>
<b>Provisions for liabilities and charges</b>	18	<b>(32.0)</b>	<b>(13.8)</b>	<b>(32.0)</b>	<b>(13.8)</b>
<b>Total net assets excluding pension asset</b>		<b>843.2</b>	<b>744.6</b>	<b>785.9</b>	<b>678.2</b>
<b>Pension asset</b>	34	-	-	-	-
<b>Total net assets including pension asset</b>		<b>843.2</b>	<b>744.6</b>	<b>785.9</b>	<b>678.2</b>



	Note	Consolidated		College	
		2011 £m	2010 £m	2011 £m	2010 £m
Represented by:					
<b>Deferred capital grants</b>	19	<b>405.1</b>	<b>387.9</b>	<b>402.4</b>	<b>385.1</b>
<b>Endowments</b>					
Expendable	20	<b>23.2</b>	17.1	<b>23.0</b>	17.1
Permanent	20	<b>52.4</b>	41.7	<b>52.1</b>	41.7
		<b>75.6</b>	58.8	<b>75.1</b>	58.8
<b>Revaluation reserve</b>	22	<b>7.2</b>	4.0	<b>7.2</b>	4.0
<b>General reserves</b>					
Income and expenditure account	21, 22	<b>355.3</b>	256.5	<b>301.2</b>	230.3
Share based payments	22	–	4.7	–	–
Pension reserve	22	–	–	–	–
<b>General reserves including pension reserve</b>		<b>355.3</b>	261.2	<b>301.2</b>	230.3
<b>Total College funds</b>		<b>843.2</b>	711.9	<b>785.9</b>	678.2
<b>Minority interest</b>	29	–	32.7	–	–
<b>Total funds</b>		<b>843.2</b>	744.6	<b>785.9</b>	678.2

The financial statements on pages 37 to 62 were approved by the Council on 25 November 2011 and signed on their behalf by:

Baroness Manningham-Buller, Chair

Sir Keith O’Nions, Rector

Mr Muir Sanderson, Chief Financial Officer

# Consolidated cash flow statement

For the year ended 31 July 2011

	Note	2011 £m	2010 £m
<b>Net cash inflow from operating activities</b>	24	<b>120.1</b>	<b>57.9</b>
<b>Returns on investments and servicing of finance</b>			
Income received from endowments		1.1	1.1
Income received from short-term investments		3.7	6.0
Income received from fixed asset investments		0.5	–
Other interest received		0.6	0.4
Interest paid		(5.8)	(6.0)
		<b>0.1</b>	<b>1.5</b>
<b>Capital expenditure and financial investment</b>			
Payments to acquire tangible assets		(75.2)	(117.4)
Purchase of fixed asset investments		(16.6)	(22.0)
Acquisition of endowment assets		(10.8)	(6.2)
Total payments to acquire fixed and endowment asset investments		<b>(102.6)</b>	<b>(145.6)</b>
Receipts from disposal of tangible assets		21.6	–
Receipts from disposal of fixed asset investments		3.1	12.8
Receipts from disposal of endowment assets		2.5	1.9
Deferred capital grants received		32.9	59.1
Endowments received		9.6	1.8
		<b>(32.9)</b>	<b>(70.0)</b>
<b>Acquisitions and disposals</b>			
Payments to acquire an associate		(0.8)	–
Receipts from disposal of a subsidiary		5.6	–
Cash transferred on disposal of a subsidiary		(8.8)	–
Receipts from disposal of an associate		0.6	–
Receipts on issue of shares to minority interests		–	0.1
		<b>(3.4)</b>	<b>0.1</b>
<b>Management of liquid resources</b>		<b>(41.6)</b>	<b>80.7</b>
<b>Financing</b>			
Net mortgages and loans repaid		(5.8)	(1.9)
Settlement of options		–	(0.1)
		<b>(5.8)</b>	<b>(2.0)</b>
<b>Increase in cash</b>	26	<b>36.5</b>	<b>68.2</b>

## Reconciliation of net cash flow to movement in net funds

For the year ended 31 July 2011

	Note	2011 £m	2010 £m
Increase in cash in the period		36.5	68.2
Increase/(decrease) in short-term investments		35.4	(80.7)
Loan repayments		5.8	1.9
Change in net funds		<b>77.7</b>	<b>(10.6)</b>
Net funds at 1 August		<b>17.3</b>	<b>27.9</b>
Net funds at 31 July	26	<b>95.0</b>	<b>17.3</b>

# Statement of consolidated total recognised gains and losses

For the year ended 31 July 2011

	Note	2011 £m	2010 £m
Surplus on continuing operations after depreciation, exceptional items and tax		94.1	40.2
Increase in market value of endowment asset investments	14, 20	7.4	2.1
Net endowment additions	14, 20	10.0	1.8
Revaluation of investments within fixed assets		2.7	(0.9)
Transfer from deferred capital grants		–	4.3
Movement in share based payment reserve	22	(0.1)	(0.1)
<b>Total recognised gains relating to the year</b>		<b>114.1</b>	<b>47.4</b>
Opening reserves and endowments		324.0	
<b>Total recognised gains relating to the year</b>		<b>114.1</b>	
<b>Closing reserves and endowments</b>		<b>438.1</b>	

# 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, for the financial year to 31 July 2011. 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. The College's investment in Imperial Innovations has been consolidated as a subsidiary up until the date of its deemed disposal on 24 January 2011. Thereafter it has been equity accounted for as an associated undertaking. 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 2011 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, 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 expensed 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.

