

conference to discuss and build the new Portuguese National Mental Health Plan, and the UK was invited to present the Dementia Challenge. Some research and commercial outcomes were also identified: the British company IXICO and S24, their Portuguese partner, presented their partnership and the pilot project to be launched in Portugal for IXICO's Assessa technology. They will work together and also develop further R&D.

DEMENTIAHACK

Led out of Toronto, this event brought together software

engineers, clinicians and people living with dementia to explore and create technological solutions for self- and community management. If someone living with dementia could use an app or device to self-manage, then (s)he would be able to live more independently for longer, reducing the strain on relatives, finances and the healthcare system.

SIN in collaboration with HackerNest ran a hackathon (an event where solutions have to be designed, coded and demonstrated within 24 hours)

to tap into local tech creativity, attracting around 175 people and producing 16 product pitches. The overall winner was a Web-based management tool called CareUmbrella which integrated NFC tags and mobile devices to play a video from a family member explaining how to use an appliance when a phone was placed near the appliance. CareUmbrella took home four years of hosting/support from event sponsor Linode and a business development trip to the UK for the UK HealthTech conference. They agreed a partnership with

UK-based GX Group to develop their contactless technology (creating a UK entity in the process) and met partners who may be interested in trialling the technology.

CONCLUSION REMARKS

The Science and Innovation Network contributed to delivery of the Dementia Challenge. This model of a global thematic campaign to support and promote a priority issue for the UK, through science and innovation, will be continued this year to support other subject areas including Milan Expo, antimicrobial resistance and the low carbon economy.

FACTS:

- Today, more than 47 million people worldwide have dementia;
- A new case is diagnosed every four seconds;
- In 2010, the total cost of dementia care was US\$ 604 billion, equivalent to 1% global GDP;
- By 2030, the minimum cost of caring for people with dementia worldwide is estimated at US\$ 1.2 trillion



PARLIAMENTARY OFFICE OF SCIENCE AND TECHNOLOGY (POST)



RECENT POST PUBLICATIONS

Value Based Assessment of Drugs

January 2015

POSTnote 487

In 2010, the Government proposed moving towards a broader value-based system for assessing and pricing branded drugs. Such an approach aims to ensure that the price the NHS pays for a medicine better reflects its benefits. This outlines recent proposals to change the current assessment methods.

The Darknet and Online Anonymity

March 2015

POSTnote 488

A small proportion of websites use sophisticated anonymity systems, which allow their operators to conceal their identity. This part of the web is commonly referred to as the darknet. The darknet helps citizens to protect their security and privacy and to circumvent censorship. It also facilitates organised crime, such as the billion dollar drug market known as Silk Road. This discusses the challenge of preventing such crimes without compromising other uses of anonymity technologies.

Vegetative and Minimally Conscious States

March 2015

POSTnote 489

Medical advances mean that increasing numbers of people survive trauma, stroke, periods of low oxygenation and severe brain infections. Some, however, are left with substantially reduced consciousness for months to years. This discusses the medical, legal and ethical challenges associated with the care of patients in vegetative and minimally conscious states.

Biodiversity Auditing

March 2015

POSTnote 490

Biodiversity supports the ecosystem services on which we rely for well-being and economic resources. Areas that have had an audit can make more effective use of ecological data to meet planning and conservation objectives. This POSTnote summarises the data sources used and the advantages of the audit approach for addressing biodiversity loss.

Measuring Living Standards

March 2015

POSTnote 491

Living Standards (LS) refer to households' level of access to goods, services and recreational activities. Assessments of LS vary in how they set the thresholds that define a certain standard of living and how they measure who achieves these thresholds. This POSTnote outlines different approaches to setting and measuring thresholds and their strengths and limitations. It also summarises research on recent trends in living standards and the key factors that influence them.

Energy Storage

April 2015

POSTnote 492

The Government lists energy storage as one of eight great technologies in which the UK can become a world leader. This briefing outlines the roles of energy storage in the electricity, heat and transport sectors and describes the technologies used from the household level up. It also discusses current barriers and policies for energy storage and potential future uptake.

CURRENT WORK

Biological Sciences – Sugar and Health, Minimum Age of Criminal Responsibility, Health of Military Personnel, Anti-Ebola Treatments, Regulating Synthetic Biology, Trends in Crime and Justice, Forensic Linguistics, Cognitive Biases in Court, 100,000 Genomes.

