

*Tuesday 24 May 2016*

*Victoria Borwick and Carol Monaghan visited Metropolitan Police Forensic Services, London, in accordance with the Committee's decision of 15 March 2016.*

**Tuesday 24 May 2016**

Members present:

Nicola Blackwood, in the Chair

Victoria Borwick  
Jim Dowd  
Chris Green  
Dr Tania Mathias

Carol Monaghan  
Graham Stringer  
Matt Warman

***1. Impact of EU regulation on the UK life sciences***

The Committee considered this matter.

***2. Graphene***

*Ordered*, That the written evidence relating to Graphene submitted by Tim Harper be reported to the House for publication on the internet.

***3. Robotics and artificial intelligence***

The Committee considered this matter.

*Ordered*, That the following written evidence relating to Robotics and artificial intelligence be reported to the House for publication on the internet:

BAE Systems  
Optima Control Solutions Ltd.  
John Phillips

***4. Satellites and space***

*Ordered*, That the written evidence relating to Satellites and space submitted by Bristol Spaceplanes Limited be reported to the House for publication on the internet.

***5. Smart meters***

The Committee considered this matter.

*Ordered*, That the following written evidence relating to Smart meters be reported to the House for publication on the internet:

Smart Energy GB  
British Gas

## ***6. Science communication***

The Committee considered this matter.

*Ordered*, That the following written evidence relating to Science communication be reported to the House for publication on the internet:

Sarah Burns  
Institute for Research in Schools  
Holger Kessler  
Professor James Hartley, Keele University  
Space Systems Division of Airbus Defence & Space UK Ltd

## ***7. Science in emergencies: chemical, biological, radiological or nuclear incidents***

The Committee considered this matter.

*Ordered*, That the following written evidence relating to Science in emergencies: chemical, biological, radiological or nuclear incidents be reported to the House for publication on the internet:

Parents Concerned About Hinkley  
Professor Wade Allison  
Dr John Drury  
Dr Ian Fairlie  
Nuclear Industry Association  
The Emergency Planning Society  
The National Physical Laboratory  
Staffordshire Civil Contingencies Unit  
Food Standards Agency  
EDF Energy  
Met Office  
BAE Systems CORDA  
Institute of Physics and Engineering in Medicine  
ADS Group  
Home Office  
The Royal Society

The Royal Society of Edinburgh

**8. Government grant agreements and academic research**

*Ordered*, That the correspondence from the Secretary of State for Business, Innovation and Skills regarding Government grant agreements and academic research be reported to the House for publication on the internet.

**9. Higher Education and Research White Paper**

The Committee considered this matter.

*Ordered*, That the correspondence from the Minister of State for Universities and Science regarding the Higher Education and Research White Paper be reported to the House for publication on the internet.

**10. UK Research & Innovation**

The Committee considered this matter.

**11. Robotics and artificial intelligence**

Dr Rob Buckingham, Director, Remote Applications in Challenging Environments, Professor Stephen Muggleton, Association for the Advancement of Artificial Intelligence, Professor Nick Jennings, Royal Society Working Group on Machine Learning, and Professor Philip Nelson, Chair, Research Councils UK, gave oral evidence.

Richard Moyes, Managing Partner, Article 36, and Dr Owen Cotton-Barratt, Research Fellow, Future of Humanity Institute, gave oral evidence.

[Adjourned till Tuesday 7 June at 2.00pm.]

*Monday 6 June 2016*

*The Chair, Victoria Borwick and Matt Warman visited Google Deepmind, London, in accordance with the Committee's decision of 19 April 2016.*

**Tuesday 7 June 2016**

Members present:

Nicola Blackwood, in the Chair

Victoria Borwick  
Stella Creasy  
Jim Dowd  
Chris Green

Dr Tania Mathias  
Carol Monaghan  
Graham Stringer  
Matt Warman

***1. Graphene***

*Ordered*, That the written evidence relating to Graphene submitted by Arup be reported to the House for publication on the internet.

***2. Regenerative medicine***

*Ordered*, That the following written evidence relating to Regenerative medicine be reported to the House for publication on the internet:

Mr Christopher Roy-Toole  
University of Bristol  
NHS Blood and Transplant  
REGenableMED  
Parkinson's UK  
Centre for Doctoral Training in Regenerative Medicine  
Department of Health  
Genetic Alliance UK  
National Institute for Health and Care Excellence  
The Humanimal Trust  
Dr Paul Lewis  
British Heart Foundation  
Innovate UK  
The Academy of Medical Sciences  
Scottish National Blood Transfusion Service  
Human Tissue Authority  
PHG Foundation  
Wellcome Trust  
Dr Navid Malik  
The Association of the British Pharmaceutical Industry  
Anthony Nolan  
BioIndustry Association  
Charlotte Lozier Institute

AstraZeneca  
The Medicines and Healthcare products Regulatory Agency  
The Cell and Gene Therapy Catapult  
GSK