## 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, a subsidiary of the College until 24 January 2011, 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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<b>1. Funding Council grants</b>	Note	<b>2011 £m</b>	<b>2010 £m</b>
Recurrent – teaching		<b>54.8</b>	57.1
Recurrent – research		<b>94.1</b>	92.8
Moderation of teaching and research		–	3.9
Higher Education Innovation Fund (HEIF)		<b>1.3</b>	1.5
Project capital allocations		<b>25.4</b>	62.0
Other specific grants		<b>2.3</b>	2.4
<hr/>			
Grants from Higher Education Funding Council for England (HEFCE)		<b>177.9</b>	219.7
Joint Information Systems Committee (JISC)		<b>0.1</b>	–
Transferred to deferred capital grants in the year			
Buildings	19	<b>(17.6)</b>	(61.8)
Equipment	19	<b>(7.8)</b>	(0.2)
Deferred capital grants released in the year			
Buildings	19	<b>11.6</b>	11.0
Equipment	19	<b>4.4</b>	3.5
<hr/>		<b>168.6</b>	172.2

<b>2. Academic fees and support grants</b>	<b>Registered student numbers</b>		<b>2011 £m</b>	<b>2010 £m</b>
	<b>31 Dec 2010</b>	<b>31 Dec 2009</b>		
Full-time home and European Union students	<b>9,795</b>	9,539	<b>32.9</b>	31.3
Full-time overseas students	<b>4,169</b>	3,934	<b>88.2</b>	75.1
Part-time students	<b>1,251</b>	1,094	<b>6.0</b>	5.5
Research training support grants			<b>7.0</b>	5.7
Short course fees			<b>3.8</b>	3.3
<hr/>			<b>137.9</b>	120.9

Research training support grants include £3.3 million (£2.7 million in 2010) of tuition fees paid in respect of full-time home and European Union students.

Total numbers of full-time and part-time students are 15,215 in 2011 and 14,567 in 2010 (excluding those on Research Training Support Grants and short courses).

<b>3. Research grants and contracts</b>	<b>2011 £m</b>	<b>2010 £m</b>
UK research councils	102.7	104.4
UK government departments, local and health authorities	43.5	38.5
UK industry, commerce and public corporations	18.2	19.6
UK charities	68.7	70.2
UK other	0.9	0.8
European Commission	23.3	20.0
Other European Union and overseas	41.9	43.3
	<b>299.2</b>	<b>296.8</b>
Research income relating to the direct expenditure incurred during the year	244.0	241.6
Contributions towards overhead costs	55.2	55.2
	<b>299.2</b>	<b>296.8</b>

Total research income excludes £8.4 million (£9.9 million in 2010) deferred capital grants received in 2011 but includes £8.5 million (£8.4 million in 2010) 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 2011 includes £13.1 million (2010: £13.1 million) to fund an interdisciplinary study of the natural environments, focusing on biodiversity and the skills, tools and training associated with the identification and recording of flora and fauna. Of this total awarded, £10.1 million (2010: £7.0 million) had been received as at 31 July 2011 from the funder. A total of £8.7 million has been spent and recognised as income for the project to date (£2.9 million by the College, and £5.8 million by unrelated third party partners). Of the amounts recorded as income to date by College £1.0 million was recognised in the year to 31 July 2011 (2010: £0.7 million).

<b>4. Other operating income</b>	<b>2011 £m</b>	<b>2010 £m</b>
Health and hospital authorities	16.9	17.0
Consultancies and scientific services	9.6	10.5
Donations	3.6	3.1
Residences, catering and conferences	31.1	27.2
Income from exploitation of intellectual property	1.0	2.2
Rents receivable	5.4	4.1
Commissions and fees	1.7	1.8
Other departmental income	9.0	8.0
Released from deferred capital grants on land and buildings	1.7	1.6
Released from deferred capital grants on equipment	0.1	0.1
Other income	13.6	13.5
	<b>93.7</b>	<b>89.1</b>

<b>5. Endowment and investment income</b>	Note	<b>2011 £m</b>	<b>2010 £m</b>
Income from expendable endowment investments	20	0.4	0.3
Income from permanent endowment investments	20	0.8	0.8
Income from long-term investments		0.5	9.0
Income from short-term investments		3.4	4.5
Other interest receivable		0.5	0.4
		<b>5.6</b>	<b>15.0</b>

## Notes to the accounts

<b>6. Staff</b>	Note	<b>2011 £m</b>	2010 £m
Staff costs			
Wages and salaries		<b>301.2</b>	296.9
Social security costs		<b>25.9</b>	25.3
Other pension costs	34	<b>36.5</b>	35.5
		<b>363.6</b>	357.7
Restructuring costs		<b>1.4</b>	1.7
		<b>365.0</b>	359.4
		<b>2011 £000</b>	2010 £000
Emoluments of the Rector			
Remuneration		<b>296</b>	299
Social security costs		<b>38</b>	37
Other		<b>20</b>	12
		<b>354</b>	348
Employer's pension contributions		–	19
		<b>354</b>	367

The Rector has elected not to join the pension scheme and therefore no employer's contributions have been paid.

Aggregate payments for compensation for loss of office paid to senior members of staff earning in excess of £100,000 per annum (three in 2011, eight in 2010);

	<b>2011 £000</b>	2010 £000
Payments in respect of loss of office	<b>105</b>	626
Benefits in kind	–	90
	<b>105</b>	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. All compensation in respect of loss of office has been internally funded by the College.

Benefits in kind in 2010 included 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.

	<b>Full-Time Equivalent</b>		<b>Headcount</b>	
	<b>2011 Number</b>	2010 Number	<b>2011 Number</b>	2010 Number
Staff numbers by major category				
Research and education	<b>3,426</b>	3,365	<b>3,594</b>	3,527
Professional services	<b>2,181</b>	2,162	<b>2,366</b>	2,362
Technical services	<b>568</b>	559	<b>584</b>	577
Operational services	<b>542</b>	527	<b>608</b>	594
Learning and teaching	<b>19</b>	–	<b>21</b>	–
	<b>6,736</b>	6,613	<b>7,173</b>	7,060

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 Imperial College Union.