Environment and Energy – Novel Food Production Technologies, Herbicide Resistance, Soils, Ecosystem Services & Food Security, Managing the UK Plutonium Stockpile, Offshore Mining, Trends in the Environment, Future of Natural Gas, Precision Agriculture, Trends in Transport.

Physical sciences and IT – Broadband Internet Access, Commercial Space Activities, Trends in ICT, Automation in Military Operations.

Social Sciences – Trends in Politics and Democracy, Trends in Education.

CONFERENCES AND SEMINARS

Reducing Greenhouse-Gas Emissions from Crops

On January 20th, POST hosted a working breakfast for MPs, Peers and their staff on reducing greenhouse gas emissions from crops. This briefing event brought together six experts in the field of

agriculture and emissions mitigation who spoke to the subject before answering questions. The seminar was chaired by Lord Cameron of Dillington. The speakers included: Professor Malcolm Bennett, Professor of Plant Sciences in the Plant and Crop Sciences Division, University of Nottingham; Professor Simon Blackmore, Head of Engineering and specialist in precision agriculture, Harper Adams University; Professor Dave Reay, Assistant Principal and Chair in Carbon Management & Education, University of Edinburgh; Mr Laurence Smith, Senior Sustainability Researcher, Organic Research Centre at Elm Farm and member of the Agricultural Greenhouse Gas Inventory Research Platform; Dr Luke Spadavecchia, Agricultural Greenhouse-Gas R&D Platform Coordinator, Defra; and, Mr John Williams, Principal Research Scientist, ADAS UK Ltd and Work Package Leader for the UK's Agricultural Greenhouse Gas Inventory Research Platform.

GM Insects and Disease Control

On 10th February, POST hosted a working breakfast for MPs, Peers and their staff to discuss the science and resulting policy issues relating to the subject of controlling disease with GM insects in an intimate and informal session. This briefing event brought together eight experts who spoke on the subject before answering questions. It was chaired by Lord Naren Patel. The speakers included: Professor Andrea Crisanti, Professor of Molecular Parasitology, Division of Cell and Molecular Biology, Imperial College London; Professor Luke Alphey, Head of Arthropod Genetics Group, The Pirbright Institute; Professor John Pickett, Rothamsted Research; Professor Paulo Paes Andrade, Department of Genetics, Federal University of Pernambuco, Brazil; Professor John Mumford, Professor of Natural Resource Management, Centre for Environmental Policy, Imperial College London; Dr John Marshall, Medical Research Council Research Fellow, Faculty of Medicine, School of Public Health, Imperial College London; Professor Mike Bonsall, Professor of Mathematical Biology, Department of Zoology, University of Oxford; and, Professor Andrew Stirling, Professor of Science and Technology Policy Research Unit, University of Sussex.

Coping with a Large Nuclear Accident

On 11th March, in conjunction with the All Party Parliamentary Nuclear Energy Group, POST hosted a seminar on strategies to mitigate the effects of a large nuclear accident. Chernobyl (1986) and Fukushima Daiichi (2011) showed that nuclear accidents can occur, even if they are very rare. This event was chaired by lan Liddell-Grainger. A multi-university team of academics led by Professor Philip Thomas, City University London, presented work from its Engineering and Physical Sciences Research Council funded project.

STAFF, FELLOWS AND INTERNS AT POST

Fellows

Beth Brockett, University of Lancaster, British Ecological Society Lindsay Walker, University of Exeter, Natural Environment Research Council.

Stephanie Osborne, Centre for Ecology and Hydrology, Natural Environment Research Council

Claire Mawditt, Epidemiology and Public Health, University College London, Economic and Social Research Council

Samuel Murison, Social Science, Health and Medicine, King's College London, Masters intern

Daniel Slade, Geography and Planning, University of Liverpool, Economic and Social Research Council

Elo Luik, Institute of Social and Cultural Anthropology, University of Oxford, Economic and Social Research Council

Claire Louise Carter, Science Policy Research Unit, University of Sussex, Economic and Social Research Council

David Neale, Faculty of Education, University of Cambridge, Economic and Social Research Council

Wybo Wiersma, Oxford Internet Institute, University of Oxford, Economic and Social Research Council