### ***3. Robotics and artificial intelligence***

*Ordered*, That the following written evidence relating to Robotics and artificial intelligence be reported to the House for publication on the internet:

Professor Alan Winfield, Bristol Robotics Laboratory  
Professor Ian Pyle

### ***4. Science communication***

*Ordered*, That the following written evidence relating to Science communication be reported to the House for publication on the internet:

Dr Pallavi Banerjee  
Social and Public Health Sciences Unit, University of Glasgow  
University of  
Professor Martin Bauer  
Chartered Institute of Public Relations

### ***5. Science in emergencies: chemical, biological, radiological or nuclear incidents***

*Ordered*, That the written evidence relating to Science in emergencies: chemical, biological, radiological or nuclear incidents submitted by Science Media Centre be reported to the House for publication on the internet.

### ***6. Smart meters***

*Ordered*, That the written evidence relating to Smart meters submitted by Hugh Smeaton Limited be reported to the House for publication on the internet.

### ***7. UK Research and Innovation***

*Ordered*, That the correspondence from the Minister of State for Universities and Science regarding the appointment process for the Chair of UKRI be reported to the House for publication on the internet.

### ***8. EU regulation of the life sciences***

Draft Report (*EU regulation of the life sciences*) proposed by the Chair, brought up and read.

*The draft report was agreed to; the Formal Minutes relating to the consideration of the Report are published in the First Report of the Committee, HC 158.*

### **9. Digital skills crisis**

Draft Report (*Digital skills crisis*) proposed by the Chair, brought up and read.

*The draft report was agreed to; the Formal Minutes relating to the consideration of the Report are published in the Second Report of the Committee, HC 270.*

### **10. Satellites and space**

Draft Report (*Satellites and space*) proposed by the Chair, brought up and read.

*The draft report was agreed to; the Formal Minutes relating to the consideration of the Report are published in the Third Report of the Committee, HC 160.*

### **11. Science in emergencies: chemical, biological, radiological or nuclear incidents**

Christopher Abbott, Chairman, Emergency Planning Society CBRN Professional Working Group, Professor Patrick Regan, Science Area Leader for Radioactivity, National Physical Laboratory, James Webster, Civil Contingencies Officer, Staffordshire Civil Contingencies Unit, and Andy Bell, Deputy CBRN(E) Lead, Chief Fire Officers' Association, gave oral evidence.

Phil Evans, Government Services Director, Met Office, Dr Dame Sue Ion, Chair, Nuclear Innovation Research Advisory Board, and Dr Edward Sykes, Senior Media Manager, Science Media Centre, gave oral evidence.

[Adjourned till Tuesday 14 June at 9.00am.]

*Thursday 9 June 2016*

*The Chair, Victoria Borwick, Chris Green and Dr Tania Mathias visited LGC Forensics, London, in accordance with the Committee's decision of 12 April 2016.*

**Tuesday 14 June 2016**

The Committee met at the Natural History Museum, London

Members present:

Nicola Blackwood, in the Chair

Victoria Borwick

Carol Monaghan

***1. Regenerative medicine***

*Ordered*, That the written evidence relating to Regenerative medicine submitted by Research Councils UK be reported to the House for publication on the internet.

***2. Robotics and artificial intelligence***

*Ordered*, That the written evidence relating to Robotics and artificial intelligence submitted by Digital Wisdom Institute be reported to the House for publication on the internet.

***3. Smart meters***

*Ordered*, That the written evidence relating to Smart meters submitted by Department for Energy and Climate Change be reported to the House for publication on the internet.

***4. Higher Education and Research Bill***

*Ordered*, That the letter to Jo Johnson MP, Minister of State for Universities and Science, relating to the Higher Education and Research Bill be reported to the House for publication on the internet.

***5. Science communication***

*Ordered*, That the written evidence relating to Science communication submitted by Dr James Redfern, Dr Sam Illingworth and Professor Joanna Verran, Manchester Metropolitan University, be reported to the House for publication on the internet.

David Shukman, Science Editor, BBC News, Deborah Cohen, Head of Radio Science, BBC, and Fiona Fox, Chief Executive, Science Media Centre, gave oral evidence.

Professor Louise Archer, Professor of Sociology of Education and Chair of the Centre for Research in Education in Science, Technology and Mathematics, King's College London, Imran

Khan, Chief Executive, British Science Association, and Katherine Mathieson, Director of Programmes, British Science Association, gave oral evidence.

Dr Matthew Hickman, Programme Manager, Informal Science Learning, Wellcome Trust, and Dr Stephen Webster, Director, Science Communication Unit, Imperial College London, gave oral evidence.

[Adjourned till Tuesday 28 June at 2.00pm.]