Remuneration of higher paid staff (excluding the Rector) for	2011 Number	Restated 2010 Number
£100,000–£109,999	57	54
£110,000–£119,999	32	40
£120,000–£129,999	30	27
£130,000–£139,999	29	17
£140,000–£149,999	29	23
£150,000–£159,999	23	24
£160,000–£169,999	14	19
£170,000–£179,999	19	18
£180,000–£189,999	11	11
£190,000–£199,999	9	12
£200,000–£209,999	2	5
£210,000–£219,999	5	5
£220,000–£229,999	1	2
£230,000–£239,999	2	4
£240,000–£249,999	2	1
£250,000–£259,999	1	1
£260,000–£269,999	–	–
£270,000–£279,999	3	1
£280,000–£289,999	–	–
£290,000–£299,999	1	1
£300,000–£309,999	1	1
£310,000–£319,999	1	–

Remuneration of higher paid staff excludes employer's pension and National Insurance contributions but includes NHS Distinction Awards.

<b>7. Other operating expenses</b>	2011 £m	2010 £m
Research grants and contracts	93.4	99.5
Consultancies and scientific services	1.5	3.6
Short courses	1.6	1.8
General expenditure in academic departments	36.0	34.6
Residences, catering and conferences	17.2	14.3
Central support services	16.7	21.2
Fellowships, scholarships and prizes	8.3	8.2
Books, periodicals and other library expenditure	6.6	6.3
Facilities and maintenance of premises	40.1	46.9
Auditors' remuneration	0.2	0.2
Auditors' fees in respect of non-audit services	–	0.1
Other, including Imperial College Union	21.6	4.9
	<b>243.2</b>	<b>241.6</b>

<b>8. Interest and other finance costs</b>	2011 £m	2010 £m
Bank and other loans wholly repayable after more than one year	5.8	5.6
Other financing costs	0.5	0.5
	<b>6.3</b>	<b>6.1</b>

## Notes to the accounts

<b>9. Analysis of expenditure by activity</b>	Staff costs £m	Depreciation £m	Other operating expenses £m	Interest and other finance costs £m	2011 Total £m	2010 Total £m
Academic departments	150.3	2.3	37.6	0.1	<b>190.3</b>	187.4
Academic services:						
Libraries and information services	3.9	–	6.6	–	<b>10.5</b>	10.4
Central computer and computer networks	10.5	0.9	4.6	–	<b>16.0</b>	17.0
Other	6.4	–	4.3	–	<b>10.7</b>	16.2
Total academic services	20.8	0.9	15.5	–	<b>37.2</b>	43.6
Research grants and contracts	142.1	8.5	93.4	–	<b>244.0</b>	241.5
Residences, catering and conferences	7.4	4.7	17.2	–	<b>29.3</b>	26.0
Premises	12.9	28.8	40.2	–	<b>81.9</b>	88.1
Administration and central services:						
Central administration	17.5	0.1	3.8	–	<b>21.4</b>	22.2
General educational expenditure	2.8	–	10.9	–	<b>13.7</b>	12.9
Staff and student facilities	4.8	0.6	4.9	–	<b>10.3</b>	11.0
Total administration and central services	25.1	0.7	19.6	–	<b>45.4</b>	46.1
Other expenditure:						
Consultancies and scientific services	4.2	–	1.5	–	<b>5.7</b>	8.2
Other, including restructuring costs	2.2	–	18.2	6.2	<b>26.6</b>	10.3
Total other expenditure	6.4	–	19.7	6.2	<b>32.3</b>	18.5
	<b>365.0</b>	<b>45.9</b>	<b>243.2</b>	<b>6.3</b>	<b>660.4</b>	<b>651.2</b>
The depreciation charge has been funded by:	Note	£m				
Deferred capital grants released	19	26.2				
General income		19.7				
Total depreciation charge		45.9				

<b>10. Segmental reporting</b>	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
<b>Year ended 31 July 2011</b>						
Education and research	694.4	0.3	<b>694.1</b>	<b>41.6</b>	<b>1,137.2</b>	<b>640.3</b>
College Fund	8.2	0.1	<b>8.1</b>	<b>4.1</b>	<b>173.9</b>	<b>144.2</b>
Imperial Innovations Group plc	2.3	0.2	<b>2.1</b>	<b>(3.7)</b>	<b>58.7</b>	<b>58.7</b>
	<b>704.9</b>	<b>0.6</b>	<b>704.3</b>	<b>42.0</b>	<b>1,369.8</b>	<b>843.2</b>
<b>Year ended 31 July 2010</b>						
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
	<b>695.7</b>	<b>2.5</b>	<b>693.2</b>	<b>42.3</b>	<b>1,228.3</b>	<b>744.6</b>

The Education and research segment represents 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 is an intellectual property, incubation and investment subsidiary company 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 GAAP 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. The undertaking was consolidated in these financial statements as a subsidiary until 24 January 2011. After this date the College's investment has been equity accounted as an associated undertaking (see note 25). The totals in the segmental analysis table above reflect this treatment.