Leila Jameel, Department of Experimental Biology, University College London, Economic and Social Research Council

Sarah Foxen, Department of Modern Languages, University of Exeter, Arts and Humanities Research Council

Sophie Stammers, Department of Philosophy, King's College London, Arts and Humanities Research Council

Ruth Nottingham, University of Nottingham, Biotechnology and Biological Sciences Research Council

Lorna Christie, University of Glasgow, Engineering and Physical Sciences Research Council

Harry Beeson, University of Cambridge, Engineering and Physical Sciences Research Council

Karla-Luise Herpoldt, Imperial College London, Royal Society of Chemistry

INTERNATIONAL ACTIVITIES

On 13th February, POST collaborated with the US Government Accountability Office to host a presentation and panel discussion, Big Data: Challenges and Social Impacts, at the AAAS Annual Meeting in San Jose, USA. The panel comprised Timothy M Persons from the US Government Accountability Office, Claire Craig from the UK Government Office for Science, Dave Feinleib of The Big Data Group, George Poste from Arizona State University, Edward You from the US Federal Bureau of Investigation, and Piyushimita Thakuriah from the University of Glasgow. This wide-ranging discussion looked at how society's improved ability to collect, store, and analyse information, is creating significant opportunities across healthcare, transport, business and numerous other sectors, while raising important challenges in areas such as privacy, security and governance.

On 17th February, Dr Aaron Goater presented at a meeting of the PACITA project in Lisbon. A proposal to establish a new Parliamentary Office of Science and Technology within the Portuguese Parliament was discussed with Portuguese MPs.

On 25th-27th February, Dr Lydia Harriss, Dr Caroline Kenny and Dr Jonathan Wentworth attended a PACITA conference on 'The Next Horizon of Technology Assessment' in Berlin to speak at and chair sessions with colleagues from the European Parliamentary Technology Assessment network. These included sessions on Governance of Big Data and the Role of Technology Assessment, The Role of Research Evidence in Improving Parliamentary Democracy and Horizon Scanning: Giving Policymakers the Long View. Proceedings of the Conference will be published shortly.



HOUSE OF COMMONS SELECT COMMITTEE ON SCIENCE AND TECHNOLOGY

The Science and Technology Committee scrutinises the expenditure, administration and policy of the Government Office for Science, a semi-autonomous organisation based within the Department for Business, Innovation and Skills.

At the Dissolution of Parliament the Members of the Science and Technology Committee were:

Dan Byles (Conservative, North Warwickshire), Jim Dowd (Labour, Lewisham West and Penge), David Heath (Liberal Democrat, Somerton and Frome), Stephen Metcalfe (Conservative, South Basildon and East Thurrock), Andrew Miller (Labour, Ellesmere Port and Neston), Stephen Mosley (Conservative, City of Chester), Pamela Nash (Labour, Airdrie and Shotts), Sarah Newton (Conservative, Truro and Falmouth), Graham Stringer (Labour, Blackley and Broughton) and David Tredinnick (Bosworth). Andrew Miller was elected by the House of Commons to be the Chair of the Committee on 9 June 2010.

ORAL EVIDENCE

The transcripts of these evidence sessions are available on the Science and Technology Committee's website.

On 21 January 2015, the Committee held a session on the *Science and Innovation Strategy* with Greg Clark MP, Minister of State for Universities, Science and Cities, Cabinet Office and Department for Business, Innovation and Skills, Professor Sir Mark Walport, Government Chief

Scientific Adviser, Government Office for Science. This session provided the opportunity to discuss the Government's recent science and innovation strategy. It allowed the Committee to explore what the Government expects the strategy to deliver, what the timescales on those deliverables might be, what is new in the strategy and what simply consolidates previous policy decisions and what might be missing from it.

On 25 February 2015, the Committee held a session on *The future of the Food and*

Environment Research Agency with Chris Sellers, Executive Director, Capita, Dr Dan Heard, Market Director (Science), Capita, Professor Robert Edwards, Head of the School of Agriculture, Food and Rural Development, Newcastle University; Lord de Mauley, Parliamentary Under Secretary of State for Natural Environment and Science, Department for Environment, Food & Rural Affairs. The session followed the Government's announcement on 11 February 2015, that Capita and Newcastle University had been selected to form a joint venture with the Food and Environment Research Agency (FERA), this session examined the future of FERA and how the Agency's scientific capabilities will be safeguarded.