## **Tuesday 28 June 2016**

Members present:

Nicola Blackwood, in the Chair

Victoria Borwick  
Jim Dowd  
Chris Green  
Dr Tania Mathias

Carol Monaghan  
Graham Stringer  
Derek Thomas

### ***1. Graphene***

*Ordered*, That the written evidence relating to Graphene submitted by The University of Manchester be reported to the House for publication on the internet.

### ***2. Science communication***

*Ordered*, That the following written evidence relating to the Science communication be reported to the House for publication on the internet:

Jeremy Stevenson  
Margaret Bevan  
Hilary Ashton  
Declan Baharini  
Paul O'Connor  
Jean Martin  
Philip Bradfield

### ***3. Science in emergencies: chemical, biological, radiological or nuclear incidents***

*Ordered*, That the written evidence relating to Science in emergencies: chemical, biological, radiological or nuclear incidents submitted by Staffordshire Civil Contingencies Unit be reported to the House for publication on the internet.



#### ***4. Science after the EU referendum result***

*Ordered*, That the letter to the Chancellor of the Exchequer, relating to protecting and promoting science after the EU referendum result be reported to the House for publication on the internet.

#### ***5. Regenerative medicine***

The Committee considered this matter.

*Ordered*, That Professor Sian Harding be appointed Specialist Adviser to assist the Committee in matters related to Regenerative medicine. (*For details of declarations of interests, see Appendix.*)

#### ***6. Managing intellectual property and technology transfer***

*Resolved*, That the Committee inquire into Managing intellectual property and technology transfer.

#### ***7. Leaving the EU: implications and opportunities for science and research***

*Resolved*, That the Committee inquire into Leaving the EU: implications and opportunities for science and research.

#### ***8. Robotics and Artificial Intelligence***

Angus Knowles-Cutler, Vice Chairman and London Office Senior Partner, Deloitte, Professor Rose Luckin, Chair of Learning with Digital Technologies, UCL Institute of Education, University College London, Paul Mason, Director of Emerging and Enabling Technologies, Innovate UK, and Dr Michael Osborne, Dyson Associate Professor in Machine Learning, University of Oxford, gave oral evidence.

Dave Coplin, Chief Envisioning Officer, Microsoft, and Mike Wilson, General Industry Sales Manager – ABB Robotics, gave oral evidence.

[Adjourned till Tuesday 5 July at 2.00pm.]

**Tuesday 5 July 2016**

Members present:

Nicola Blackwood, in the Chair

Victoria Borwick  
Jim Dowd  
Chris Green  
Dr Tania Mathias

Carol Monaghan  
Graham Stringer  
Derek Thomas

***1. Forensic Science Strategy***

*Ordered*, That the following written evidence relating to the Forensic Science Strategy be reported to the House for publication on the internet:

Home Office  
Minister for Policing, Fire and Criminal Justice and Victims

***2. Robotics and artificial intelligence***

*Ordered*, That the written evidence relating to Robotics and Artificial Intelligence submitted by Professor Rose Luckin be reported to the House for publication on the internet.

***3. Science communication***

*Ordered*, That the following written evidence relating to Science communication be reported to the House for publication on the internet:

Hannah Graham  
Dr David Whitehouse  
Dr Kenneth Evans  
Sarah Hurson

***4. Science in emergencies: chemical, biological, radiological or nuclear incidents***

*Ordered*, That the written evidence relating to Science in emergencies: chemical, biological, radiological or nuclear incidents submitted by Roderick Pond be reported to the House for publication on the internet.

***5. Members' attendance statistics***

The Committee considered this matter.

## ***6. Leaving the EU: implications and opportunities for science and research***

*Ordered*, That the following written evidence relating to Leaving the EU: implications and opportunities for science and research be reported to the House for publication on the internet:

Dr Magnus Johnson  
Marcio Aquino  
Emeritus Professor Colin Ockleford  
Dr Helen Stagg  
European Social Survey  
Professor Carlton Baugh

Dr Sarah Main, Director, Campaign for Science and Engineering, Professor Angus Dalglish, Scientists for Britain, and Professor Sir Ian Diamond, Chair of the Universities UK Research Policy Network, gave oral evidence.

Professor Ottoline Leyser, Chair, Royal Society Science Policy Advisory Group, Stuart Pritchard, EU Affairs Manager, Wellcome Trust, and Professor Martin Vetterli, President, National Research Council of the Swiss National Science Foundation, gave oral evidence.

[Adjourned till Wednesday 6 July at 9.50 am.]

### **Wednesday 6 July 2016**

Members present:

Nicola Blackwood, in the Chair

Victoria Borwick  
Chris Green

Dr Tania Mathias  
Graham Stringer

## ***1. Leaving the EU: implications and opportunities for science and research***

*Ordered*, That the following written evidence relating to Leaving the EU: implications and opportunities for science and research be reported to the House for publication on the internet:

University of Exeter  
Professor Julian Hiscox  
Professor Jeremy Baumberg

## ***2. Forensic Science Strategy***

Professor Bernard Silverman, Chief Scientific Adviser, Home Office, and Dr Julie Maxton, Executive Director, Royal Society, gave oral evidence.