**11. Tangible assets**

	<b>Consolidated</b>				
	Land and buildings		Fixtures, fittings, tools and equipment £m	Assets under construction £m	<b>Total £m</b>
	Freehold £m	Leasehold £m			
<b>Cost</b>					
At 1 August 2010	460.0	413.9	175.4	94.5	1,143.8
Additions	5.9	5.4	5.6	60.0	76.9
Transfers	1.2	31.5	10.5	(43.2)	–
Disposals	(3.8)	(3.4)	(2.5)	–	(9.7)
At 31 July 2011	<b>463.3</b>	<b>447.4</b>	<b>189.0</b>	<b>111.3</b>	<b>1,211.0</b>
<b>Depreciation</b>					
At 1 August 2010	92.1	123.0	125.2	–	340.3
Charge for year	12.8	16.7	16.4	–	45.9
Eliminated on disposals	–	(3.2)	(2.4)	–	(5.6)
At 31 July 2011	<b>104.9</b>	<b>136.5</b>	<b>139.2</b>	<b>–</b>	<b>380.6</b>
<b>Net book value</b>					
At 31 July 2011	<b>358.4</b>	<b>310.9</b>	<b>49.8</b>	<b>111.3</b>	<b>830.4</b>
At 1 August 2010	367.9	290.9	50.2	94.5	803.5
	<b>College</b>				
	Land and buildings		Fixtures, fittings, tools and equipment £m	Assets under construction £m	<b>Total £m</b>
<b>Cost</b>	Freehold £m	Leasehold £m			
At 1 August 2010	460.0	401.3	173.3	93.9	1,128.5
Additions	5.9	5.3	5.5	58.4	75.1
Transfers	1.2	29.3	10.5	(41.0)	–
Disposals	(3.8)	(3.4)	(2.4)	–	(9.6)
At 31 July 2011	<b>463.3</b>	<b>432.5</b>	<b>186.9</b>	<b>111.3</b>	<b>1,194.0</b>
<b>Depreciation</b>					
At 1 August 2010	92.1	120.6	123.4	–	336.1
Charge for year	12.8	16.1	16.2	–	45.1
Eliminated on disposals	–	(3.2)	(2.3)	–	(5.5)
At 31 July 2011	<b>104.9</b>	<b>133.5</b>	<b>137.3</b>	<b>–</b>	<b>375.7</b>
<b>Net book value</b>					
At 31 July 2011	<b>358.4</b>	<b>299.0</b>	<b>49.6</b>	<b>111.3</b>	<b>818.3</b>
At 1 August 2010	367.9	280.7	49.9	93.9	792.4

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 (GSK) and the Medical Research Council (MRC) 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 2011 is a heritage asset, being the nineteenth century Queen's Tower, currently insured at a value of £9.8 million (2010: £8.4 million).

# Notes to the accounts

12. Investments	Note	Consolidated		College	
		2011 £m	2010 £m	2011 £m	2010 £m
Investment in subsidiary companies at cost		–	–	4.0	9.2
Investment in other associated undertakings		59.3	0.7	6.0	0.1
Other fixed asset investments	28	30.1	64.1	30.0	19.2
		<b>89.4</b>	<b>64.8</b>	<b>40.0</b>	<b>28.5</b>

As at 31 July 2011 the College's direct equity holdings in subsidiary and principal associated undertakings were as follows:

Undertaking	Activity	Holding %
<b>Subsidiaries</b>		
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
Wye Foundation Trust	Charitable Trust	100.0
Extracalm Cleaning LLP	Cleaning services partnership	partnership
<b>Joint ventures</b>		
Bio Nano Centre Ltd	Development of biomedical and nanotechnology-based products (see note 13)	50.0
<b>Associates</b>		
Imperial Innovations Group plc	Commercialisation of ideas and inventions	30.3
Imanova Ltd	Environmental consultancy and scientific services	25.0
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 2011 a 33.5% equity interest in both Winstanley 1 Ltd and Winstanley 2 Ltd was included within endowment assets, with a remaining equity interest of 15.5% being included within the College's fixed asset investments. A 34.1% interest in the Woodlands 1 LLP was included within endowment assets, with a remaining interest of 15.8% included within fixed asset investments.

The College's investment in Imperial Innovations fell from 50.4% to 30.3% on 24 January 2011, following a rights issue. The College's investment in Imperial Innovations has been equity accounted for as an associate from that date (see note 25).

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 2011 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 1 Aug 2010 £m	Disposals £m	Additions £m	Net expenditure from capital £m	Transfers between investments £m	Increase/ (decrease) in market value £m	Balance 31 July 2011 £m
UK equities	5.2	-	-	-	1.3	(0.8)	5.7
International equities	24.6	-	-	-	3.1	2.5	30.2
Absolute return investments	5.5	-	-	-	(0.3)	(0.1)	5.1
Long/short UK equities fund	2.0	-	-	-	(2.2)	0.2	-
Associate property partnerships	4.0	-	-	-	6.3	5.5	15.8
Investment property	0.9	-	-	-	-	-	0.9
Investment income receivable	0.1	-	-	-	0.1	-	0.2
Short term investments/cash	16.5	-	9.6	(0.6)	(8.3)	-	17.2
<b>Total College</b>	<b>58.8</b>	<b>-</b>	<b>9.6</b>	<b>(0.6)</b>	<b>-</b>	<b>7.3</b>	<b>75.1</b>
Endowments held by subsidiary undertakings:							
UK equities	-	-	0.3	-	-	0.1	0.4
Short term investments/cash	-	-	0.1	-	-	-	0.1
<b>Total consolidated</b>	<b>58.8</b>	<b>-</b>	<b>10.0</b>	<b>(0.6)</b>	<b>-</b>	<b>7.4</b>	<b>75.6</b>
Fixed interest and equities at cost	55.1						66.5

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### 15. Debtors

#### Consolidated

#### College

	2011 £m	2010 £m	2011 £m	2010 £m
<b>Amounts falling due within one year</b>				
Amounts due on research grants and contracts				
Debtors	22.0	20.0	22.0	20.0
Work in progress	46.9	48.8	46.9	48.8
Other debtors	48.6	40.9	46.4	36.4
Prepayments and accrued income	14.3	15.6	13.9	13.0
Amounts owed by group undertakings	-	-	11.6	11.0
Provision for bad debts	(1.2)	(1.8)	(1.2)	(1.4)
	<b>130.6</b>	<b>123.5</b>	<b>139.6</b>	<b>127.8</b>
<b>Amounts falling due after more than one year</b>				
Prepayments and accrued income	-	1.3	-	0.9
	<b>130.6</b>	<b>124.8</b>	<b>139.6</b>	<b>128.7</b>

