



UNIVERSITY OF
CAMBRIDGE

CS_aP

Centre for Science and Policy

The Sciences and Technology
in the Service of Society

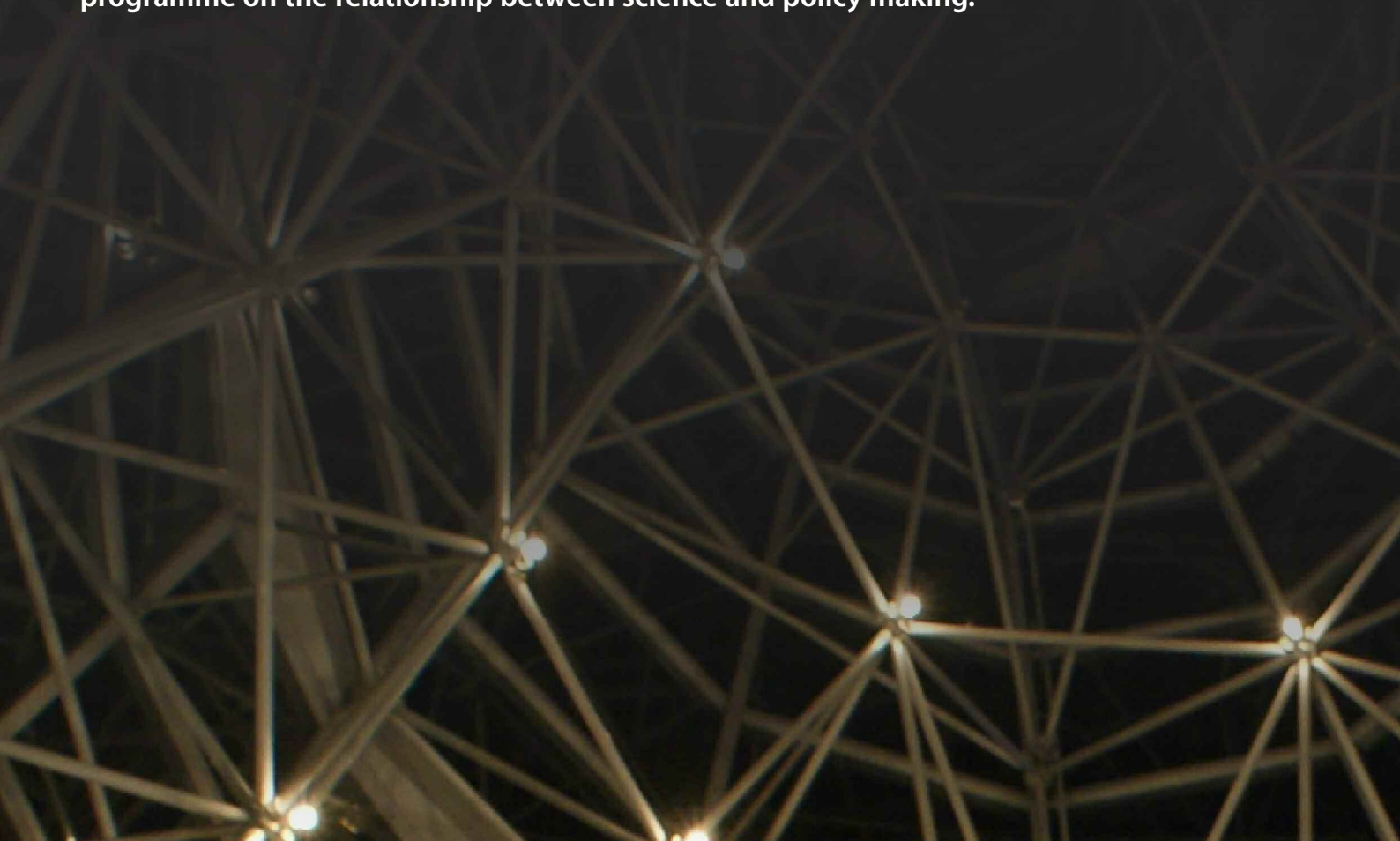
Annual Report, 2011

Dr David Cleevely, Founding Director and Dr Chris Tyler, Executive Director

December 2011

The Centre for Science and Policy provides a unique pathway between academic research and public policy. By providing a neutral platform for debate and discussion, CSaP has enabled the development of many productive connections between researchers in the sciences and engineering and policy makers in government and industry.

2011 has seen the launch and expansion of our flagship Policy Fellowships Programme, and the delivery of many influential Policy Workshops, Distinguished Lectures and Professional Development Policy Seminars. In addition, the Centre has continued its support for Cambridge Public Policy and the establishment of a Master's in Public Policy, and taken its first steps towards developing a research programme on the relationship between science and policy making.



Centre for Science and Policy

Third Annual Report (December 2011)

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The Centre for Science and Policy in 2011

Dr David Cleevely FEng, Founding Director, and Dr Chris Tyler, Executive Director



The Centre for Science and Policy is changing the way that research interacts with policy. Our second full year has built many important connections between academics and policy professionals, and our activities are gaining traction with both.

Connections between research and policy have never been more important. Meeting global and national challenges – from climate change to growth in the economy – relies heavily on advances in knowledge and technology; as a result, national governments and multinational institutions around the world are looking for better ways to interact with the research base and to achieve greater impact from the work that is done there.

We are not alone in contending that there is a need for more and better interactions between researchers and government decision makers. The clear call by the UK Prime Minister's Council for Science and Technology (CST) for greater professionalism and respect in the relationship between academics and policy makers remains as pertinent now as when the Council studied these issues in 2008; we are proud to report that CSaP is delivering against this need at the highest levels, as the Government Office for Science has recognised in its progress report on the action plan arising from the CST's findings.

The Centre delivers impact in two practical ways. On the one hand we are increasing the number of interactions between senior researchers and policy makers – this year our Policy Fellowships Programme alone has facilitated over 600 one-to-one, face-to-face meetings, a five-fold increase on last year, and next year it will be nearer 900. On the other hand, we are professionalising those interactions through programming, training and evaluation, and by providing a neutral platform for debate and dialogue. In addition, this year we have launched our own programme of research on the relationship between scientific expertise and public policy.

Our activities apply across all the themes that are important to researchers and policy makers alike – global resources and sustainability; risk, uncertainty and resilience; behaviour and well-being; innovation; research, evidence and policy; emerging technologies and society; and development and infrastructure. These are some of the most important societal challenges of our time, individually and in their interconnections, and solving them is of course beyond the scope of any one organisation. What is certain, however, is that along the critical pathway towards solutions lie multiple fruitful interactions between researchers and public policy decision makers. That is the space in which CSaP operates.

Over the past two years, and particularly in the last year as our activities have scaled up, we have built trusted partnerships with many UK Government Departments, including 10 Downing Street, HM Treasury, the Cabinet Office, the Home Office, the Foreign and Commonwealth Office (FCO), the Government Office for Science, and the Departments responsible for Business, Innovation and Skills (BIS), Energy and Climate Change (DECC), Transport (DfT), Communities and Local Government (CLG), Culture, Media and Sport (DCMS), International Development (DfID), Environment, Food and Rural Affairs (DEFRA), and Defence (MOD). We have also begun the process of reaching beyond the UK, particularly to the EU, USA and China.

Our reach into academia has grown similarly. The Policy Fellowships Programme engaged 280 researchers in 2011, from the natural and social sciences, engineering, mathematics, history, philosophy, politics, law, economics, the business school and other disciplines; and over a thousand have been involved in our Policy Workshops, Distinguished Lectures and Professional Development Programme.

Most importantly, these connections are yielding results: tangible ones derived from fresh explorations of the key policy issues; and ones less easy to see, derived from the increasing acknowledgement of the value of engagement between researchers and policy makers and from the evolving network within which it is possible to develop and exploit those connections.