Rt Hon Mike Penning MP, Minister for Policing, Fire and Criminal Justice and Victims, gave oral evidence.

[Adjourned till Wednesday 13 July at 9.15 am.]

### **Wednesday 13 July 2016**

Members present:

Nicola Blackwood, in the Chair

Victoria Borwick  
Chris Green  
Dr Tania Mathias

Carol Monaghan  
Graham Stringer  
Derek Thomas

#### ***1. Robotics and artificial intelligence***

*Ordered*, That the written evidence relating to Robotics and artificial intelligence submitted by Dr Owen Cotton-Barratt, University of Oxford, be reported to the House for publication on the internet.

#### ***2. Science in emergencies: chemical, biological, radiological or nuclear incidents***

*Ordered*, That the written evidence relating to Science in emergencies: chemical, biological, radiological or nuclear incidents submitted by The Met Office be reported to the House for publication on the internet.

#### ***3. Leaving the EU: implications and opportunities for science and research***

*Ordered*, That the following written evidence relating to Leaving the EU: implications and opportunities for science and research be reported to the House for publication on the internet:

Professor Stuart West  
Professor Tim Palmer  
Cardiff Metropolitan University  
Professor Anthony Fox  
Dr Rohit K Dasgupta  
Professor John Quinton  
Professor Jernej Ule

Professor John Hardy  
Dr Stephen Fleming  
Frank Krauss  
Institute of Occupational Medicine  
Professor Theodore Shepherd  
Dr Scott McGrane  
The Open University  
UCL Institute of Neurology Postdoc Committee  
Professor David Dobson  
Eric Deeson  
Mr Leonardo Buizza  
Dr Diego Gallardo  
Professor David Schmool  
Prof. Emeritus Giovanni Ciccotti  
Institute of Physics  
Mr James Bernardi  
Granta Design Ltd  
Royal Meteorological Society  
SOAS, University of London  
Professor Jonathan Bamber  
University of Cambridge  
British Association for Psychopharmacology  
UKAEA  
Professor Roger Barker  
Dr Nihal Sinnadurai  
BIVDA  
Society for Endocrinology  
Dr John Steedman  
TalaveraScience  
Professor Robin Shattock  
Dr Mark Roberts  
Professor Toby Bruce  
Dr Charlotte Jackson  
Ricardo plc  
Professor Miles Padgett  
UCL  
Dr Brian Fawcett  
Professor Martin Vetterli

Kevin Baughan, Chief Development Officer, Innovate UK, and Professor Philip Nelson, Chair, Research Councils UK, gave oral evidence.

Jo Johnson MP, Minister of State for Universities and Science Minister, and David Wilson, Head of European Knowledge and Innovation, Department for Business, Innovation and Skills, gave oral evidence.

[Adjourned till Tuesday 19 July at 2.00pm.]

**Tuesday 19 July 2016**

Members present:

Victoria Borwick	Graham Stringer
Jim Dowd	Derek Thomas
Chris Green	Matt Warman
Dr Tania Mathias	

Nicola Blackwood having resigned as Chair,<sup>1</sup> Dr Tania Mathias was called to the chair for the meeting and for all further meetings until a new chair is elected by the House.

### ***1. Future programme***

The Committee considered this matter.

### ***2. Graphene***

*Ordered*, That the written evidence relating to Graphene submitted by Manchester Graphene Technologies Ltd be reported to the House for publication on the internet.

### ***3. Leaving the EU: implications and opportunities for science and research***

*Ordered*, That the following written evidence relating to Leaving the EU: implications and opportunities for science and research be reported to the House for publication on the internet:

Professor Dave Fernig, University of Liverpool

Alexander Lenz, Institute for Particle Physics Phenomenology

Institute of Physics

University of Bristol

MillionPlus

Thomas Eagle

Professor Richard Wakeford

Dr Mark Buckley, Professor John Duncan, FRS, Dr Kristine Krug, Dr Anna Mitchell, Professor Andrew Parker, and Professor Matthew Rushworth

Professor Philip Allport

Dr Hywel Owen

Moshe Kinn

John Innes Centre

Institute of Acoustics

Medical Research Council Laboratory of Molecular Biology, Cambridge

Joe Gorman

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<sup>1</sup> See Votes and Proceedings, 19 July 2016

Royal Society of Chemistry  
Yirgalem Negash Tesfaye  
University of Sussex  
Xi Hu  
Fera Science Ltd  
The Royal Society of Edinburgh  
AIRTO Ltd  
Professor Heiko Balzter  
Plymouth Marine Laboratory  
Icon, the Institute of Conservation  
ApconiX  
Medical Schools Council  
Scientists for Britain  
Sheffield Hallam University  
Scottish Universities Physics Alliance

#### ***4. Robotics and artificial intelligence***

*Ordered*, That the written evidence relating to Robotics and artificial intelligence submitted by Innovate UK be reported to the House for publication on the internet.