## Notes to the accounts

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16. Creditors: amounts falling due within one year	Consolidated		College	
	2011 £m	2010 £m	2011 £m	2010 £m
Bank overdraft	–	3.7	12.4	15.8
Loans repayable within one year	5.8	5.8	5.8	5.8
Research payments received on account	166.2	146.8	166.2	146.8
Creditors	17.1	12.9	15.1	11.0
Social security and other taxation payable	10.2	9.2	10.2	9.2
Accruals and deferred income	135.6	125.3	120.9	110.5
Amounts owed to group undertakings	–	–	3.8	4.0
	<b>334.9</b>	<b>303.7</b>	<b>334.4</b>	<b>303.1</b>

17. Creditors: amounts falling due after more than one year	Consolidated		College	
	2011 £m	2010 £m	2011 £m	2010 £m
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	136.6	142.4	136.6	142.4
University Challenge Fund grants and Revenue Share Liability	–	0.7	–	–
	<b>159.7</b>	<b>166.2</b>	<b>159.7</b>	<b>165.5</b>

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

18. Provisions for liabilities and charges	Restructuring provision £m	Decommissioning of engineering facility £m	Total £m
<b>Consolidated and College</b>			
At 1 August 2010	4.5	9.3	13.8
Provided in the year	0.8	20.1	20.9
Utilised / written back in the year	(3.0)	(0.2)	(3.2)
Unwinding of the discount	–	0.5	0.5
At 31 July 2011	<b>2.3</b>	<b>29.7</b>	<b>32.0</b>

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

During the year the Council approved to the decision to terminate operations at its specialist engineering facility and the College commenced a 12-year project to decommission. As a consequence the costs of decommissioning have been reassessed resulting in an increase in the provision of £20.1 million.

19. Deferred capital grants	Note	Consolidated		College	
		HEFCE and JISC grants £m	Other grants and benefactions £m	Total £m	Total £m
At 1 August 2010					
Buildings		278.9	79.2	358.1	355.4
Equipment		17.7	12.1	29.8	29.7
<b>Total</b>		<b>296.6</b>	<b>91.3</b>	<b>387.9</b>	<b>385.1</b>
Cash receivable					
Buildings—specific funding (including transfers)		17.6	12.9	30.5	30.5
Equipment—specific funding		7.8	5.3	13.1	13.1
<b>Total</b>		<b>25.4</b>	<b>18.2</b>	<b>43.6</b>	<b>43.6</b>
Eliminated on disposals					
Buildings—specific funding		–	(0.1)	(0.1)	(0.1)
Equipment—specific funding		–	(0.1)	(0.1)	(0.1)
<b>Total</b>		<b>–</b>	<b>(0.2)</b>	<b>(0.2)</b>	<b>(0.2)</b>
Released to income and expenditure account					
Buildings		(11.6)	(4.2)	(15.8)	(15.7)
Equipment		(4.4)	(6.0)	(10.4)	(10.4)
<b>Total</b>	9	<b>(16.0)</b>	<b>(10.2)</b>	<b>(26.2)</b>	<b>(26.1)</b>
At 31 July 2011					
Buildings		<b>284.9</b>	<b>87.8</b>	<b>372.7</b>	<b>370.1</b>
Equipment		<b>21.1</b>	<b>11.3</b>	<b>32.4</b>	<b>32.3</b>
<b>Total</b>		<b>306.0</b>	<b>99.1</b>	<b>405.1</b>	<b>402.4</b>

## Notes to the accounts

### 20. Endowments

#### Consolidated and College

	Unrestricted permanent £m	Restricted permanent £m	Total permanent £m	Restricted expendable £m	2011 Total £m	2010 Total £m
At 1 August						
Capital	11.9	28.9	40.8	24.5	65.3	61.4
Adjustment for closed endowments	–	–	–	(0.4)	(0.4)	–
Accumulated income	(0.2)	1.1	0.9	(7.4)	(6.5)	(5.4)
Adjustment for closed endowments	–	–	–	0.4	0.4	–
	11.7	30.0	41.7	17.1	58.8	56.0
New endowments / transfers	(3.1)	8.7	5.6	4.4	10.0	1.8
Investment income	0.2	0.6	0.8	0.4	1.2	1.1
Expenditure	(0.2)	(0.6)	(0.8)	(1.0)	(1.8)	(2.2)
	–	–	–	(0.6)	(0.6)	(1.1)
Increase in market value	0.9	4.2	5.1	2.3	7.4	2.1
At 31 July	<b>9.5</b>	<b>42.9</b>	<b>52.4</b>	<b>23.2</b>	<b>75.6</b>	<b>58.8</b>
Represented by:						
Capital	9.7	41.8	51.5	30.8	82.3	65.3
Accumulated income	(0.2)	1.1	0.9	(7.6)	(6.7)	(6.5)
	<b>9.5</b>	<b>42.9</b>	<b>52.4</b>	<b>23.2</b>	<b>75.6</b>	<b>58.8</b>

#### College

	Unrestricted permanent £m	Restricted permanent £m	Total permanent £m	Restricted expendable £m	2011 Total £m	2010 Total £m
At 1 August						
Capital	11.9	28.9	40.8	24.5	65.3	61.4
Adjustment for closed endowments	–	–	–	(0.4)	(0.4)	–
Accumulated income	(0.2)	1.1	0.9	(7.4)	(6.5)	(5.4)
Adjustment for closed endowments	–	–	–	0.4	0.4	–
	11.7	30.0	41.7	17.1	58.8	56.0
New endowments / transfers	(3.1)	8.4	5.3	4.3	9.6	1.8
Investment income	0.2	0.6	0.8	0.4	1.2	1.1
Expenditure	(0.2)	(0.6)	(0.8)	(1.0)	(1.8)	(2.2)
	–	–	–	(0.6)	(0.6)	(1.1)
Increase in market value	0.9	4.2	5.1	2.2	7.3	2.1
At 31 July	<b>9.5</b>	<b>42.6</b>	<b>52.1</b>	<b>23.0</b>	<b>75.1</b>	<b>58.8</b>
Represented by:						
Capital	9.7	41.5	51.2	30.6	81.8	65.3
Accumulated income	(0.2)	1.1	0.9	(7.6)	(6.7)	(6.5)
	<b>9.5</b>	<b>42.6</b>	<b>52.1</b>	<b>23.0</b>	<b>75.1</b>	<b>58.8</b>

Included within endowments are a number of permanent funds with a deficit of accumulated income as at 31 July 2011. Within unrestricted permanent endowments these comprise three funds with a combined deficit balance of £0.2 million (2010: two funds with a deficit totalling £0.3 million). Within restricted permanent endowments there are 46 individual funds with a total combined deficit of £1.2 million (2010: 42 funds with a total combined deficit of £0.9 million). The College closely monitors funds in a deficit position and expects them to return to an accumulated income position over future years.