CURRENT INQUIRIES

If re-established in the new Parliament, the Committee will decide upon a programme of inquiries.

REPORTS

Advanced genetic techniques for crop improvement: regulation, risk and precaution

On 26 February 2015, the Committee published its Fifth Report of Session 2014-15, *Advanced genetic techniques for crop improvement: regulation, risk and precaution*, HC 328.

Pre-appointment hearing with the Government's preferred candidate for Chair of the Biotechnology and Biological Sciences Research Council (BBSRC)

On 3 March 2015, the Committee published its Eighth Report of Session 2014-15, *Pre-appointment hearing with the Government's preferred candidate for Chair of the Biotechnology and Biological Sciences Research Council (BBSRC)*, HC 1087.

Royal Botanic Gardens, Kew

On 4 March 2015, the Committee published its Seventh Report of Session 2014-15, *Royal Botanic Gardens, Kew*, HC 866.

Current and future uses of biometric data and technologies

On 7 March 2015, the Committee published its Sixth Report of Session 2014-15, *Current and future uses of biometric data and technologies*, HC 734.

Legacy-Parliament 2010-15

On 18 March 2015, the Committee published its Ninth Report of Session 2014-15, *Legacy-Parliament 2010-15*, HC 758.

GOVERNMENT RESPONSES

National health screening

On 29 January 2015, the Department of Health published the Government Response to the Committee's report on *National health screening*, Cm 8999.

Responsible Use of Data

On 5 March 2015, the Committee published the Government's Response to its Report on *Responsible Use of Data*, HC 1086.

Responses to Reports not received by the time of Dissolution are expected to be published by Command Paper, or by Special Report after the election.

FURTHER INFORMATION

Further information about the Science and Technology Committee or its current inquiries can be obtained from the Clerk of the Committee, Stephen McGinness, or from the Senior Committee Assistant, Darren Hackett, on 020 7219 2792/2793 respectively; or by writing to: The Clerk of the Committee, Science and Technology Committee, House of Commons, London SW1A 0AA. Enquiries can also be e-mailed to scitechcom@parliament.uk. Anyone wishing to be included on the Committee's mailing list should contact the staff of the Committee. Anyone wishing to submit evidence to the Committee is recommended to obtain a copy of the guidance note at www.parliament.uk/commons/selcom/witguide.htm. The Committee has a website, www.parliament.uk/science, where all recent publications, terms of reference for all inquiries and press notices are available.



HOUSE OF LORDS SCIENCE AND TECHNOLOGY SELECT COMMITTEE

The members of the Committee, who served on the Committee for the 2014-15 session, were: Lord Dixon-Smith, Baroness Hilton of Eggardon, Lord Hennessy of Nympsfield, Lord O'Neill of Clackmannan, Baroness Manningham-Buller, Lord Patel, Lord Peston, Lord Rees of Ludlow, Viscount Ridley, the Earl of Selborne (Chairman), Baroness Sharp of Guildford, Lord Wade of Chorlton, Lord Willis of Knaresborough and Lord Winston. At the dissolution of Parliament on 30 March 2015, the Committee ceased to exist until the start of the new Parliament. The rotation rule means that nine Members are no longer eligible to serve.

Resilience of Electricity Infrastructure

In July 2014, the Committee launched an inquiry into the resilience of electricity infrastructure. The inquiry focused on the resilience of the UK's electricity infrastructure to peaks in demand and sudden shocks. It was interested in the resilience of the system both in the short term (to 2020) and in the medium term (to 2030) as electricity generation is

decarbonised. Oral evidence concluded in January 2015. The Committee reported on 12 March 2015. A Government response will be published in the new Parliament.

2025: Priorities for Scientific Research

In July 2014, the Committee conducted an inquiry into the challenges that the Government's Science and Innovation Strategy should tackle and the UK's priorities for scientific

research. No report was produced, but evidence was taken and transcripts were published.

Behaviour Change

In May and June 2014, the Committee took evidence from witnesses to follow up on its 2011 report into behaviour change, and assess what progress has been made in this area. This focused on the two behaviour change case studies that the Committee had investigated in its original inquiry: modal shift in transport and obesity. The Committee wrote to the Minister for Government Policy, Rt Hon Oliver Letwin MP, making a number of observations and posing a series of questions. It received a reply.