CSaP would not have been able to achieve any of this without support from the David Harding Foundation, the Isaac Newton Trust and the University of Cambridge, as well as input from the wide range of people whose names appear at the end of this report. Our Executive Committee, Associate Fellows, Junior Associate Fellows and Policy Fellows, and all our other supporters and collaborators, have provided invaluable assistance this year, and we offer our sincere thanks to all of them – particularly to Sir David Wallace, who stepped down as Chair of the Executive Committee this year. We look forward to 2012 with great enthusiasm.

David

Chris



“

Research in the sciences and engineering has the potential to shape the future of public policy, but there has to be a meeting of minds between researchers and policy decision-makers.

The questions surrounding science and policy are too big for any one person to tackle, but together we can make a global difference.

”

*Professor Sir Leszek Borysiewicz, Vice Chancellor,
University of Cambridge*

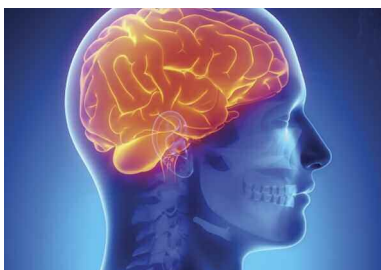
Themes

CSaP's work in 2011 has ranged across seven themes of mutual interest to researchers and policy makers – each of which is illustrated below by some of the highlights from the year, drawn from our programmes of workshops, lectures, seminars and fellowships. Much of our work, however, bridges more than one theme, because the most fruitful conversations often take place where separate remits, and multiple disciplines, converge.



Global resources and sustainability

In 2011 we hosted seven Policy Fellows with an interest in global resources and sustainability, including a Senior Policy Adviser to the Prime Minister, the Managing Director of BT Regions and a Senior Adviser in the International and European Union Group at HM Treasury. Together they had a total of 173 meetings with leading researchers at the University of Cambridge.



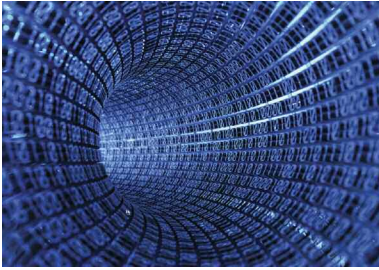
Behaviour and well-being

Our Policy Workshop on behaviour change and energy efficiency – delivered at the end of the previous year – was developed into a programme of research during 2011, culminating in the rolling out of a learning and development module on energy behaviours which has already been presented to more than 200 policy makers in the Department of Energy and Climate Change (see p 13).



Innovation

In March 2011 we ran a Policy Workshop on the innovation ecosystems of the University of Cambridge (and “Silicon Fen”) and Cambridge, Massachusetts, home to Harvard and MIT. Attended by Governor Deval Patrick, his senior colleagues and over 70 policy makers, researchers and entrepreneurs, the event led to important collaborations between Cambridge UK and Cambridge USA.



Emerging technologies and society

In June 2011 we convened a Policy Workshop bringing together researchers and policy makers to consider low-cost whole-genome sequencing and its impact on public policy and society. This workshop was a key part of the development of the PHG Foundation report *Next Steps in the Sequence*, the first comprehensive guide to the clinical impact of these transformational technologies.



Development and infrastructure

Lecturers in the 2011 programme included three Chief Scientific Advisers – from the Departments responsible for International Development (Professor Chris Whitty), Communities and Local Government (Professor Jeremy Watson) and Energy and Climate Change (Professor David MacKay) – focusing on challenges of development and infrastructure, and attracting a total of over 500 attendees.



Risk, uncertainty and resilience

Thirteen Policy Fellows with interests in risk, uncertainty and resilience visited in 2011, including the Director of Science, Engineering and Technology at the Home Office, the Chief Information Officer at BAA, the Deputy Director of Civil Contingencies at the Cabinet Office, and the Heads of the Civil Contingencies Team and of Defence and Security at the Government Office for Science.



Research, evidence and policy

In April 2011 we hosted a two-day workshop – attended by over 50 researchers, policy makers and science-policy professionals – to identify key unanswered questions on the relationship between research and policy, laying the foundations for an on-going research programme on the processes by which expert knowledge informs policy decision making (see p 21).



“

The work of the Centre for Science and Policy is so valuable in bringing professionalism to the interactions between researchers and policy makers.

”

Sir John Beddington, UK Government Chief Scientific Adviser

Policy Fellowships Programme



The Policy Fellowships Programme is changing the way that researchers interact with policy makers. Through one-to-one meetings tailored to address the questions posed by the policy makers, the programme creates connections between people who might otherwise never meet, and provides them with the opportunity and support to develop meaningful interactions. Recent Fellows have called the experience “hugely productive”, “thought-provoking” and “totally inspiring”.

Policy Fellows are decision makers from government and industry who stand to benefit from access to the best research across all disciplines. Each Fellow is appointed for two years, and starts his or her Fellowship with an intensive residential week of one-to-one meetings with relevant researchers. Fellows return to the University from time to time during their two-year tenure to take part in the Centre's programme of events, and have the opportunity to give lectures and convene groups of researchers for specific discussions.

The breadth and scope of the Policy Fellowships increased this year – Policy Fellows now come from a dozen Whitehall Departments and six industry sectors, and we also welcomed our first Fellow from the European Commission. A Director General was the most senior government official to join the programme in 2011, but the focus has remained at the Director/Deputy Director level where the programme can have the greatest direct impact on the development of policy. The breadth of the Policy Fellowships Network (the network of researchers that Fellows meet) also expanded beyond Cambridge for the first time, through a collaboration with the Royal Academy of Engineering. Page 11 shows the connections that the programme created for new Fellows in the year.



“

Being a CSAP policy fellow is a unique and invigorating experience somewhat akin to drinking from an intellectual fire hose.

It gives me the opportunity to discuss some of the huge real-world challenges involved in improving Heathrow with some of the best brains in the world. The result – for industry and academia – is astonishing, unpredictable and challenging.

”

Philip Langsdale, Chief Information Officer, BAA

The Programme has already proved itself as a “pathway to impact” for the University’s research, showing how the implications for evidence-based policy making can be communicated, and providing a practical framework for delivering those impacts. As one researcher put it, commenting on being able to discuss the results of his work with senior advisers in 10 Downing Street, “It is very unlikely that I would have got an uninterrupted one-to-one with people at that level without CSaP”.

The Programme has also taken a significant step towards being self-funding, with the introduction of a charge for each Fellow.

We are most grateful to Pembroke College for continuing to help us welcome Policy Fellows to Cambridge in 2011.

“

The Policy Fellowships are an excellent way of providing academics and policy makers with an insight into each others’ worlds, interests and priorities.

The initial short, sharp interactions provide a tremendous starting point and many are leading to further fruitful contact.

”

Professor Sir Mike Gregory, Head of the Institute for Manufacturing, Department of Engineering, University of Cambridge

“

The way to get to the right experts in academia is through knowing people that know people, and having the sorts of conversations that unlock the facets that are worth exploiting.

I spent an exceptionally informative and stimulating week in Cambridge, meeting with some of the best and most influential thinkers in a wide range of disciplines across the University. I came away with fresh insights into all my questions, and with a valuable network of top academics to draw on in the future.