<b>21. Income and expenditure account</b>	<b>Consolidated £m</b>	<b>College £m</b>
Balance at 1 August 2010	256.5	230.3
Surplus after tax and minority interest	94.7	71.3
Transfers between reserves	4.1	(0.4)
Balance at 31 July 2011	<b>355.3</b>	<b>301.2</b>

<b>22. Statement of movements on reserves</b>	<b>Consolidated</b>				
	Balance 1 Aug 2010 £m	Surplus for the year £m	Transfer between reserves £m	Movement in year £m	Balance 31 July 2011 £m
Specific non-discretionary reserves					
Imperial College Union funds	1.9	–	(0.2)	–	1.7
Subsidiary and associate companies' reserves	24.3	–	28.1	–	52.4
	26.2	–	27.9	–	54.1
General income and expenditure reserve	230.3	94.7	(23.8)	–	301.2
Total income and expenditure reserves	256.5	94.7	4.1	–	355.3
Share based payments	4.7	–	(4.6)	(0.1)	–
Pension reserve	–	–	–	–	–
Total general reserves including pension reserve	261.2	94.7	(0.5)	(0.1)	355.3
Revaluation reserve	4.0	–	0.5	2.7	7.2
Total reserves	265.2	94.7	–	2.6	362.5

### 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 2011 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 £13.5 million and received research grants and contracts amounting to £46.9 million from such parties. Research grants include £24.6 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.

The Lord Kerr of Kinlochard is a member of the advisory board of BAE Systems plc. Research contract income includes £0.7 million from BAE Systems plc. The College also received £2.4 million of research contract income from AWE ML where Professor Donal Bradley is a co-chair. Research contract income also includes £1.5 million from BP plc and £0.9 million from Rolls-Royce plc where Mr Iain Conn is an executive director and non-executive director respectively.

A number of College employees also hold positions in Imperial College Healthcare NHS Trust. Professor Stephen Smith, Pro Rector (Health), was the Chief Executive of the Trust until May 2011. Professor Maggie Dallman is the member of the Trust as the University appointed non-executive director. Dr Rodney Eastwood is also a member of the Trust Board. Ms Claire Perry, Managing Director of Imperial College Healthcare NHS Trust, served on the College's Management Board until May 2011, when she was succeeded by Mr Mark Davies who is CEO of the Trust. Purchased goods and services include £7.5 million and research grant income includes £4.6 million from Imperial College Healthcare NHS Trust.

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.

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.

Dr M.P. Knight, Chief Operating Officer until 31 December 2010, is also the Chairman of the former College subsidiary Imperial Innovations and fees of £25k 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.

The Group has an interest in a number of joint ventures and associates the principal ones of which are disclosed in notes 12 and 30. Transactions occur with these entities in the normal course of business. The more significant transactions are disclosed here:

<b>Related party</b>	<b>Sales to related party</b>	<b>Purchases from related party</b>	<b>Amounts owed by related party</b>	<b>Amounts owed to related party</b>
Imperial Innovations	£527k	£179k	£929k	£13k

## Notes to the accounts

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<b>24. Reconciliation of consolidated operating surplus to net cash inflow from operating activities</b>	<b>2011 £m</b>	<b>2010 £m</b>
Surplus after depreciation of fixed assets at valuation and before tax	<b>43.8</b>	42.0
Depreciation	<b>45.9</b>	44.1
Deferred capital grants released to income	<b>(26.2)</b>	(24.7)
Endowment and investment income	<b>(5.6)</b>	(15.0)
Fair value loss on revaluation of fixed asset investments	<b>0.6</b>	3.4
Increase in stock option obligation	–	0.1
Interest payable	<b>6.3</b>	6.1
Increase in stocks	–	(0.1)
Increase in debtors	<b>(11.3)</b>	(32.4)
Increase in creditors	<b>48.9</b>	39.5
Increase / (decrease) in provisions	<b>17.7</b>	(5.1)
<b>Net cash inflow from operating activities</b>	<b>120.1</b>	57.9

<b>25. Disposal of subsidiary undertaking</b>	Note	<b>Disposals 2011 £m</b>	<b>Disposals 2010 £m</b>
Tangible assets		<b>0.1</b>	–
Other fixed asset investments		<b>50.4</b>	–
Investments and short term deposits		<b>6.2</b>	–
Cash at bank and in hand		<b>8.8</b>	–
Working capital		<b>(0.3)</b>	–
Creditors falling due in more than one year		<b>(1.6)</b>	–
Minority interests	29	<b>(31.5)</b>	–
Surplus on disposal	30	<b>32.8</b>	–
		<b>64.9</b>	
Retained interest in associate as at 24 January 2011		<b>59.3</b>	
Net cash proceeds received by the Group in relation to disposal of subsidiaries		<b>5.6</b>	–
		<b>64.9</b>	–

On 24 January 2011 the College's subsidiary, Imperial Innovations, raised net proceeds of £135 million from a two for three rights issue through which the company's total issued voting share capital increased to 99,651,035 shares from 59,790,621. The College did not take up its rights, instead selling warrants over them to an unrelated third party for net proceeds totalling £5.6 million (see note 30). As a consequence its percentage shareholding in the company fell from 50.4% to 30.3% and from 24 January 2011 the College's investment in Imperial Innovations has no longer been consolidated as a subsidiary in these financial statements. From that date, the investment has instead been equity accounted for as an associate.