International STEM students

In January 2014, the Committee launched a follow up inquiry to its 2012 report on higher education in science, technology, engineering

and mathematics (STEM) subjects. The inquiry focused on the effect on international STEM students of immigration policy. Many submissions were received, seven oral evidence sessions were held, and a report published on 11 April 2014. A Government response was received in July. A debate was held on 19 March 2015.

FURTHER INFORMATION

The reports, Government responses, written and oral evidence to the Committee's inquiries mentioned above, as well as the Calls for Evidence and other documents can be found on the Committee's website. Further information about the work of the Committee can be obtained from Chris Clarke, Committee Clerk, clarkechr@parliament.uk or 020 7219 4963. The Committee Office email address is hlscience@parliament.uk.



HOUSE OF COMMONS LIBRARY SCIENCE AND ENVIRONMENT SECTION



Scientists and other staff in the Science and Environment Section provide confidential, bespoke briefing to Members and their offices on a daily basis. They also provide support to Commons Select Committees, and produce longer notes and research papers which can be accessed on line at http://www.parliament.uk/topics/topical-issues.htm

Summaries of recently updated briefings are opposite.

For further information contact: Sarah Hartwell-Naguib Head of Section Tel: 020 7219 1665 email: hartwellnaguibs@parliament.uk

RECENT PUBLICATIONS

Mitochondrial Donation 22nd October 2014 | SN06833

New mitochondrial donation techniques could provide an option for women with mitochondrial DNA mutations to enable them to give birth to healthy children. They involve using donor mitochondria in an in vitro fertilisation (IVF) treatment.

This provides a summary of the role of mitochondria, mitochondrial disease and the proposed new techniques. It also provides information on the reviews and consultations. The main safety and ethical considerations associated with the introduction of mitochondrial donation into clinical practice are discussed. Summaries of recent Parliamentary debates and a House of Commons Science and Technology Select Committee one off session are included.

The Parliamentary Office of Science and Technology has provided two annexes. They provide further information on other mitochondrial transfer methods and mitochondrial matching.

Shale Gas and Fracking

5th February 2015 | SN06073

Drilling for shale gas is at the exploratory phase in the UK. In North America, the rapid development of shale gas resources has transformed the world gas market.

The consensus seems to be that shale gas will not be a 'game changer' here. There is less land available on which to drill, and landowners do not own the rights to hydrocarbons beneath their

land. However, in June 2013 Centrica acquired a 25% stake in Cuadrilla's exploration licence in Lancashire, and the Government and British Geological Survey published raised estimates of the shale gas resource in Northern England. The Government is also consulting on legislation to introduce tax incentives for shale gas exploration, and has announced community financial benefits.

Provisions relating to the underground access regime were included in the Infrastructure Act 2015. Separate briefings are available on the detail of the Infrastructure Bill.

Religious Slaughter of Animals

19th February 2015 | SN07108

There has been a recent growth in public and parliamentary focus on methods used for religious slaughter. This includes welfare concerns about whether animals are stunned before slaughter, and which food outlets are serving halal meat as a matter of course to all customers, as well as whether all meat prepared by halal and kosha methods is being labelled.

This provides information on slaughter regulations which set minimum welfare standards at slaughter. These require all animals to be stunned before slaughter to minimise their suffering. Member States may exempt slaughter in accordance with religious beliefs from the prestunning requirement and the UK implements this derogation.

It details the Government position and the debate around the scientific evidence on slaughter and animal welfare.

Fixed Broadband: Policy and Speeds

3rd March 2015 | SN06643

This describes current broadband access and coverage, and provides the Government's broadband policy. It focuses on the delivery of broadband targets and funding in England. The devolved administrations have their own delivery programmes.

It also contains data on broadband speeds and superfast availability by region, and by parliamentary constituency, including maps.

The Government's ambition is to provide everyone in the UK with access to broadband with a download speed of at least 2 megabits per second (Mbps) and to provide 95% of the UK with broadband speeds of at least 24 Mb/s ('next-generation access') by 2017.