”

Alan Pratt, Director, Science, Engineering and Technology, Home Office

- **25** senior policy makers from Whitehall, the European Commission and industry began Policy Fellowships in 2011
- **280** leading researchers and experts met Policy Fellows
- **631** one-to-one meetings took place between policy makers and researchers

2011



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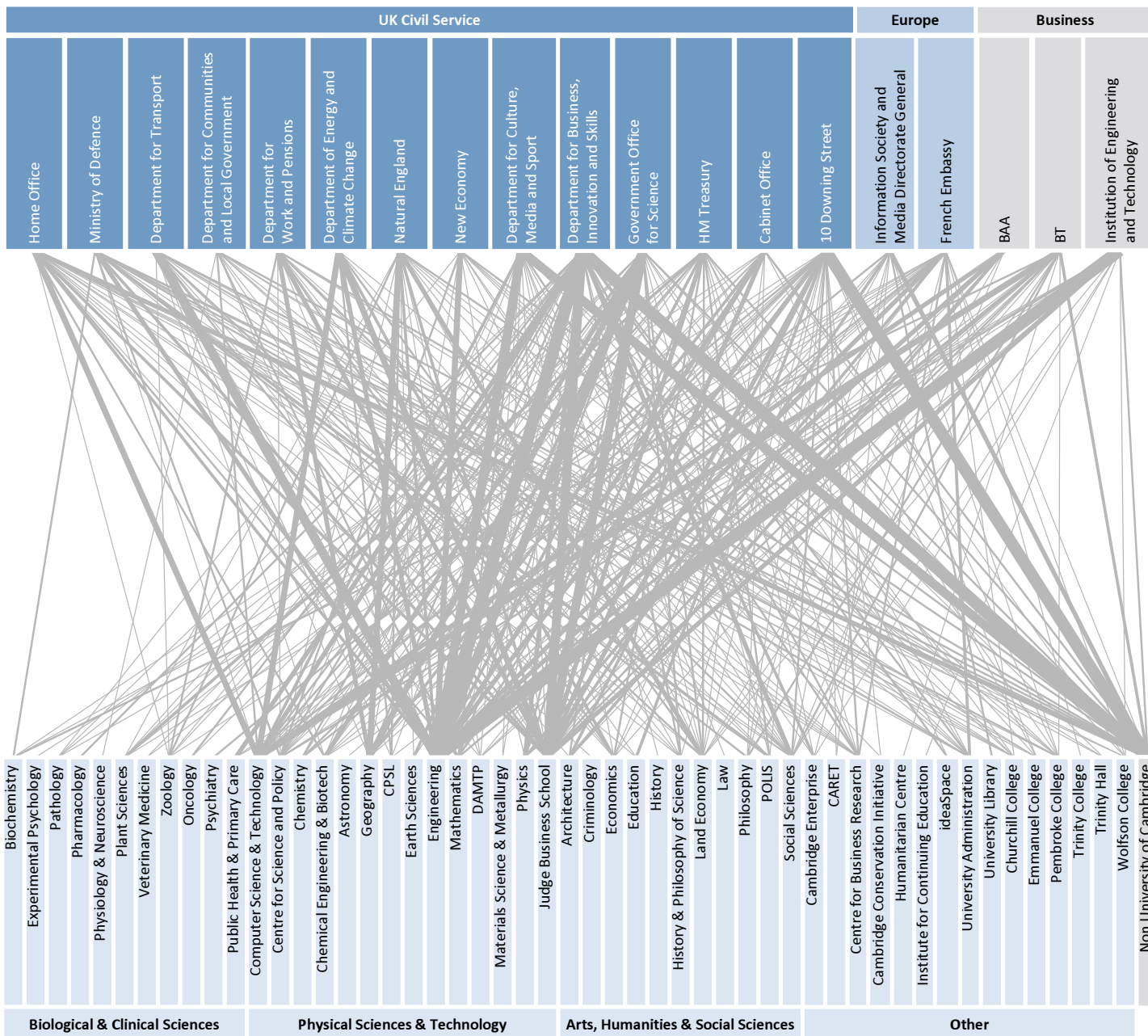
We have a mandate to bring our work to the attention of key policy makers so they're better informed of the evidence.

CSaP has emerged as the primary avenue for this engagement, allowing us to get our findings in front of significant actors, and to tailor our research to meet the needs of organisations that set and are governed by policies.

The Centre frees us from needing to scout out those we seek to inform, giving us more time to focus on the research itself.

”

Dr Doug Crawford-Brown, Director, Centre for Climate Change, Mitigation Research, University of Cambridge



CSaP Policy Fellowships Programme: meetings between new Policy Fellows and researchers, 2011

Policy Workshops

CSaP's Policy Workshops provide a neutral platform for the sharing of knowledge and ideas, and for making connections between researchers and policy makers. In 2011 CSaP organised or co-organised nine workshops across all our themes, each taking on a format appropriate to the requirements of the topic and the nature of the engagement, from round tables to panel discussions and conferences.

Topics this year have been as diverse as genomic medicine, the measurement of well-being, innovation in the high-tech economy, climate change and clean energy, cyber defence, and the use and misuse of scientific evidence in politics and policy making.

Representation from government has been similarly wide-ranging, including members of the House of Commons and the House of Lords, and senior officials from BIS, CLG, DECC, DEFRA, DfT, the Technology Strategy Board, the MOD, the Defence Science & Technology Laboratory, NATO, NICE, the Department of Health and the Human Genetics Commission.

As well as delivering the implications of the latest research to the policy community – and enabling academics to understand first-hand the needs and views of policy makers – these workshops are intended to build lasting connections across departments and disciplines, helping to break down silos and open up cross-cutting issues to meaningful debate. The relationships created are re-enforced through other elements of the CSaP's programme, including Policy Fellowships and the networking opportunities provided by our other events.

“

Governor Patrick's visit to Cambridge with a trade delegation of Massachusetts companies interested in the 'innovation economy' was critical to highlighting the synergies between the UK and Massachusetts.

Without a doubt, the Cambridge cluster delivered in showcasing the strength of the UK as a partner – and this was in no small part due to CSaP delivering logistical support and an impressive group of contacts, both from within the University and from the greater Cambridge community.

”

Dr Phil Budden, Consul General, British Consulate-General Boston MA

- **9** workshops covering **7** CSaP themes
- **473** participants from **14** Government Departments and **17** research institutions

2011

“

Working with CSaP on the NATO and Cyber Defence workshop was great. They made the whole process straightforward and successfully created a climate in which knowledge and ideas were able to be exchanged freely. We were delighted with the event.

”

Professor Jon Crowcroft, Marconi Professor of Communications Systems, Computer Laboratory, University of Cambridge



Of course these things can take time to play out. One example this year has been the on-going impact of our Policy Workshop on behaviour and energy efficiency, held late in 2010 in conjunction with DECC and designed to challenge existing thinking and kick-start a process of dialogue. This workshop led directly to a programme of research within government, a Policy Fellowship for DECC's Head of Customer Insight, and the rolling out of a learning and development module throughout the Department.

The initial workshop is credited by the policy makers with a critical role in raising awareness on the importance of behaviour – but just as importantly its consequences can be seen in the form of a toolkit for making practical use of behavioural theories in policy making. This has already been used in contexts as diverse as the design of the new Universal Credit in DWP and policies to reduce staff travel during the 2012 Olympics.

CSaP contributes to the success of these workshops in many ways: by convening the right mix of participants; setting objectives and working styles; expert chairmanship and facilitation; and ensuring an appropriate environment for effective and open discussion.

“

The CSaP workshop on energy use was very valuable to DECC in raising awareness on the importance of behaviour, how societal norms get established and how hard it is to change them.

It led directly to work on different perspectives on energy behaviours which then formed the basis of a learning and development module – this has already been presented to more than 200 people in the Department.

”

Dr Nafees Meah, Head of the Climate and Energy Science Analysis Team, DECC

Professional Development

The Centre's Professional Development Programme is designed to help early-career researchers to develop the knowledge and skills they need to successfully engage with policy, and to give them practical experience of doing so – as well as enabling them to build their peer networks within relevant disciplines and departments.



Creating effective and fruitful interactions between researchers and policy makers requires more than just getting the right people in a room. It is essential that researchers understand how the policy process works, with its need for timeliness, impartiality, and the clear assessment of uncertainty. They must also understand how to communicate the implications of their research in a clear, concise and objective manner.

Despite the importance of such skills, they are typically left to develop on their own, without professional training or targeted support. CSaP is filling this gap by working with early-career researchers to provide training on the policy process and practical opportunities to engage with it.

“

Working with CSaP has really opened my eyes about how policy works and what scientists can bring to the policy context. I'm now committed to maximising the impact of my research and contributing long-term to help policy makers in their work.

”

David Bosworth, PhD student in Department of Materials Science and Metallurgy, University of Cambridge

- **77** early-career researchers have learned about policy through this programme
- More than **20** early-career researchers have derived direct experience through this programme of engaging with policy makers

2011



“

It was a pleasure to participate in this innovative and necessary event. I think the dialogue and cross-disciplinary experience that CSaP is generating is important to make the best of British science and its outputs in the future.