<b>26. Analysis of changes in net funds</b>	Balance 1 Aug 2010 £m	Cash flow £m	Balance 31 Jul 2011 £m
Cash at bank and in hand	96.2	32.0	128.2
Endowment assets	16.5	0.8	17.3
Bank overdraft	(3.7)	3.7	–
	109.0	36.5	145.5
Short-term investments	79.6	35.4	115.0
Debt due within one year	(5.8)	–	(5.8)
Debt due after one year	(165.5)	5.8	(159.7)
	17.3	77.7	95.0

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

<b>27. Access funds</b>	2011 £000	2010 £000
Balance at start of the year	8	3
Funding Council grants	114	127
Interest earned	–	–
	122	130
Disbursements	(103)	(122)
Balance unspent at end of the year	19	8

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.

<b>28. Fixed asset investments</b>	Note	Balance 1 Aug 2010 £m	Movements in year £m	Balance 31 Jul 2011 £m
Subsidiary undertakings' investments		44.9	(44.8)	0.1
Other investments		19.2	10.8	30.0
Other fixed asset investments	12	64.1	(34.0)	30.1
Investments in associated undertakings		0.7	58.6	59.3
Fixed asset investments	12	64.8	24.6	89.4

### 29. Minority interest

The minority interest in 2010 related entirely to Imperial Innovations. Following Imperial Innovations' rights issue in January 2011, the Group's percentage investment decreased from 50.4% to 30.3% (see note 30).

	2011 £m	2010 £m
Balance at 1 August	32.7	31.4
(Loss) /profit after tax and minority interest	(1.2)	0.9
Revaluation of investments within fixed assets	–	(0.8)
Movement in share based payment reserve	–	(0.1)
Stock option exercise	–	0.1
Disposal of subsidiary	(31.5)	1.2
Balance at 31 July	–	32.7

	Note	2011 £m	2010 £m
<b>30. Exceptional items</b>			
Exceptional income from sale of land and buildings		18.2	–
Exceptional income from the deemed disposal of interest in a subsidiary undertaking	25	32.8	(1.2)
Exceptional loss from disposal of an associated undertaking		(0.1)	–
		50.9	(1.2)

Following the Imperial Innovations rights issue in January 2011, the Group's percentage investment decreased from 50.4% to 30.3%. The Group recorded a deemed profit £27.2 million in respect of the disposal in addition to net cash proceeds from the sale of warrants over its rights of £5.6 million (see note 25).

On 1 March 2011 the College sold a 150-year lease over land at its Imperial West site in White City to a related party, Woodlands 1 LLP (currently accounted for within fixed asset and endowment asset investments – see note 12) for proceeds totalling £22.0 million. The profit on disposal realised within these financial statements totalled £18.2 million.

### 31. Capital commitments

	Consolidated and College	
	2011 £m	2010 £m
Capital commitments for major building projects contracted at 31 July	5.6	45.3

### 32. Contingent assets and liabilities

The College has entered into rental guarantees with Winstanley 2 Ltd over 452 bedspaces in a postgraduate accommodation development at Clapham Junction for a minimum of 15 years from October 2011 and over 114 bedspaces from September 2012. The present value of the maximum potential liability to the College arising under these guarantees is estimated at approximately £58 million.

During the year the College signed an agreement in favour of Woodlands 1 LLP to enter into a rental guarantee over 606 bedspaces at a postgraduate accommodation development on the Imperial West site in White City. This guarantee is for a minimum of 15 years from October 2012. The present value of the maximum potential liability to the College arising under this guarantee is estimated at approximately £58 million. The agreement is contingent on completion of the accommodation at the specified date.

No amounts have been provided for as at 31 July 2011 in these financial statements in respect of these guarantees.

The College is involved in a number of legal cases. No material financial liabilities are anticipated.

### 33. Post balance sheet events

On 30 September 2011, the College sold its holdings in Winstanley 1 Ltd and Winstanley 2 Ltd (a company established to create 566 postgraduate student studio apartments) to Legal and General Pensions Ltd, an unrelated third party, for initial net proceeds totalling approximately £18 million. A further estimated £9 million of contingent consideration is receivable upon completion of phase 2 of the property – expected to take place in the autumn of 2012. Prior to the sale, the College's interests were held in the consolidated financial statements at fair value within fixed and endowment asset investments (see note 12 and 32).

As a corollary of the sale, the College entered into a long leasehold agreement with Legal and General Pensions Ltd, leasing the property developed by Winstanley 2 Ltd for a term of 45 years. The terms of the arrangement also provide the College with the benefit of a £1 option over the freehold at the end of the lease term. The College accordingly expects to recognise a long leasehold asset and related finance lease in respect of this agreement in its 2011–12 financial statements.

After the year end, on 11 October, the College entered into an agreement to join the Francis Crick Institute (FCI), formerly known as the UK Centre for Medical Research and Innovation, a joint venture established in 2010 between the Medical Research Council, the Wellcome Trust, Cancer Research UK and UCL, which aims to form an internationally leading biomedical research organisation in London. The College has committed £40 million as an equity investment to contribute to FCI's establishment costs. King's College London are also joining on the same terms.

No amounts have been recognised in respect of these transactions in the 2010–11 financial statements.

### 34. 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.

IC Consultants Ltd, a subsidiary of the College, operated 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.

It was announced in the budget on 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 142,000 active members and as at 31 March 2011 the College had 3,249 active members participating in the scheme.