Litter

17th March 2015 | SN06984

Local authorities in England and Wales spend almost £1 billion per year clearing up litter, but the cost of litter goes beyond the cost of clearing it up. There are implications for health, the environment and tourism.

This outlines the cost of litter, relevant legislation and penalties for the offence of littering, forthcoming legislation and how to combat litter

Planning Reform proposals

17th March 2015 | SN06418

Since the Coalition Agreement, major reforms to the planning system have taken place with the introduction of the Localism Act 2011 and the National Planning Policy Framework. Changes have also been made in the Growth and Infrastructure Act 2013, aimed at speeding up the planning system.

The Infrastructure Act 2015 gained Royal Assent on 12th February 2015 and contains changes to making and modifying development consent orders for nationally significant infrastructure projects. It also provides the basis of a new system for deemed discharge of planning conditions. Further information is set out in the Library standard note, Infrastructure Bill: Planning Provisions, SN06909.

As well as these Acts a number of other announcements on planning reform have been made: in Budget 2014, the Technical Consultation on Planning July 2014, Consultation: planning and travellers, September 2014, National Infrastructure Plan 2014 and Autumn Statement 2014, December 2014. Together these include:

- allowing further changes of use to residential use without requiring planning permission;
- · reforming the system of permitted development rights;
- amending the definition of "travellers" for planning purposes;
- proposals to get more brownfield land back into use;
- steps to speed up section 106 negotiations; and
- proposed reform of the compulsory purchase regime.

Most of the proposals would apply only to England.

This provides information about the key planning proposals.

For information about stimulating housing supply see Library standard note, "Stimulating housing supply".

Smoking in Public Places

27th March 2015 | SN04414

This note outlines the provisions of the smoking ban in England that came into effect in 2007. It includes developments such as the

introduction of regulations in 2015 regarding smoking in private vehicles.

It is now against the law to smoke in a private vehicle when children are present.

ACTIVITIES

2015 has led to a flurry of activity leading up to the dissolution of Parliament.

In addition to providing bespoke briefings for MPs, and publishing briefing papers, the section has prepared debate packs, containing briefing and supporting press and parliamentary material, for debates on: Energy; Contaminated blood; North sea oil and gas industry employment; Financial support available for restoration of opencast coal sites; Compensation for victims of badly installed cavity wall insulation; Dairy industry; Effect of national infrastructure projects on local redevelopment; Pubs and planning legislation; E-petition relating to ending non-stun slaughter to promote animal welfare; Epilepsy; Low carbon electricity generation; Harvey's law; County Durham plan; Management and delivery of broadband; Planning and the national planning policy framework; and Reform of the Vaccine Damage Payment Act.

The Science and Environment Section was pleased to have one of its Research Papers shortlisted for the EU Commission's Common Agricultural Policy (CAP) Communication Awards 2014 in the "Communication to stakeholders" category. The paper, CAP reform 2014-2020; EU Agreement and Implementation in the UK and in Ireland (updated) was prepared by the Commons agriculture specialist, Emma Downing, and the agriculture specialists in the Devolved Administrations' and Irish (Oireachtas) research services.

The team was not selected as finalists, but were invited to Brussels by the Commission to attend a conference on communicating the CAP. The awards were presented by Agriculture Commissioner Phil Hogan. The project summary and impact can be viewed at: http://ec.europa.eu/agriculture/cap-communication-network/best-practices/index_en.htm#project_23

Five Library Clerks from the Science Section spent two days at the Scottish Parliament catching up with their opposite numbers and joining some of their training talks from speakers including Jason Leitch, Clinical Director at the Scottish Government. This was an excellent opportunity to share knowledge as well as current working practices.

Dr David Hirst coordinated training for Montenegrin Parliament researchers as part of a British Embassy funded project led by DeFacto Consultancy entitled: "Strengthening capacities of Parliament's administration to prepare and evaluate public policies based on data analysis". He also spoke at a public conference entitled: Making data available for the purpose of creating public policies in Montenegro, where I spoke about "Science communication for non-experts: Using data in the UK Parliament."

David Hough visited the EU Parliament where he attended sessions by the UK National Parliament Representatives to the EU, the Director-General of the European Parliament Research Service and met specialists dealing with climate change and energy.

The Section has made contributions to the Library publication: Key Issues for the Parliament which will be published in hard copy and online shortly after the election.