



Annual Review
2010/11





Vice-Chancellor's welcome



The *Annual Review* gives us an opportunity to pause in order to reflect on just some of the activities and achievements of the past 12 months in the life of the University. It has been a year during which much of the discussion about higher education has focused on the complex issues surrounding undergraduate funding. This is an important debate, but one that has inevitably diverted attention away from an equally significant aspect of Oxford's educational mission: its role as one of the world's leading centres for academic research.

Wherever you look across the University, the range and quality of research is truly remarkable. This *Annual Review* showcases just some examples. We take engineering as our theme in Mathematical, Physical & Life Sciences in order to examine research achievements in fields as wide-ranging as robotics, harnessing tidal energy and developing greener jet engines. From Medical Sciences we report on one of the ways in which Oxford research is making a difference and helping to save lives – here, by exploring Oxford's work on a malaria drug that has driven a change in World Health Organisation guidelines. We focus on teaching within Social Sciences, and our outstanding work through the PGCE course in developing the next generation of teachers. We have also showcased two very different collections: the major acquisitions by the Bodleian of the Edward Heath and John le Carré archives, and the creation in the Botanic Garden of the unique Medicinal Plant Collection.

Together, these examples demonstrate why we continue strenuously to make the case for sustained funding for academic research and for the graduate students without whom many of the roots of our research would wither and die.

This *Annual Review* reflects our success in generating research income and the new milestones being reached by Oxford Thinking, the Campaign for the University of Oxford, which is now fast approaching its initial target of £1.25 billion. Increasing support for graduate scholarships is a major campaign priority. Lack of funding is the single biggest reason why those to whom we make offers look elsewhere. It is also a strong motivation for our strategic objective: to provide full funding packages, covering fees and living costs, to the majority of students studying for a doctorate or a master's degree.

Competition for the best students and the best academics is a real challenge. But it would be wrong to suggest it is all about competition. Collaboration is important to us too, and a significant proportion of the leading-edge research carried out across Oxford is in partnership with other outstanding universities and organisations and, indeed, countries. In this *Annual Review*, our focus on the reinvigoration and strengthening of our longstanding and varied links with India is an excellent illustration of this collaboration. In this feature, we highlight an innovation – the inaugural Oxford-India Day – and we report it in an *Annual Review* that is, for the University, an innovation in itself.

The format of this publication has been the same for a number of years. This time, however, we are moving from a predominantly print-based publication to one that draws more extensively on the rich portfolio of new media. We are making fuller use of online channels, which allows us to tell the story of our year with dynamic content – including video – to accompany the text, and the print run will be considerably reduced with the environmental and cost efficiencies that that entails.

Although the format may change, the commitment within the University, as demonstrated in the *Annual Review*, remains the same as it has always been: to provide outstanding teaching, scholarship and research. I hope you will enjoy reading it.

A handwritten signature in red ink that reads "Andrew D. Hamilton". The signature is fluid and cursive, with the first letters of the first and last names being capitalized and prominent.

Professor Andrew Hamilton, FRS

A view from the writer's pen

*Excerpt from an interview with Richard Ovenden,
Assistant Director and Deputy Librarian, Bodleian Libraries*

'Among the highlights of the past year has been our acquisition of Jane Austen's unfinished novel *The Watsons* and the archives of John le Carré and Edward Heath. We have a duty to make sure these materials – they're really part of the nation's memory – are available to the whole public.

It's incredible to see the first surviving version of *Tinker, Tailor, Soldier, Spy* in le Carré's own hand. He cuts up parts of the latest version and adds it to a next version of the manuscript, so students are going to be able to get a sense of the evolution of a great work.

A personal archive like Heath's gives you an insight into different aspects of an individual's life. There are photographs Heath took in the 1930s, when he was a student observer at the Nuremberg rallies, and notes of attending the Nuremberg trials in 1946. It's wonderful to see somebody who became a very senior politician forming his own political ideas through these momentous events.

An interesting thing about the manuscript of *The Watsons* is how ordinary it looks, densely covered in Jane's very careful handwriting. Those stories, those characters that we know so well have such humble beginnings.'