#### ***5. Smart meters***

*Ordered*, That the written evidence relating to Smart meters submitted by Hugh Smeaton be reported to the House for publication on the internet.

#### ***6. EU regulation of the life sciences***

*Ordered*, That, subject to the discretion of Dr Tania Mathias, any written evidence relating to the Committee's EU regulation of the life sciences inquiry received from the Government during the summer adjournment shall be reported to the House for publication on the internet.

#### ***7. Regenerative medicine***

Victoria Borwick declared an interest, in that she had taken part in a shadowing initiative with Prof Sian Harding of Imperial College London, a specialist adviser on regenerative medicine.

Professor Paul Riley, British Heart Foundation Professor of Regenerative Medicine, University of Oxford, Professor Stuart Forbes, Professor of Transplantation and Regenerative Medicine, University of Edinburgh, and Professor Peter Andrews, Professor of Biomedical Science, University of Sheffield, gave oral evidence.

Dr Rob Buckle, Director of UK Regenerative Medicine Platform, Research Councils UK, Professor Jeremy Pearson, Associate Medical Director, British Heart Foundation, Professor Neil Hanley, Professor of Medicine, University of Manchester, Professor Anthony Hollander, Head of



Institute of Integrative Biology, and Professor of Stem Cell Biology, University of Liverpool, gave oral evidence.

[Adjourned till Wednesday 7 September at 1.30pm.

### Wednesday 7 September 2016

Members present:

Victoria Borwick	Carol Monaghan
Stella Creasy	Graham Stringer
Jim Dowd	Derek Thomas
Chris Green	Matt Warman
Dr Tania Mathias	

Dr Tania Mathias took the Chair, in accordance with the Resolution of the Committee of 19 July 2016.

#### ***1. Forensic Science Strategy***

*Ordered*, That the written evidence relating to the Forensic Science Strategy submitted by the Minister for Policing, Fire and Criminal Justice and Victims be reported to the House for publication on the internet.

#### ***2. Leaving the EU: implications and opportunities for science and research***

*Ordered*, That the following written evidence relating to Leaving the EU: implications and opportunities for science and research be reported to the House for publication on the internet:

1640 UK-Based Early Career Researchers  
Academy of Medical Sciences (two submissions)  
ADS Group  
Aerospace Technology Institute  
Agricultural Biotechnology Council  
Airbus Group  
Alzheimer's Research UK  
Anna Freud National Centre for Children and Families  
Anneliese Dodds MEP and Clare Moody MEP  
AsSIST-UK  
Association of Clinical Research Organizations  
Babraham Institute (two submissions)  
Birkbeck, University of London  
Birmingham City University  
Breast Cancer Now  
British Ceramic Confederation  
British Council

British Geotechnical Association  
British Heart Foundation  
British Library  
British Nuclear Medicine Society  
British Pharmacological Society  
British Science Association  
British Society for Immunology  
British Society of Genetic Medicine  
British Toxicology Society  
Brunel University London  
BSPB  
BT  
Campaign for Science and Engineering  
Cancer Research UK  
Canterbury Christ Church University  
Cardiff University  
CBI  
Centre for Computing and Social Responsibility, De Montfort University  
Centre for Process Innovation  
Challenger Society for Marine Science  
Chartered Institute of Ecology and Environmental Management  
Chris Illingworth  
Council for Mathematical Sciences  
Council of Professors and Heads of Computing and UK Computing Research Committee  
Cranfield University  
Department for Business, Energy & Industrial Strategy  
Department of Plant Sciences, University of Cambridge  
Dept of Physics & Astronomy, University of Sheffield  
Digital Catapult  
Dr Adam Miles Lewis  
Dr David Rydeheard  
Dr Gillian Harrison  
Dr James Briscoe  
Dr Julian Downward  
Dr Michael Head  
ELIXIR  
EMBL-European Bioinformatics Institute  
Engineering Professors' Council  
European Space Agency  
Europlanet 2020 Research Infrastructure  
Francis Crick Institute  
Goldsmiths, University of London  
Great Ormond Street Hospital  
GuildHE  
Heads of University Centres of Biomedical Sciences  
HEFCE  
Hewlett Packard Enterprise