”

Professor Ajit Lalvani, National Heart and Lung Institute, Imperial College London

Professional Development Policy Seminars are one way that we do this. These events introduce PhD and post-doctoral researchers to the challenges of engaging with policy, and provide a practical opportunity to interact both with senior researchers who have experience of engaging with policy makers, and with the policy makers themselves. In 2011 we ran two seminars, one with the Department of Engineering and supported by the IET, and the other with the Society of Biology; participants called the sessions “informative”, “empowering” and “inspiring”, and several of the researchers involved have gone on to seek internships and work placements to deepen their experience.



The Centre has also facilitated the establishment of ad hoc teams of early-career researchers looking at the connections between research and policy. Our *Mapping Expert Advice* team, for example, has been developing a map of expert advice in government; this will be provided as an online interactive tool in 2012. The *i-Team on Policy* explored policy-relevant research from across the University and looked for potential connections into government.

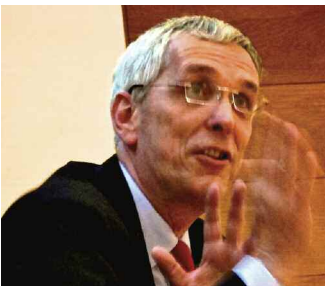
Lecture Series

While most of the Centre's work goes on in one-to-one meetings or focused workshops and seminars, the lectures which we promote – particularly the CSaP Distinguished Lecture Series – provide important opportunities for the public discussion of key issues in the debate about scientific evidence and its use in policy making in government and in industry.

During 2011 we were proud to welcome a diverse range of distinguished speakers to address our Associate Network on a series of important topics.



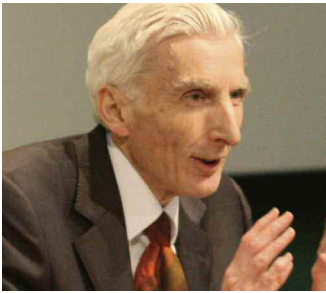
Professor Christopher Bishop (Distinguished Scientist, Microsoft Research Cambridge) spoke on the relevance of blue-skies, non-mission-driven research, taking as a case study work undertaken at Microsoft's Cambridge Lab which was essential for integrating key technologies into what became the Kinect controller for Xbox 360. Taking as his title *From Basic Research to the World's Fastest-selling Consumer Electronics Product*, he showed how Kinect's success was only possible because of the research culture of the company, and the vision and persistence of a number of scientists working on very hard problems in machine learning, object recognition and motion capture.



Professor David Clary (Chief Scientific Adviser to the FCO and President of Magdalen College, Oxford) addressed the question of "scientific diplomacy" and the wider role that science plays in the Foreign and Commonwealth Office. He described how during the cold war, when diplomatic exchanges across the iron curtain were close to absolute zero, productive communications between Western and Soviet scientists continued; and in the same way today, there are important scientific collaborations on-going between Israel and Iran. He also highlighted the place of science in foreign policy for "ungoverned spaces", such as space, the poles and the oceans, and the role of the FCO's Science and Innovation Network in international scientific collaborations such as those around stem cells and climate change.



Joi Ito (Director, MIT Media Lab) gave his lecture during the *Silicon Valley Comes to Cambridge* event in November. He considered the role of institutions and scientists in today's new world of "small pieces loosely joined", and the impact of the internet in driving down the cost of innovation in business and in policy making. He argued that the internet has released the forces of serendipity and distributed innovation from the stranglehold of planning – "deciding whether or not to do something costs more than just getting on and doing it". He concluded with a compelling example about the response of the networked society to the Fukushima nuclear disaster, and spoke about how the internet revolution can be carried forward into policy making and governance.



Lord Rees of Ludlow (Astronomer Royal and Master of Trinity College, Cambridge) was appointed President of the Royal Society in 2005 and completed his tenure in 2010. During this time, he oversaw an expansion of the Royal Society's public engagement and policy role. Ranging widely over questions of global population growth, emerging technologies, energy supply and climate change, Lord Rees argued that scientists now have a greater responsibility than ever to be actively involved in giving the best scientific advice to the public and policy makers. He called in particular for the creation in the UK of groups along the lines of the USA's "Jason Groups" which can develop novel, independent solutions to issues facing policy makers.

CSaP was also privileged to continue its collaboration with the Darwin College Student Association on science and policy lectures as part of their "Connections" Lecture Series. 2011 speakers included **Andrew Miller MP**, Chair of the House of Commons Science and Technology Committee, who spoke on *Science in Emergencies*; **Professor Jeremy Watson**, CLG Chief Scientific Adviser, who addressed *Drivers, Challenges and Approaches to Innovation in the Construction Sector*; **Professor Chris Whitty**, DfID Chief Scientific Adviser, whose subject was *Science in the Service of the Developing World*; **Professor Sir Mark Welland**, MOD Chief Scientific Adviser, who took part in a panel discussion on *The Challenges of Cyber Warfare*; and **Professor David MacKay**, DECC Chief Scientific Adviser, who addressed *The Future of Energy* together with **Dr Christof Rühl**, Group Chief Economist and Vice President of BP.

See overleaf for details of lectures by distinguished government figures – **Jonathan Powell** and the **Rt Hon Michael Gove MP** – as part of the Cambridge Public Policy Lecture Series.



- **4** CSaP Distinguished Lectures
- **2** Cambridge Public Policy Lectures
- **5** "Connections" Lectures
- Audiences averaging well in excess of **100**

2011

Cambridge Public Policy

Cambridge Public Policy is a new University initiative set up to coordinate, support and encourage the development of multidisciplinary research relevant to public policy, to develop a new Master's level course in public policy (due to launch in 2013) and to stimulate fundraising for these activities.

The Centre for Science and Policy has been critical to the successful establishment of **Cambridge Public Policy (CPP)**, providing an administrative and strategic hub and fostering its development.

Professor Lord Eatwell (Professor of Financial Policy) has been appointed Chair of the CPP Committee, which also includes Dr David Cleavelly (Founding Director of CSaP), Professor Andrew Gamble (Head of the Department of Politics and International Studies), and representatives from each of the six Schools of the University: Dr Alex Oliver (Arts and Humanities), Professor William Sutherland (Biological Sciences), Professor Theresa Marteau (Clinical Medicine), Mr David Howarth (Humanities and Social Sciences), Professor Frank Kelly (Physical Sciences) and Professor Simone Hochgreb (Technology).

The Cambridge **MPhil in Public Policy (MPP)** is set to launch in 2013. It is a multidisciplinary, evidence-based and practice-oriented course, aimed at people with real-world experience and a desire to build careers in public policy – whether in government (national or international), the third sector or the private sector. The Department of Politics and International Studies (POLIS) will host the course, but teaching will draw upon academics from across the University, as well as a broad range of external practitioners.

Students will develop the skills and tools needed to form judgements based on diverse information with varying degrees of uncertainty. Through a series of case studies, they will also learn about putting decisions into practice in the real world; these cases will focus on policy decisions under three broad themes – sustainable development, health and welfare, and resilience and risk.

“

I saw for myself the expertise Cambridge has to offer policy makers across a range of sciences, engineering, the humanities and social sciences.

The Master's course in Public Policy – with its particular focus on Europe – offers an exciting opportunity to pool this knowledge and contribute to improved policy making in Britain and the EU.

”

José Manuel Barroso, President of the European Commission



In preparation for the launch of the Master's course, CPP has been busy convening the key contributors. The **Cambridge Public Policy Seminar Series**, in particular, has provided a regular forum for cross-cutting discussions on public policy and a launch pad for the development of research collaborations. Attendees have come from more than 20 departments and organisations inside and outside the University, and discussions have ranged over topics such as industrial policy, the relationship between the media and politics, new approaches to the management of public services, and how to measure the value of social and environmental capital.

Seminar speakers from outside Cambridge in 2011 included the Rt Hon Charles Clarke (former Home Secretary), Dr Miles Elsdon (Head of Civil Contingencies at GO-Science), Judith Plummer (Senior Financial Analyst, World Bank), William Horsley (former BBC foreign correspondent), Diana Garnham (Chief Executive of the Science Council) and Helen Kersley (new economics foundation).