The assets of the scheme are held in a separate trustee-administered fund. At the latest available 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 a 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 fluctuate and at 31 March 2011 the actuary has estimated that the funding level under the new scheme specific funding regime had fallen from 103% to 98%. On the FRS 17 basis, using an AA bond discount rate of 5.5% per annum based on spot yields, the actuary estimated that the funding level at 31 March 2011 was 86%. An estimate of the funding level measured on a buy-out basis at that date was approximately 54%. With effect from 1 October 2011, new joiners to the scheme will join the new revalued benefits section rather than the existing final salary section. This change will have an impact, expected to be positive, on the future funding levels.

The last formal triennial actuarial valuation took place as at 31 March 2011 and the results have not yet been published. It will incorporate allowance for scheme benefit changes and any changes the trustee

makes to the underlying actuarial assumptions. The contribution rate will be reviewed as part of each valuation and may be reviewed more frequently. The total pension cost for the college was £25.8 million (2010:£24.9 million). The contribution rate payable by the college was 16% of pensionable salaries.

The next formal triennial actuarial valuation is due as at 31 March 2014.

#### 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 scheme and pension costs are based on the amounts actually paid (i.e. cash amounts) in accordance with paragraphs 8–12 of FRS 17. SAUL is subject to triennial valuations by professionally qualified and independent actuaries. 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 above rates will be reviewed when the results of the last formal actuarial valuation (as at 31 March 2011) are known. The next formal actuarial valuation is due at 31 March 2014 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 2011 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.

# Notes to the accounts

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	
<b>Assumptions</b>		
<b>USS scheme</b>		
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)	
<b>SAUL scheme</b>		
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 2011 by a qualified independent actuary. Some of the insured policies were written in the names of individual members rather than the trustees. The policies in the members' names will no longer be a liability or an asset of the scheme and 2010 numbers have been restated accordingly.

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

Assumptions	2011	2010
Price inflation per annum	3.60%	3.40%
Salary inflation per annum	N/A	N/A
Rate of increase to pensions in payment at the 5% LPI rate	2.80%	3.20%
Rate used to discount scheme liabilities	5.30%	5.40%
RPI	3.60%	3.40%
Post retirement mortality assumption	PNxAoo(b=yob)lc	PxA92(b=yob)mc

The assets in the scheme and the expected rates of return	Rate of return		Market value	Restated market value
	2011	2010	£m	£m
Equities	7.50%	5.00%	1.4	1.5
Gilts	4.00%	4.30%	0.9	0.8
Corporate bonds	5.30%	4.30%	3.5	3.3
Insured annuity contracts	5.30%	5.40%	0.2	0.2
Cash	0.50%	0.50%	0.1	–
<b>Total fair value of assets</b>			<b>6.1</b>	<b>5.8</b>

Reconciliation of the present value of scheme liabilities and fair value of assets to the asset recognised in the Balance Sheet

	2011 £m	Restated 2010 £m
Fair value of assets	6.1	5.8
Value of liabilities	(4.5)	(4.5)
Funded status	1.6	1.3
Unrecognised pension asset	1.6	1.3

Amounts included within operating profit

	2011 £m	Restated 2010 £m
Current service cost	-	-
<b>Total operating charge</b>	-	-

The amounts to be included as other finance income

	2011 £m	Restated 2010 £m
Expected return on scheme assets	0.3	0.3
Interest on scheme liabilities	(0.2)	(0.2)
Effect of restriction on expected return	(0.1)	(0.1)
<b>Net finance return</b>	-	-

Changes in the present value of the defined benefit obligation

	2011 £m	Restated 2010 £m
Opening defined benefit obligation	(4.5)	(4.2)
Interest cost on obligation	(0.2)	(0.2)
Actuarial loss on obligation	-	(0.3)
Benefits paid	0.2	0.2
<b>Closing defined benefit obligation</b>	(4.5)	(4.5)

Changes in the present value of scheme assets

	2011 £m	Restated 2010 £m
Opening fair value of assets	5.8	5.3
Expected return	0.3	0.3
Actuarial loss	0.2	0.4
Member contributions	-	-
Benefits paid	(0.2)	(0.2)
<b>Closing fair value of scheme assets</b>	6.1	5.8

## Notes to the accounts

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Total amounts recognised in the Statement of total recognised gains and losses (STRGL)	2011 £m	2011 £m	Restated 2010 £m	Restated 2010 £m
Pension scheme asset at start of year		–		–
Actuarial loss on assumptions	(0.1)		(0.3)	
Actuarial gain on experience	0.1		–	
Actuarial gain on assets	0.2		0.4	
Surplus restriction	(0.3)		(0.2)	
Effect of restriction on expected return	0.1		0.1	
STRGL losses		–		–
<b>Pension scheme asset at end of year</b>		–		–

Actual return on scheme assets	2011 £m	Restated 2010 £m
Expected return on scheme assets	0.3	0.3
Actual return on scheme assets	0.5	0.7
<b>Actual less expected return on scheme assets</b>	0.2	0.4

Amounts for the current and previous four periods	2011 £m	Restated 2010 £m	Restated 2009 £m	Restated 2008 £m	2007 £m
Fair value of scheme assets	6.1	5.8	9.5	10.4	10.8
Value of liabilities (funded obligation)	(4.5)	(4.5)	(8.4)	(8.9)	(8.4)
<b>Surplus</b>	1.6	1.3	1.1	1.5	2.4
Experience gain/(loss) on liabilities	0.1	–	–	(0.2)	–
Experience gain/(loss) on assets	0.2	0.4	(1.1)	(0.4)	–

The pension costs for the College and its subsidiaries under SSAP 24 were:	2011 £m	2010 £m
Contributions to USS	25.8	24.9
Contributions to SAUL	5.9	5.9
Contributions to NHS	4.6	4.4
Contributions to defined contribution pension schemes	0.2	0.3
FPS current and past service cost per FRS17	–	–
	<b>36.5</b>	<b>35.5</b>



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