HVM Catapult  
IMPACTT, Swansea University  
Institute of Chartered Foresters  
Institute of Physics and Engineering in Medicine  
Institution of Environmental Sciences  
John Wiley & Sons  
Keele University  
King's College London  
Knowledge Transfer Network  
Lancaster University  
Leeds Beckett University  
LGC  
London School of Hygiene & Tropical Medicine  
London South Bank University  
Loughborough University  
Manchester City Council  
Manchester Institute of Innovation Research  
Marine Biological Association  
Materials Processing Institute  
Michelle Peckham  
Mineral Products Association  
Mr Ian Byrne  
MRC Clinical Sciences Centre  
MRC Integrative Epidemiology Unit at the University of Bristol  
MRC Laboratory for Molecular Cell Biology  
Mrs Nimisha Kotecha  
Muscular Dystrophy UK  
National Centre for Atmospheric Science  
National Farmers' Union  
National Institute for Health and Care Excellence (NICE)  
National Institutes of Bioscience  
National Oceanography Centre  
Natural History Museum  
Newcastle University  
NHS European Office  
Nicola Capstaff  
NOAH Ltd.  
Open Data Institute  
Political Studies Association  
Post-doctoral Researchers in the Division of Biosciences at University College London  
Professor Alexander Orlov  
Professor of Computational Biology Nicholas Luscombe  
Professor Peter Weinberg  
Professor Richard Wakeford  
Professor Sebastian Oliver  
Prospect  
Queen Mary University of London

Research Councils UK  
Robert Gordon University  
Rolls-Royce plc  
Rothamsted Research  
Royal Academy of Engineering  
Royal Astronomical Society  
Royal College of Physicians  
Royal Irish Academy  
Royal Pharmaceutical Society  
Royal Society of Biology  
Russell Group  
Safran  
Satellite Applications Catapult  
Science Board, Science and Technology Facilities Council  
Science Council  
Scienceogram UK  
Scientists for EU  
Sciovis Ltd  
Shelford Group Medical Directors  
Society for the Environment  
Society of Chemical Industry  
Space Insight Ltd  
Spirent Communications plc  
STFC Solar System Advisory Panel  
The Association of Medical Research Charities  
The Association of the British Pharmaceutical Industry  
The British Academy  
The Geological Society  
The Health and Europe Centre  
The Institute of Cancer Research, London  
The Postdocs of Cambridge Society (PdOC)  
The Royal Society  
The Systematics Association  
The UK 850 MHz Solid-State Nuclear Magnetic Resonance Facility  
The University of Sheffield  
Transport Systems Catapult  
UCL  
UCL Hazard Centre  
UCL Knowledge Lab  
UK Deans of Science  
UK Hydrogen and Fuel Cell Association  
UKAEA  
Ulster University  
Universities UK  
University of Bristol  
University of East Anglia  
University of Edinburgh

University of Exeter  
University of Hull  
University of Leeds  
University of Leicester  
University of Liverpool  
University of Manchester  
University of Nottingham  
University of Oxford  
University of Portsmouth  
University of Southampton  
University of the Arts London  
University of Winchester  
University of Wolverhampton  
Wellcome Trust  
Wellcome Trust Sanger Institute  
WISE Campaign  
World Conservation Monitoring Centre

### ***3. Robotics and artificial intelligence***

*Ordered*, That the written evidence relating to Robotics and artificial intelligence submitted by the Minister for Universities, Science, Research and Innovation, be reported to the House for publication on the internet.

### ***4. Smart meters***

*Ordered*, That the written evidence relating to Smart meters submitted by Northern Powergrid be reported to the House for publication on the internet.

### ***5. Science communication***

*Ordered*, That the written evidence relating to Science communication submitted by Electivecesarean.com be reported to the House for publication on the internet.

### ***6. Future programme and working methods***

The Committee considered this matter.

*Resolved*, That the Committee inquire into the Role and priorities of the UKRI interim chair.

### ***7. Science communication***

Dr Seirian Sumner, and Dr Nathalie Pettoelli, Co-founders, Soapbox Science, Dr Penny Fidler, CEO, UK Association for Science and Discovery Centres, and Tracey Brown, Director, Sense about science, gave oral evidence.

Matt Goode, Director of Communications and Public Engagement, Research Councils UK, and Paul Manners, Director, National Coordinating Centre for Public Engagement and Associate Professor in Public Engagement at University of West England, gave oral evidence.

[Adjourned till Tuesday 13 September at 2.00pm.]

**Tuesday 13 September 2016**

Members present:

Victoria Borwick  
Chris Green  
Dr Tania Mathias

Carol Monaghan  
Matt Warman

Dr Tania Mathias took the Chair, in accordance with the Resolution of the Committee of 19 July 2016.

***1. Leaving the EU: implications and opportunities for science and research***

*Ordered*, That the following written evidence relating to Leaving the EU: implications and opportunities for science and research be reported to the House for publication on the internet:

Imperial College London  
Seqiris  
Royal College of Psychiatrists

***2. Smart meters***

*Ordered*, That the written evidence relating to Smart meters submitted by British Gas be reported to the House for publication on the internet.

***3. Science communication***

*Ordered*, That the following written evidence relating to Science communication be reported to the House for publication on the internet.

Dan Waddell  
Prof Wendy Purcell  
Science Media Centre

***4. Evidence check***

*Ordered*, That the letter to the Cabinet Secretary relating to evidence check, and his reply, be reported to the House for publication on the internet.