Richard Ovenden

Training the next generation of teachers

*Excerpt from an interview with Trevor Mutton, PGCE
Course Leader, Department of Education*

'Most people who've done the PGCE would acknowledge that it's an incredibly challenging year, because it demands so much of the individual. It draws on every aspect of your personality: intellectually, artistically, creatively, practically, physically, emotionally.

The key highlight last year was the result of our Ofsted inspection. We received the outstanding grade in every category in which we were inspected. I think the reason was the quality of the partnership between the University and local schools that underpins the internship scheme: we plan and deliver the course jointly, and assess the outcomes jointly.

Some people still have the view that it's a very academic course located primarily within universities. In fact the Oxford internship was the pioneer of teacher education that was primarily school-based and continues to be recognised as a leading scheme. Of the about 170 who completed the course last year, around 130 have gone on to work in state-maintained schools.

The most fascinating aspect of my job is working with this new generation of teachers who are bringing something fresh to the profession: new enthusiasms, new ideas, new creativity for the benefit of pupils. It's a privilege to be able to improve the quality of the education that our young people get.'

PGCE students

To view the full video interviews visit: www.ox.ac.uk/annual-review

Oxford in the world, for the world

Excerpt from an interview with Nick White, FRS, Professor of Tropical Medicine, Mahidol Oxford Tropical Medicine Research Unit, Thailand

Our primary objective is to do research that improves the quality and quantity of life. Last year saw the publication of a trial in severe malaria which established that, given to children in Africa, Artesunate substantially reduced mortality. It was the largest ever trial in severe malaria: more than 5,300 children, 11 centres, 9 countries – and it resulted in a change in global policy. Artesunate is now the drug of choice.

I learnt about Artemisinin (Qinghaosu in Chinese) in 1981, and claims made for it were exciting. There was considerable resistance for about two decades – I don't think the West wanted to entertain the possibility of a Chinese traditional medicine drug as the best antimalarial drug. It came to a head in about 2004 with the publication of a paper in the *Lancet* which effectively accused the World Health Organisation of medical malpractice. Within a year, international agencies had switched: they would no longer support the ineffective drugs and now would support effective treatment.

But we now have the emergence of Artemisinin resistance in Western Cambodia. What needs to be done to halt the spread of resistance? The most important thing is for supporters of malaria control in the world to come up with a plan. Looking forward I see the future of international health as being genuinely international.'

*Anopheles mosquito,
vector of malaria*

Engineering at Oxford – a combination of scientific rigour and challenging applications

Excerpt from an interview with Professor Guy Houlby, Head of the Department of Engineering Science

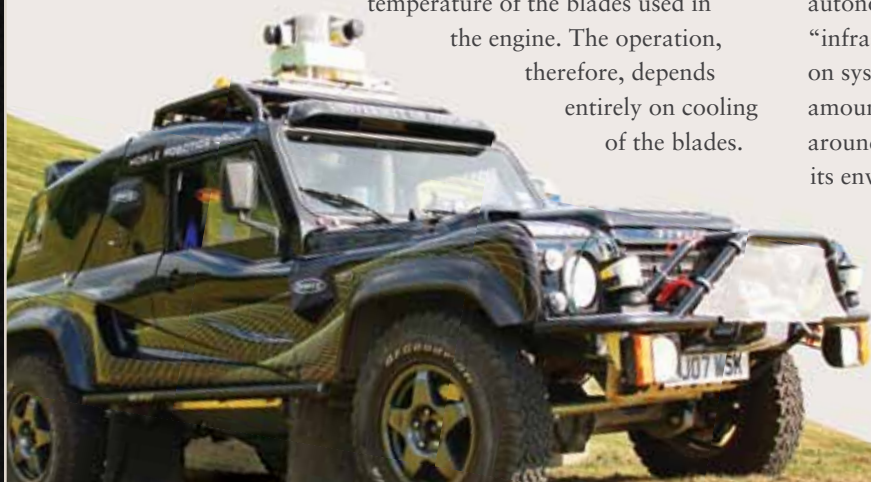
'Is Engineering the most exciting department in the University? I think that's the case, as we have research from biomedical engineering to jet engines, robot vehicles to renewable power.

One of the highlights this year has been the opening of the Osney Thermo-Fluids Laboratory, where work for the aerospace industry is going on. Jet engines operate such that the temperature of the burning fuel is several hundred degrees hotter than the melting temperature of the blades used in the engine. The operation, therefore, depends entirely on cooling of the blades.