In the Michaelmas Term, CPP joined forces with the organisers of the **Cambridge Public Policy Lecture Series**. Speakers were Jonathan Powell (former Downing Street Chief of Staff under Tony Blair), who spoke on negotiating with terrorist organisations, and the Rt Hon Michael Gove MP (Secretary of State for Education) who set out his vision for education in the UK. The future development of this series will help to ensure a regular exchange of ideas between national and international policy leaders and the public policy community in the University.

CPP has also supported the **YouGov@Cambridge Programme**, an on-going collaboration between the University and YouGov aimed at encouraging research and analysis on public opinion. The programme was formally launched in September at the YouGov-Cambridge Forum on *Consumer Networks and the Diffusion of Power*, a two-day event that brought Cambridge academics together with policy makers and representatives from the media and business.

CPP is grateful to Nat le Roux for his continuing insight, advocacy and financial support.

CPP and POLIS are pleased to announce a **two-year Mellon-funded post-doctoral fellowship** to commence in October 2012. The fellow will undertake research on the balance between scientific and other advice in the policy process, contribute to interdisciplinary papers on existing courses, and support the development of one of the MPP case studies. For more information please contact Miranda Gomperts (email mg129@cam.ac.uk).

“

The CSaP research programme is a significant new venture carrying out important research on science and policy.

It represents a great opportunity to build collaborations between leading researchers on science and policy together with CSaP's powerful network of scientists and policy makers.

”

*Professor Sir Tom Blundell, Department of Biochemistry,
University of Cambridge*

Science and Policy Research

CSaP's Science and Policy research programme focuses on understanding the relationship between scientific expertise and public policy – carrying out comparative empirical research on the processes by which expert knowledge informs policy decision making. The aim is both to contribute to scholarship on the science-policy relationship, and also to inform our hands-on work to improve it.

In September 2011 the development of the CSaP research programme took a significant step forward with appointment of Dr Robert Doubleday as our Head of Research. The first project Dr Doubleday started after joining CSaP is a year-long study of the changing role of Chief Scientific Advisers in the UK, which is being carried out together with the Churchill Archives Centre.

CSaP's research programme will work collaboratively across the University of Cambridge and beyond. Drawing on scholarship in Science and Technology Studies and allied disciplines, the programme will contribute to understanding of the policy and political contexts of strategic interdisciplinary research on societal challenges. We have already begun to work with three major interdisciplinary initiatives at Cambridge: Nanotechnology, Conservation, and Food Security, as well as the Centre for Research in the Arts, Social Sciences and Humanities (CRASSH).

The Science and Policy research programme builds on work to establish a research agenda on science and policy, supported by CSaP. William Sutherland (Miriam Rothschild Professor of Conservation Biology at Cambridge) led a collaborative process involving 52 participants from a wide range of academic and policy backgrounds. At a workshop in

April 2011, 40 key research questions were agreed; see Sutherland W. J. *et al.* (in press), A collaboratively-derived science-policy research agenda, PLoS ONE. The CSaP research programme will take forward this agenda and will return periodically, with the wider science policy research community, to review progress and update the shared research agenda.

CSaP will build research capacity through appointing externally-funded researchers; in addition, it will work with a small number of affiliated scholars. So far we are actively collaborating with:

- Dr Miles Parker, Deputy Chief Scientific Adviser, DEFRA
- Dr Jack Stilgoe, Senior Research Fellow, University of Exeter

In 2012 we look forward to the arrival of Dr Tristram Riley-Smith, who will be joining us from Whitehall as a Visiting Fellow to work with the Research Councils UK's Global Uncertainties programme.

The research programme has been made possible by generous research grants from the Isaac Newton Trust and the University of Cambridge.

Executive Committee

The work of the Centre for Science and Policy is guided by a group of eminent Cambridge academics who, together with the Founding Director, make up the Executive Committee. During 2011 the chairmanship of the Committee passed from Professor Sir David Wallace to Professor Ian White.



Professor Ian White (Chair)
Van Eck Professor of Engineering,
Department of Engineering,
University of Cambridge, and Master
of Jesus College



Professor Alan Hughes
Margaret Thatcher Professor of
Enterprise Studies, and Director of
the Centre for Business Research,
University of Cambridge



Dr Jennifer Barnes
Pro-Vice-Chancellor for International
Strategy, University of Cambridge,
and President of Murray Edwards
College



Professor Frank Kelly
Professor of the Mathematics of
Systems, University of Cambridge,
and Master of Christ's College



Professor Sir Tom Blundell
President of the Science Council,
Chair of BBSRC, and Professor
Emeritus in the Department of
Biochemistry, University of Cambridge



Lord Rees
Astronomer Royal, Past President of
the Royal Society, and Master of
Trinity College



Dr David Cleevly
Founding Director, Centre for Science
and Policy, University of Cambridge



Professor Sir David Wallace
Former Director of the Isaac Newton
Institute for Mathematical Studies,
University of Cambridge, and Master
of Churchill College



Professor Lord Eatwell
Director of the Centre for Financial
Analysis and Policy (CFAP), University
of Cambridge, and President of
Queens' College

The Directors of CSaP would like to record their sincere thanks and appreciation for Sir David Wallace's outstanding leadership in the launch of the Centre and through the first two years of its operation.

Associate Fellows

The Centre for Science and Policy is fortunate to benefit from the guidance of its Associate Fellows – a title which recognises the role of a few distinguished members of our network who have made a significant contribution the relationship between research and policy, or to the Centre's objectives and development.



Professor Brian Collins

Professor of Engineering Policy at UCL and former CSA at the Department for Business, Innovation and Skills and the Department for Transport



Professor Susan Owens

Professor of Environment and Policy and Head of Department of Geography, University of Cambridge



Professor Jon Crowcroft

Marconi Professor of Communications Systems, Computer Laboratory, University of Cambridge



Governor Deval Patrick

Governor of the Commonwealth of Massachusetts



Professor Andrew Gamble

Professor and Head of the Department of Politics and International Studies (POLIS), University of Cambridge



Dr Miles Parker

Deputy CSA at the Department for Environment, Food and Rural Affairs



Mr David Howarth

Reader in Law, Department of Land Economy, University of Cambridge; UK Electoral Commissioner and former MP for Cambridge



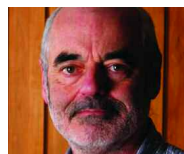
Dr Graeme Reid

Head of Research Funding at the Department for Business, Innovation and Skills



Professor David MacKay

CSA at the Department of Energy and Climate Change, and Professor of Natural Philosophy in the Department of Physics, University of Cambridge



Professor David Spiegelhalter

Winton Professor of the Public Understanding of Risk, University of Cambridge



Professor Ben Martin

Professor of Science and Technology Policy Studies, SPRU, University of Sussex



Professor William Sutherland

Miriam Rothschild Professor in Conservation Biology, Department of Zoology, University of Cambridge

The Team

The Centre's programmes, projects and network are supported by a small team based in Cambridge and London, which brings together all the necessary skills and expertise in event management, marketing, programme development and research.



Back row, from left: **Jackie Ouchikh** (Head of Programmes) designs and delivers events for CSaP's academic, business and policy making communities, and provides event guidance and support to other groups around the University. **Dr Nick Gray** (Associate Adviser) provides consulting support for the Policy Fellowships Programme. **Dr Rob Doubleday** (Head of Research) leads CSaP's research programme on the relationship between scientific expertise and public policy. **Dr Miranda Gomperts** (Director of Programmes and Development, CPP) is responsible for the development of the MPP, and drives a range of programmes that support the public policy community in the University.

Front row: **Dr David Cleavelly** (Founding Director), **Dr Chris Tyler** (Executive Director).

Thanks also to **Philip Guildford** (Director of Research, Department of Engineering) for on-going advice, and to **Maia Kavanagh Williamson** for administrative support.