***5. Forensic Science Strategy***

Draft Report (*Forensic science strategy*) proposed by the Chair, brought up and read.

*The draft report was agreed to; the Formal Minutes relating to the consideration of the Report are published in the Fourth Report of the Committee, HC 501.*

## **6. Robotics and artificial intelligence**

Draft Report (*Robotics and artificial intelligence*) proposed by the Chair, brought up and read.

*The draft report was agreed to; the Formal Minutes relating to the consideration of the Report are published in the Fifth Report of the Committee, HC 145.*

## **7. Science in emergencies: chemical, biological, radiological or nuclear incidents**

Simon Earwicker, Division Head, and Dr Cerys Rees, Fellow, Chemical, Biological and Radiological Sciences Division, DSTL, Gary Butler, Assurance Director, AWE, and Dr Nick Gent, Deputy Head, Emergency Response Department, Public Health England, gave oral evidence.

Ben Wallace MP, Minister for Security, Home Office, and Paul McCloghrie, Deputy Director, National Risks and Infrastructure, Civil Contingencies Secretariat, gave oral evidence.

## **8. Graphene**

Baroness Neville-Rolfe, Minister of State for Intellectual Property, and Dr Sharon Ellis, Director of Business Innovation, Department for Business, Energy and Industrial Strategy, and Paul Mason, Director, Emerging and Enabling Technologies, Innovate UK, gave oral evidence

[Adjourned till Wednesday 14 September at 10.00am.

## **Wednesday 14 September 2016**

Members present:

Victoria Borwick  
Chris Green  
Dr Tania Mathias

Carol Monaghan  
Graham Stringer  
Matt Warman

Dr Tania Mathias took the Chair, in accordance with the Resolution of the Committee of 19 July 2016.

## **Smart meters**

Draft Report (*Evidence check: Smart metering of electricity and gas*) proposed by the Chair, brought up and read.

*The draft report was agreed to; the Formal Minutes relating to the consideration of the Report are published in the Sixth Report of the Committee, HC 161.*



[Adjourned till Wednesday 12 October at 3.45pm.]

**Wednesday 12 October 2016**

Members present:

Victoria Borwick  
Jim Dowd  
Chris Green  
Dr Tania Mathias

Carol Monaghan  
Derek Thomas  
Matt Warman

Dr Tania Mathias took the Chair, in accordance with the Resolution of the Committee of 19 July 2016.

### ***1. Graphene***

*Ordered*, That the following written evidence relating to Graphene be reported to the House for publication on the internet:

Department for Business, Energy and Industrial Strategy  
Innovate UK

### ***2. Leaving the EU: implications and opportunities for science and research***

*Ordered*, That the following written evidence relating to Leaving the EU: implications and opportunities for science and research be reported to the House for publication on the internet:

The Publishers Association  
ARMA UK Ltd  
Dr Louise Porter  
HM Treasury

### ***3. Managing intellectual property and technology transfer***

The Committee considered this matter.

*Ordered*, That the following written evidence relating to Managing intellectual property and technology transfer be reported to the House for publication on the internet.

Academy of Medical Sciences  
BioIndustry Association  
Brian McCann, Tim Harper, and Alex Stewart  
Cambridge Enterprise  
Cardiff University  
Cranfield University  
Department for Business, Energy and Industrial Strategy  
Dr Richard Worswick

Higher Education Funding Council (HEFCE)  
Imperial College London  
Imperial Innovations Group plc  
Innovate UK  
IN-PART  
Kingston University  
Mercia Technologies PLC  
National Centre for Universities and Business  
PraxisUnico  
Professor Trevor McMillan  
Research Councils UK  
Royal Academy of Engineering  
Russell Group  
Swansea University  
The Institute of Cancer Research, London  
The Royal Society  
The University of Birmingham  
The University of Sheffield  
Universities Allied for Essential Medicines  
Universities Scotland  
UniversitiesUK  
University College London  
University of Manchester  
University of Oxford  
Wellcome Trust

#### ***4. Role and priorities of UKRI interim chair***

*Ordered,* That the following written evidence relating to Role and priorities of the UKRI interim chair be reported to the House for publication on the internet.

Association of Medical Research Charities  
Department for Business, Energy and Industrial Strategy  
GuildHE  
Institute of Physics  
Met Office  
MillionPlus  
Political Studies Association of the UK  
Royal Society of Chemistry  
Russell Group  
The London School of Economics and Political Science  
The Royal Society of Edinburgh  
The Royal Society, Royal Academy of Engineering, British Academy and The Academy of Medical Sciences  
UK academics engaged with Responsible Research and Innovation  
Universities Allied for Essential Medicines  
Universities Scotland

University Alliance  
University of Oxford

**5. Science communication**

*Ordered*, That the following written evidence relating to Science communication be reported to the House for publication on the internet.