The hotter the engine the more efficient it is, and every fraction of a per cent increase in efficiency is worth millions in terms of reduced fuel consumption. The new laboratory contains some of the most sophisticated equipment worldwide to measure the performance of turbine blades and their cooling systems. All of this work is carried out in close co-operation with industry.

Another exciting area has been work led by Paul Newman on autonomous navigation for vehicles. He is particularly interested in "infrastructure-free" navigation that does not depend, for instance, on systems such as GPS. A research vehicle, with a phenomenal amount of computing power on-board is currently being driven around Oxfordshire gathering data that will allow it to learn about its environment and eventually allow it to navigate. You can imagine a vehicle that could take over driving when you're on a motorway, but once you got off the motorway, it would be driven by a human. The future has interesting possibilities.'

Picture: The Wildcat – a robot car that can navigate and drive itself





Ricinus communis,
the castor oil plant

The medicinal power of plants

They are eight plant beds, and they look like many others in the University of Oxford Botanic Garden. But this Medicinal Plant Collection features plants that are a vital resource for the multibillion pound pharmaceutical industry; they play a part in saving lives, every day. 'In the UK, 25 per cent of drugs prescribed by NHS doctors contain active ingredients harvested from plants', says Director of the Garden, Timothy Walker. 'Plant-derived treatments provide 80 per cent of primary healthcare across the world.' Generous support from trusts and foundations, including the J Paul Getty Jnr Charitable Trust, the Monument Trust and the Wellcome Trust, made the project possible. Dr Alison Foster, Senior Curator at the Garden, drew on her eight years in the pharmaceutical industry to establish what plants were used in which medicines and why. And in July 2010, this unique collection was opened. It currently has 68 plants, grouped according to which organ or system of the body they act on. The response has been very good and, says Timothy Walker, the collection will increase. 'No decade goes by without our discovering yet another medicine or treatment that is derived from plants.'

For the full article please visit: www.ox.ac.uk/annual-review

Oxford and sustainability

The University is committed to meeting its environmental targets and works alongside a dedicated sustainability team to help reduce negative environmental impacts to land, air and water and to encourage sustainable travel and land management.

In 2009/10 the University increased its carbon emissions by 1.7% as a result of the expansion of the University estate and the coldest winter in 31 years. However, emissions decreased by 4.2% per floor space due to efficient use of energy in buildings. The Biochemistry building generated 5,700 kWh of on-site renewable energy (photovoltaics) compared to 3,500 kWh last year. Water consumption decreased by 12.3% and rainwater harvesting systems have been installed in six buildings.

Emissions from business air travel increased from 6,199 tCO₂ to 6,981 tCO₂ (13%) and emissions from fleet vehicles increased by 3.5%. To encourage sustainable travel, University initiatives include videoconferencing units, a mobile bicycle repair scheme, staff pooled bikes and an online Business Travel Plan.

Non-hazardous waste to landfill increased by 18%, while recycling increased by 39%. In addition, 1,834 printer and toner cartridges were recycled (1.717t). The in-house reuse scheme, Swap Shop, diverted 7,178 items from landfill, compared to last year's 2,196 items.

Finally, the Botanic Garden, OxGrow, and the Oxford Hub have been developing local, organic food projects which also work alongside charity organisations. A University Biodiversity Toolkit has been developed to help the collegiate University to increase wildlife habitat.

For the full article please visit:
www.ox.ac.uk/annual-review



Solar panels generate electricity
for the Biochemistry building



Celebrating Oxford's links with India

On 17 June the University held its first Oxford-India Day. More than 80 external visitors attended, many of them flying over from India, including business leaders, civil society leaders, policy planners and academics. Almost 200 members of the University were at the celebrations too, including many Indian students, who now form the second fastest growing nationality group at Oxford. The opening address was given by the Chancellor, Lord Patten of Barnes, Co-Chair of the UK-India Round Table, who emphasised the importance of the enduring 400-year-old relationship between Oxford and India. The Oxford-India Day provided Indian visitors with a chance

to sample something of Oxford and hear about the important research projects at first hand. Indian historian Professor Ramachandra Guha gave a talk entitled 'Why India is the World's Most Interesting Country'. The day was also a platform for Oxford scholars, amongst them Professor Sir Richard Peto, who discussed groundbreaking research on mortality in India. Research relevant to India that each of the separate academic divisions is conducting was also explored in talks during the afternoon. The day culminated in a cricket match between the Oxford Indian Society and the Oxford International team, followed by an evening reception at the Ashmolean.