Our network also includes a cadre of individuals early in their research careers who are contributing significantly to the work of the Centre, and whose valuable contributions and growing expertise are recognised by the title "Junior Associate Fellow".



David Bosworth

PhD student, Department of Materials Science and Metallurgy



Briony Bowe

Research Assistant, Department of Earth Sciences



Alberto García-Mogollón

PhD student, Judge Business School



Tim Guilliams

PhD student, Department of Chemistry



Lindsay Moore

Herchel Smith Fellow and MPhil student, Psychology and Neuroscience in Education



Isayvani Naicker

PhD student, Department of Geography



Richard Thomson

PhD student, Department of Earth Sciences



Zoe Tolkien

PhD student, MRC Human Nutrition Research

Financial Report – Year to 31 July 2011

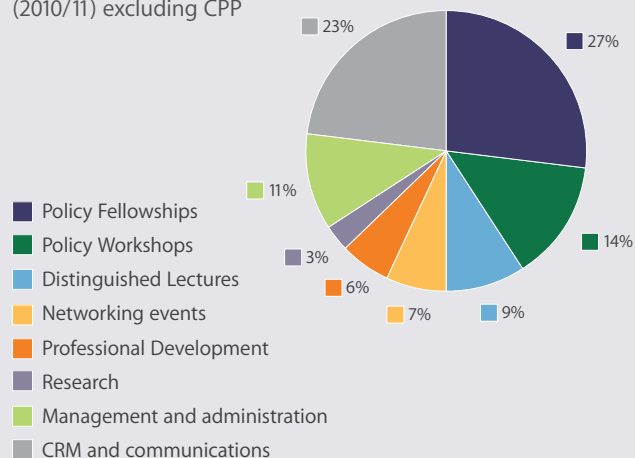
The Centre for Science and Policy is grateful for the support of its principal funders – particularly the David Harding Foundation, the Isaac Newton Trust and the University of Cambridge. Without their generous support, none of our achievements as outlined in this report would have been possible.

As the table below shows, during FY 2010/11 (to 31 July), the Centre received £426k of income from all sources. The Centre's total expenditure was £400k in the same period, with almost two-thirds of all spending dedicated to events and other engagement activities. The Centre has therefore carried forward a balance of £678k into FY 2011/12, an increase of £26k on the balance at the start of 2010/11. In addition, the CPP received £80k from Nat le Roux and the Constitution Society, which was spent on MPP course development and related activities as described on pages 18-19 above.

The continuing impact of our activities in 2011 has underlined once more that there is a significant unfilled need for building relationships between researchers and policy makers. In order to sustain our activities in the longer term, we are actively seeking other sources of funding – from Trusts, Research Councils, the European Union, private philanthropy and other sources. In 2012 we will appoint a Head of Development to establish a sustainable base for our fundraising and development work.

	FY 2009/2010	FY 2010/2011
Total Income, including donations and interest	£326k	£426k
Expenditure	£312k	£400k
Net Income	£14k	£26k
Total Funds brought forward as at 1 Aug	£638k	£652k
Total Funds carried forward as at 31 Jul	£652k	£678k

Breakdown of Expenditure (2010/11) excluding CPP



A Note of Thanks

The creation of CSaP and its on-going operations would not have been possible without the support of the David Harding Foundation, the Isaac Newton Trust and the University of Cambridge. CSaP would also like to record its gratitude to all the members of the University and others who have given their time this year to support our events and to meet visiting Policy Fellows, including:

Prof Christopher Abell (Dept of Chemistry); **Prof Bill Adams** (Dept of Geography); **Peter Agar** (Cambridge University Development Office); **Dr Sebastian Ahnert** (Dept of Physics); **Dr Jonathan Aldred** (Dept of Land Economy); **Stephen Aldridge** (CLG); **Graham Allen** (Academic Division); **Paul Allin** (Office of National Statistics); **Prof Phil Allmendinger** (Dept of Land Economy); **Dr Julian Allwood** (Dept of Engineering); **Stephen Almond** (Marine Management Organisation); **Prof Ash Amin** (Dept of Geography); **Prof Ross Anderson** (Computer Lab); **Francesco Anesi** (POLIS); **Annela Anger-Kraavi** (Dept of Land Economy); **Gini Arnold** (World Health Organisation); **Prof Madeleine Arnot** (Faculty of Education); **Prof Jean Bacon** (Computer Lab); **Dr Michelle Baddeley** (Faculty of Economics); **Jonathan Baker** (Collingwood Environmental Planning Ltd); **Prof Shankar Balasubramanian** (Dept of Chemistry); **Prof Andrew Balmford** (Dept of Zoology); **Nick Balon** (CRFS Ltd); **Richard Banks** (DECC); **Dr Tarak Barkawi** (POLIS); **Dr Jennifer Barnes** (Murray Edwards College); **Jenny Barnett** (POLIS); **Prof Michael Barrett** (Judge Business School); **Dr Matt Bassford** (RAND); **Jeffrey Bauer** (EUCOM); **Prof Sir David Baulcombe** (Dept of Plant Sciences); **Pilgrim Beart** (AlertMe.com Ltd); **Sir John Beddington** (GO-Science); **Dr Laura Bellingan** (Society of Biology); **Dr Jim Bellingham** (School of the Physical Sciences); **Prof Robert Bennett** (Dept of Geography); **Dr Alastair Beresford** (Computer Lab); **Prof Michael Best** (University of Massachusetts, Lowell); **Prof Christopher Bishop** (Microsoft Research Cambridge); **Dr Mike Bithell** (Dept of Geography); **Dr Jason Blackstock** (Centre for International Governance Innovation); **Dr Alan Blackwell** (Computer Lab); **Dr Robert Bloomfield** (Natural History Museum); **Prof Sir Tom Blundell** (Dept of Biochemistry); **Dr Helen Bodmer** (BIS); **Dr Adam Boies** (Dept of Engineering); **Sir Leszek Borysiewicz** (Vice Chancellor); **David Bosworth** (Dept of Materials Science & Metallurgy); **Charles Boulton** (Dept of Engineering); **Briony Bowe** (Dept of Earth Sciences); **Dr Billy Boyle** (Owlstone Nanotech); **Dr Michael Bravo** (Dept of Geography); **Prof Carol Brayne** (Dept of Public Health & Primary Care); **Laure Brévignon-Dodin** (Institute for Manufacturing); **Sir Leon Brittan** (UBS Investment Bank); **Sir Paul Britton** (Better Government Initiative); **Lord Alec Broers** (House of Lords); **Prof Willy Brown** (Faculty of Economics); **Dr Jude Browne** (Dept of Geography); **Dr Peter Browne** (DfT); **Ruth Bruce** (Emmanuel College); **Nicola Buckley** (Office of External Affairs and Communications); **Dr Brendan Burchell** (Dept of Sociology); **Dr Hilary Burton** (PHG Foundation); **Creon Butler** (HM Treasury); **Dr Victoria Cadman** (Ecological Continuity Trust); **Jackie Caine** (Society of Biology); **Prof Fernando Carvalho-Rodrigues** (NATO); **Prof Jeffrey Caton** (US Army War College); **Dr Jonathan Cave** (RAND); **Dr Richard Cawley** (School Commission); **Prof David Cebon** (Dept of Engineering); **Prof Howard Chase** (School of Technology); **Dr Jo Chataway** (RAND); **Dr Tim Chatterton** (DECC); **Sir John Chisholm** (Medical Research Council); **Dr Jamieson Christie** (GO-Science); **Jan Jakub Chromiec** (Hertie School of Governance); **Prof Daping Chu** (Dept of Engineering); **Dr Alex Churchill** (MOD); **Dr Alessio Ciulli** (Dept of Chemistry); **Dr Mike Clark** (Dept of Pathology); **Dr Belinda Clarke** (ideaSpace Enterprise Accelerator); **Rosemary Clarke** (King's College); **Prof John Clarkon** (Dept of Engineering); **Prof David Clary** (Foreign & Commonwealth Office); **Karen Clayton** (Health and Safety Executive); **Dr Richard Clayton** (Computer Lab); **Matthew Clevely** (Imperial College Business School); **Dr Andy Clements** (British Trust for Ornithology); **Dr Andrew Coburn** (Risk Management