*Picture: Detail from **Aṣṭasāhasrikā Prajñāpāramitā**, or **The Perfection of Wisdom in 8,000 verses**, AD 1095*

To view the full article visit: www.ox.ac.uk/annual-review



Annette Bazuaye,
holder of an
ExxonMobil
scholarship

The Oxford Thinking Campaign

*Excerpt from an interview with Professor Nick Rawlins,
Pro-Vice-Chancellor, Development and External Affairs*

'The Campaign's gone incredibly well. We are close to £1.2 billion, an extraordinary achievement. Some 40 per cent of the money has gone to support current programmes: students, posts, buildings, the facilities for research and scholarship. One example is the ExxonMobil scholarships, which bring people in from the developing world to do the MSc in Global Health. What will these scholars do when they go back? They can take with them what they've learnt here, and that's a very good way of getting Oxford's expertise back out into the world.'

'It was the best thing that ever happened to me. I could definitely not have come here without a scholarship.' (Onikepe Owolabi, MSc Global Health Science, Green Templeton College)

'We're not going to reach our initial target of £1.25 billion and stop. We're going to have to find resources to help support undergraduates. Those undergraduates are going to be making decisions about whether to undertake graduate study here, and we're going to have to find resources to make it clear that they can do exactly that. I'd like to thank everyone for what they've done for the Campaign. The results you can see all around you if you visit Oxford. They're all here because of the generosity of our supporters.'

To view the full video interview visit: www.ox.ac.uk/annual-review



Making the most of Oxford

In May 2011 a group of girls from the Elizabeth Garrett Anderson (EGA) school in north London arrived at Oxford for an ‘immersion experience’, where they were given a tour of the University, heard talks from some of its prominent female academics and finally, excitingly, met the First Lady of the United States of America, Michelle Obama. Mrs Obama introduced the girls to an example of one of EGA’s success stories – Clarissa Pabi, a former EGA student who is now studying English Literature at St Anne’s College. ‘Michelle Obama was inspiring – partly because of who she is and what she represents, and partly because of what she talked about’, Clarissa said. ‘Open days like this one are so important – after I came on open days to Oxford with EGA and then by myself, I decided to apply here. The way the University organised for the girls to meet female professors was also a great initiative.’ In her time at Oxford, Clarissa has co-produced a play, helped edit a magazine and served as president of the Poetry Society. ‘Oxford has been amazing’, she said. ‘I see it as a smorgasbord of fascinating talks and things to choose from and get involved in.’

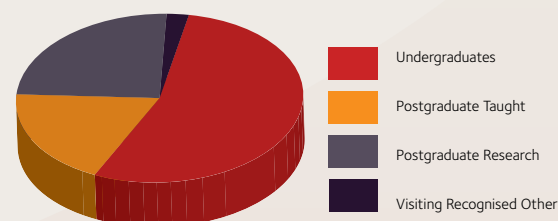
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Clarissa Pabi

Student numbers 2010/11

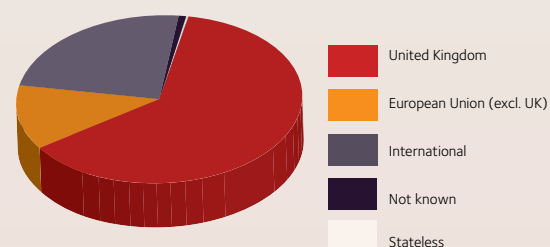
1. Total students

	Undergraduates	Postgraduate Taught	Postgraduate Research	Visiting Recognised Other	Total
Men	6,326	2,238	3,083	213	11,860
Women	5,397	1,789	2,217	272	9,675
Total	11,723	4,027	5,300	485	21,535



2. Students by nationality

	Undergraduates	Postgraduate Taught	Postgraduate Research	Visiting Recognised Other	Total
United Kingdom	9,934	1,551	2,090	9	13,584
European Union (excl. UK)	811	801	1,096	39	2,747
International	975	1,674	2,111	437	5,197
Not known	3	1	2	-	6
Stateless	-	-	1	-	1
Total	11,723	4,027	5,300	485	21,535





Engineering student Jack Marriott hopes to be selected for the 2012 Olympics

Oxford and the Olympics

Few people need reminding of Oxford's history of producing successful Olympic athletes – Matthew Pinsent and Stephanie Cook are among those who have contributed to Oxford's haul of 75 gold, 42 silver and 31 bronze medals. With the 2012 Games just months away, today's crop of Oxonian athletes is hoping to add to this tally – swimmer Jack Marriott and T53 wheelchair racer Nikki Emerson are among those vying for selection to the Olympic and Paralympic Games, respectively. Oxonians have also played their part in the organisation of the games, including Charlie Wijeratna, former Director of Commercial Negotiations, LOCOG; Paul Williamson, Director of Ticketing; and Ed Warner, Chairman, UK Athletics. But the focus of the games will not entirely be on London – the University will host the New Zealand triathlon team; Classics don Dr Armand D'Angour has composed an Olympic Ode in ancient Greek at the request of Boris Johnson; and artist John Gerrard, who holds Oxford University and Modern Art Oxford's Legacy Fellowship, is working alongside student athletes and Olympic hopefuls at the Iffley Road sports complex with a view to creating a simulated piece of art based on his studies of athletes.

For the full article please visit the online *Annual Review* at: www.ox.ac.uk/annual-review

Honours & Awards

To view the full list of honours and awards visit: www.ox.ac.uk/annual-review

Oxford academics and senior University members were recognised in the New Year honours and The Queen's Birthday honours. In addition, eight academics were elected Fellow of the Royal Society and a further seven were made Fellows of the British Academy. Leading figures from the worlds of science, the arts, politics and the law received honours at Encaenia, the University's annual honorary degree ceremony.



Professor Elizabeth Blackburn



His Excellency Giorgio Napolitano



Justice Edwin Cameron



Sir George Martin



Marilynne Robinson



Professor Sir Geoffrey Lloyd



Professor Dame Linda Partridge

New Appointments

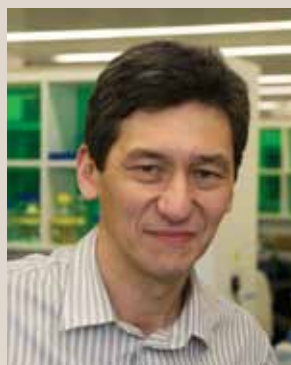
To view the full list of new appointments visit: www.ox.ac.uk/annual-review



Sir Drummond Bone



Professor Alison Noble



Professor Christoph Tang



Professor Anthony Green



Christine Fairchild



Professor Jo-Anne Baird



Professor David Clark



Professor Sandra Fredman

More than 30 academics from around the world have been appointed to professorships during the year, and a further seven people were appointed to senior administrative positions within the University. Six new heads of house were appointed.

Financial review

The University generated a surplus of £15.4 million (2009/10 £6.2 million). The increase in the surplus was after taking into account a £5.6 million donation of assets to Green Templeton College and an £8.1 million write back of impairment provisions in relation to Icelandic bank deposits.

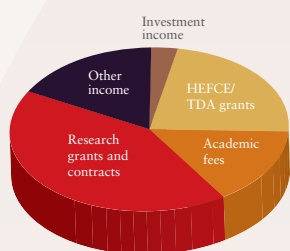
Total income increased by 4.5% to £920 million (2009/10: £880 million). Research grants and contracts continue to be the largest source of income, most of which was matched by related expenditure and increased by 2.6% to £377 million. Grants from the Higher Education Funding Council for England represent the second largest source of income and amounted to £200 million, down by 1.3%. Academic fees and support grants amounted to £153 million, up by 11.2% as a result of increased student numbers and revisions to fees charged for some courses. Endowment and investment income increased by 25.2% to £31 million. The main reason for the increase was the receipt in the year of a new endowment of £203 million from Oxford University Press (OUP).