Solutions); **Dr Peter Cochrane** (Cochrane Associates); **Dr Anthony Cohen** (The Open University); **Dr Simon Cohn** (Institute for Public Health); **Prof Nick Collings** (Dept of Engineering); **Prof Brian Collins** (UCL); **Ivan Collister** (Number 10 Policy Unit); **Dr David Connell** (Centre for Business Research); **Dr Alison Cooke** (Dept of Engineering); **Prof David Cope** (Parliamentary Office of Science and Technology); **Dr Alex Copley** (Dept of Earth Sciences); **Lucia Costanzo** (BIS); **Keith Cotterill** (Institute for Manufacturing); **James Cotton** (OneSpaceMedia); **Dr Chris Coulter** (Royal Academy of Engineering); **Dr Claire Craig** (GO-Science); **Prof Tim Crane** (Faculty of Philosophy); **Nicholas Crawford** (Wilberforce Society); **Dr Doug Crawford-Brown** (Dept of Land Economy); **Dr Hilary Cremin** (Faculty of Education); **Dr Hannah Critchlow** (Dept of Experimental Psychology); **Dr Thomas Crossley** (Faculty of Economics); **Prof Jon Crowcroft** (Computer Lab); **Sadia Cuthbert** (Judge Business School); **Prof Arthur Daemrich** (Harvard Business School); **Dr Jo Dally** (GO-Science); **James Dancy** (GO-Science); **Prof John Danesh** (Dept of Public Health & Primary Care); **George Danezis** (Microsoft Research Cambridge); **Prof John Daugman** (Computer Lab); **Prof Martin Daunton** (Faculty of History); **Frank Davies** (DECC); **David Davison** (Wellcome Trust Sanger Institute); **Stephen Davison** (External Affairs and Communications); **Prof Philip Dawid** (Centre for Mathematical Sciences); **Prof Dame Sandra Dawson** (Judge Business School); **Francesca Day** (The Triple Helix); **Prof Simon Deakin** (Judge Business School); **Dr Jenny Dean** (Judge Business School); **Sir Richard Dearlove** (Pembroke College); **Sabine Deering** (Dept of Chemical Engineering and Biotechnology); **Nicole Dewandre** (European Commission); **Dr Emanuele Di Angelantonio** (Dept of Public Health & Primary Care); **Dr Laura Diaz Anadon** (Harvard University Belfer Center); **Jenny Dibden** (DWP); **Brendan Dick** (BT); **Fiona Docherty** (Laboratory for Regenerative Medicine); **John Dodds** (BIS); **Prof Dame Athene Donald** (Dept of Physics); **Dr Amy Donovan** (Dept of Geography); **Carlo Dorlo** (European Commission); **Rowan Douglas** (Willis Research Network); **Pamela Dow** (DfE); **Prof Dame Ann Dowling** (Dept of Engineering); **Dr Lynnette Dray** (Dept of Architecture); **Andrew Duff MEP** (European Parliament); **Matthew Dunstan** (Dept of Chemistry); **Nick Dusic** (Pfizer); **Michael Eaton** (Welsh Government); **Lord John Eatwell** (Judge Business School); **Prof Marcial Echenique** (Dept of Architecture); **Charlie Edwards** (RAND); **Dr Geoffrey Edwards** (POLIS); **Prof Manuel Eisner** (Institute of Criminology); **Dr Miles Elsdon** (GO-Science); **Mike Emmerich** (New Economy); **Julian Evans** (School of the Humanities and Social Sciences); **Dr Rob Evans** (Cardiff University School of Social Sciences); **Dr Wai Yi Feng** (Faculty of Education); **Dr Shailaja Fennell** (Dept of Land Economy); **Dr Richard Fenner** (Dept of Engineering); **Caroline Fenwick** (BIS); **Dr Andrea Ferrari** (Dept of Engineering); **Prof William Fitzgerald** (Dept of Engineering); **Chris Fleming** (GO-Science); **Prof John Forrester** (Dept of History and Philosophy of Science); **Dr Oscar Franco** (School of Clinical Medicine); **Prof Sarah Franklin** (Dept of Sociology); **Prof Simon Franklin** (Dept of Slavonic Studies); **Dr John French** (University of East Anglia); **Prof Sir Richard Friend** (Dept of Physics); **Lindsay Galbraith** (Dept of Geography); **Prof Andrew Gamble** (POLIS); **Alberto Garcia-Mogollon** (Judge Business School); **Diana Garnham** (Science Council); **Dr Elizabeth Garnsey** (Institute for Manufacturing); **Dr Loraine Gelsthorpe** (Institute of Criminology); **Maria-Christina Georgiadou** (Centre for Sustainable Development); **Prof Zoubin Ghahramani** (Dept of Engineering);