The University's expenditure of £908 million was 2.7% higher than in 2009/10. Staff costs totalled £479 million, an increase of 2.2%. This was the result of an annual negotiated pay settlement of 0.4%, annual promotional salary increments and early retirement charges offset by a reduction in headcount. Staff costs in 2010/11 include £4.0 million relating to early retirement charges. Other operating expenses amounted to £381 million, an increase of 5.9%. Depreciation has increased from £51 million in 2009/10 to £53 million in 2010/11 due to the completion of new buildings, namely the Earth Sciences building and the Bodleian's Book Storage Facility.

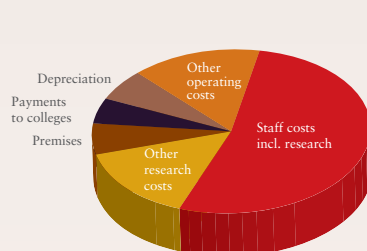
The net cash outflow, before use of liquid resources and financing for the year, was £50 million and compares with an outflow of £17 million in the previous year. The net cash outflow is largely due to capital expenditure being greater than the value of capital grants received as building programmes continue.

The balance sheet shows an increase in net assets of 17.8%, from £1,801 million to £2,122 million. Fixed asset cost (including heritage assets and fixed asset investments) increased by £101 million, reflecting the continued building programme to support the University's expanding research base. Significant capital expenditure was incurred on a number of projects in 2010/11 including the new Richards Building and the new Earth Sciences Building. Endowment funds increased in total value from £629 million to £856 million as a result of stronger equity markets, and new funds invested during the year amounted to £228 million, mainly because of a transfer of £203 million from OUP.

University income 2010/11



University expenditure 2010/11



For further information please see: www.ox.ac.uk/annual-review

External research funding

For the range, intensity and quality of its research and the scale of its cross-disciplinary work and collaboration, Oxford has few peers worldwide. Much of this activity and its impact in intellectual, social, cultural and economic terms depends on external funding.

During 2009/10, income from external research grants and contracts was some £65 million higher than at any other UK university. In 2010/11, income from such sources exceeded £376 million, the vast majority of which is associated with awards won through competitive funding calls. In addition to this funding from external sources, the Higher Education Funding Council for England (HEFCE) provides a block grant to support research infrastructure. In 2010/11, overall funding from HEFCE totalled £124 million, the largest component of which is quality-related (QR). QR funding is allocated on the basis of research excellence – as determined by the 2008 Research Assessment Exercise (RAE) – and here again Oxford received the highest amount of such funding in the UK.

The two single largest sources of external research income at Oxford are the Research Councils and the UK research charities. Research Council funding is extremely important in facilitating a wide range of projects, major research programmes and interdisciplinary initiatives, research training and international collaboration. The University also receives substantial support from across the UK charity sector, from the largest funders such as the Wellcome Trust, Cancer Research UK, the British Heart Foundation and the Leverhulme Trust, as well as from a large number of smaller charities.

A notable feature of Oxford's external research funding profile is the extent of its diversification over recent years. For example, the proportion associated with funders based outside the UK now exceeds 25 per cent. The past year has also seen an increased emphasis on research collaborations with UK and overseas industry, with the number of new funding agreements with industry increasing by 20 per cent compared with the previous financial year.

The University warmly acknowledges the role of all its funders in supporting its research efforts and the significant contributions made by its collaborators, both of which are central to the generation of public benefit through the University's research activity.

*To view further information about the University's year in review,
including video interviews and slideshows, visit:*

www.ox.ac.uk/annual-review

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*Front picture: Training is well under way for
the 2012 Oxford and Cambridge Boat Race*

Photography:

Rob Judges: front cover, pp. 4 (bottom), 7 (bottom), 8, 10 (top row; second row; third row, second and third from left; fourth row, left), 15;

James Whitaker: pp. 2, 12; Pawel Sytniewski: pp. 3, 10 (fourth row, right); Angel Sharp Media: p. 4 (top);

James Gathany/Wikimedia Commons: p. 5 (top); Mobile Robotics Group/Dept of Engineering Science: p. 5 (bottom);

Timothy Walker/Oxford Botanic Garden: p. 6 (left); Greg Smolonski: p. 6 (right); Bodleian Library: p. 7 (top); DE Photo: p. 9

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