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**William Horsley** (former BBC Foreign Correspondent); **Dr Ian Hosking** (Dept of Engineering); **Anthony House** (Google); **Dr Candice Howarth** (Anglia Ruskin University); **David Howarth** (Dept of Land Economy); **Dr Tim Hubbard** (Wellcome Trust Sanger Institute); **Trevor Huddleston** (DWP); **Prof Alan Hughes** (Judge Business School); **Dr Rex Hughes** (Wolfson College); **Prof Mike Hulme** (University of East Anglia); **Prof Sir Colin Humphreys** (Dept of Materials Science & Metallurgy); **Prof Felicia Huppert** (Wellbeing Institute); **Dr Julian Huppert MP** (House of Commons); **Dr Stephanie Hurst** (CLG); **Dr Shamus Husheer** (Cambridge Temperature Concepts Ltd); **Dr James Hutchinson** (Royal Society of Chemistry); **Gavin Ingham Brooke** (Spada); **Colin Irwin** (Defence Science & Technology Laboratory); **Joichi Ito** (MIT Media Lab); **Dr Agnieszka Iwasiewicz-Wabnig** (Dept of Physics); **Dr Sriya Iyer** (Faculty of Economics); **Alan Jackson** (Aptivate Ltd); **Prof James Jackson** (Dept of Earth Sciences); 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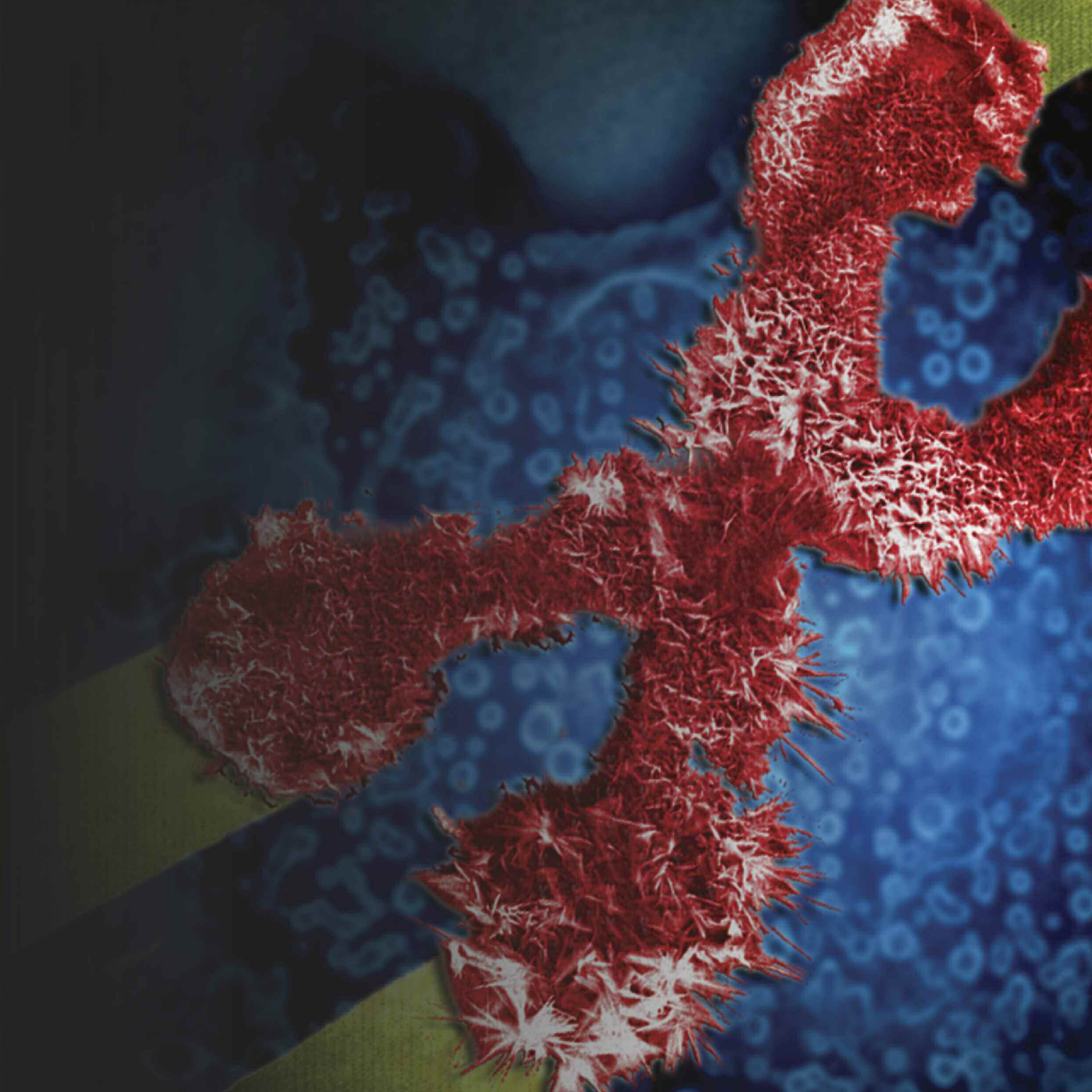
Susannah Kerr (Office of Julian Huppert MP); **Helen Kersley** (new economics foundation); **Maria Kettle** (Dept of Engineering); **Dr Peter Key** (Microsoft Research Cambridge); **Imran Khan** (Campaign for Science and Engineering in the UK); **Prof Kay-Tee Khaw** (School of Clinical Medicine); **Patricia Killiard** (Cambridge University Library); **Jeff Kipling** (GlaxoSmithKline); **Tom Kirk** (Office of External Affairs and Communications); **Clare Kitkat** (Christ's College); **Dr Michael Kitson** (UK Innovation Research Centre); **Dr Nigel Knight** (Faculty of Economics); **Rupert Koci-Edwards** (Government Strategy Analyst); **Aphrodite Korou** (BIS); **Dr Krzysztof Koziol** (Dept of Materials Science and Metallurgy); **Dr Markus Kraft** (Dept of Chemical Engineering and Biotechnology); **Prof Lawrence Krauss** (Arizona State University); **Dr Michael Kuczynski** (Pembroke College); **Prof Ajit Lalvani** (Imperial College); **Prof Michael Lamb** (Dept of Social and Developmental Psychology); **Prof Peter Landshoff** (Dept of Applied Mathematics and Theoretical Physics); **Philip Langsdale** (BAA); **Andrew Large** (Corpus Christi College); **Nat le Roux** (The Constitution Society); **Dr Nigel Leader-Williams** (Dept of Geography); **Prof Ian Leslie** (Computer Lab); **Eirann Leverett** (Darwin College); **Dr Tim Lewens** (Dept of History and Philosophy of Science); **Prof Ottoline Leyser** (Sainsbury Laboratory); **Prof Paul Linden** (Dept of Applied Mathematics and Theoretical Physics); **Dr Tom Ling** (RAND); **Dr Rebecca Lingwood** (Institute of Continuing Education); **Prof Peter Littlejohns** (National Institute for Health and Clinical Excellence); **Dr David Livesey** (Emmanuel College); **Dr Finbarr Livesey** (Institute for Manufacturing); **Prof Colin Lizieri** (Dept of Land Economy); **Prof Chris Lowe** (Dept of Chemical Engineering and Biotechnology); **Dr Leila Luheshi** (Dept of Chemistry); **Tim Luke** (Number 10 Policy Unit); **Dr Mike Lynch** (Autonomy Corp); **Prof Jan Maciejowski** (Dept of Engineering); **Prof David MacKay** (DECC); **Marie-Anne Mackenzie** (BIS); **Dr Anil Madhavapeddy** (Computer Lab); **Dr Mirca Madianou** (University of Leicester); **Prof Robert Mair** (Dept of Engineering); **Prof Theresa Marteau** (Institute for Public Health); **Prof Ben Martin** (University of Sussex); **Prof Ron Martin** (Dept of Geography); **Dr Luca Martinelli** (European Commission); **Dr Cecilia Mascolo** (Computer Lab); **Dr Epaminondas Matorakos** (Dept of Engineering); **Caroline Matthews** (Computer Lab); **Genevieve Maul** (Office of External Affairs and Communications); **Ros Mayes** (Institute for Manufacturing); **Tony McBride** (Royal Society); **Prof Duncan McFarlane** (Dept of Engineering); **Dr Chris McFee** (GO-Science); **Glenn McKee** (House of Commons); **Ewen McKinnon** (Cabinet Office); **Dr Richard McMahon** (Dept of Engineering); **Prof Peter McNaughton** (Dept of Pharmacology); **Stewart McTavish** (ideaSpace Enterprise Accelerator); **Dr Nafees Meah** (DECC); **Prof Geoff Meeks** (Judge Business School); **Matthew Mellor** (Pembroke College); **Prof Campbell Middleton** (Dept of Engineering); **Tim Middleton** (BlueSci); **Anna Mieczakowski** (Dept of Engineering); **Natasa Milic-Frayling** (Microsoft Research Cambridge); **Andrew Miller MP** (House of Commons); **Prof Erik Millstone** (University of Sussex); **Prof Bill Milne** (Dept of Engineering); **Dr Jonathan Milner** (Abcam plc); **Dr Andrea Mina** (UK Innovation Research Centre); **Dr Tim Minshall** (Institute for Manufacturing); **Amy Mokady** (i-Teams Programme); **Dr Alan Moodie** (GlaxoSmithKline); **Dr Ken Moody** (Computer Lab); **Lindsay Moore** (Dept of Physiology Development and Neuroscience); **Jane Moorman** (Pembroke College); **Rich Morales** (Institute for Manufacturing); **Dr Neil Morgan** (Technology Strategy Board); **Peter Morgan** (University Library); **Matthew Moss** (Office of the VC); **Dr Steven Murdoch** (Computer Lab); **Isayvani Narlikar** (POLIS); 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CSaP is very grateful to the University's Department of Engineering for permission to use its photographic images in this report, as follows: *Front Cover*: Weichih Lin (catalyst-free synthesis of zinc oxide nanostructures using platinum microheaters under ambient environmental conditions; different formations of ZnO nanostructures such as cluster-like, needle-like and hexagonal nanowires are synthesised from the oxidation of Zn thin film by local heating). *Inside Front Cover and Page 1*: Cise Unluer ('Up to the Sky' – a roof structure allowing the entry of light during daytime and visibility of the stars at night). *Page 4*: Shubnit Bhumbra ('Inside a Winding Tunnel' – a test chamber in action as turbine blades rotate at hundreds of revolutions per minute). *Page 7*: Eren Ore ('Delamination 2' – the layers of a thin-film solar cell can become delaminated due to the incompatibility of materials, or conditions such as temperature or pressure affecting material deposition). *Page 10*: Pooya Sareh ('Origami Whirlpool' – a "flat-foldable" pattern which reconfigures to a flat surface in its completely folded condition; as pioneered by Prof Koryo Miura [Institute of Space and Aeronautical Science at Tokyo University], such patterns are used to explore the efficient engineering design of deployable structures). *Page 20*: Shubnit Bhumbra ('Resonance Patterns' – regions of nodes on a vibrating surface are illustrated by scattering tea leaves on the surface). The photographs on pages 2 and 24 are reproduced courtesy of the Cambridge Evening News.





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