Soapbox Science  
Miss Tessa Burrington  
Association of British Science Writers

**6. Science in emergencies: chemical, biological, radiological or nuclear incidents**

*Ordered*, That the following written evidence relating to Science communication be reported to the House for publication on the internet.

Keith Riley  
Defence Science and Technology Laboratory  
Atomic Weapons Establishment  
Home Office  
Public Health England

*Resolved*, That members of the Committee have leave to visit Glasgow in a representative capacity for the purposes of the Committee's inquiry into Science in emergencies: chemical, biological, radiological or nuclear incidents.

**7. Role and priorities of UKRI interim chair**

Sir John Kingman, Interim Chair, UK Research and Innovation, and Rebecca Endean, Director, Science and Research, Department of Business, Energy and Industrial Strategy, gave oral evidence.

[Adjourned till Wednesday 19 October at 1.30pm.]

**Wednesday 19 October 2016**

Members present:

Victoria Borwick  
Jim Dowd  
Chris Green

Dr Tania Mathias  
Derek Thomas

Dr Tania Mathias took the Chair, in accordance with the Resolution of the Committee of 19 July 2016.

***1. Science in emergencies: chemical, biological, radiological or nuclear incidents***

*Ordered*, That the written evidence related to Science in emergencies: chemical, biological, radiological or nuclear incidents submitted by Staffordshire Civil Contingencies Unit be reported to the House for publication on the internet.

***2. Leaving the EU: implications and opportunities for science and research***

The Committee considered this matter.

***3. Regenerative medicine***

Dr Ian Hudson, CEO, Medicines and Healthcare products Regulatory Agency, Professor Paul Whiting, MRC Regenerative Medicine Research Committee, Dr Sven Kili, Head of Gene Therapy Development, GlaxoSmithKline, and Michael Hunt, Chief Financial Officer, ReNeuron Group, gave oral evidence.

Ian Trenholm, CEO, NHS Blood & Transplant, Ian McCubbin, Medicines Manufacturing Industry Partnership and co-chair of the Advanced Therapy Manufacturing Taskforce, Keith Thompson, CEO, Cell & Gene Therapy Catapult, and Dr Ruth McKernan, CEO, Innovate UK, gave oral evidence.

[Adjourned till Wednesday 26 October at 1.30pm.]

**Wednesday 26 October 2016**

Members present:

Stephen Metcalfe, in the Chair<sup>2</sup>

Victoria Borwick

Carol Monaghan

Jim Dowd

Derek Thomas

Chris Green

Matt Warman

Dr Tania Mathias

***1. Declaration of interests***

Stephen Metcalfe disclosed his interests, pursuant to the resolution of the House of 13 July 1992. (See Appendix)

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<sup>2</sup> Elected by the House (Standing Order No. 122B) 19 October 2016, see Votes and Proceedings 19 October 2016.

## ***2. Committee working methods***

The Committee considered this matter.

*Resolved*, That the Committee visit the Alan Turing Institute as part of the Committee's awayday event.

## ***3. Leaving the EU: implications and opportunities for science and research***

*Ordered*, That the following written evidence relating to Leaving the EU: implications and opportunities for science and research be reported to the House for publication on the internet:

Carlos Moedas, European Commissioner for Research, Science and Innovation  
Professor Ben Bollig

## ***4. Managing intellectual property and technology transfer***

The Committee considered this matter.

## ***5. Leaving the EU: implications and opportunities for science and research***

Jo Johnson, Minister for Universities, Science, Research and Innovation, Mr Robin Walker, Parliamentary Under-Secretary of State for Exiting the European Union, and Gareth Davies, Director General, Business and Science, Department for Business, Energy and Industrial Strategy, gave oral evidence.

[Adjourned till Wednesday 2<sup>nd</sup> November at 1.30pm.]

## **Wednesday 2 November 2016**

Members present:

Stephen Metcalfe, in the Chair

Victoria Borwick  
Jim Dowd  
Dr Tania Mathias

Carol Monaghan  
Graham Stringer  
Matt Warman

## ***1. Leaving the EU: implications and opportunities for science and research***

*Ordered*, That the letter from Ministers, Jo Johnson MP and Robin Walker MP, be reported to the House for publication on the internet.

The Committee considered this matter.

## ***2. Robotics and artificial intelligence***

*Ordered*, That the letter from Sir Alan Wilson, Chief Executive, Alan Turing Institute, be reported to the House for publication on the internet.

## ***3. Committee working methods***

The Committee considered this matter.

## ***4. Managing intellectual property and technology transfer***

Dr Tony Raven, Chief Executive, Cambridge Enterprise, Nick Sturge, Director, Engine Shed, and Dr Claire Brady, Head of Technology Transfer, Edinburgh Research and Innovation, gave oral evidence,

Dr Phil Claire, Chair, Advocacy Committee, PraxisUnico, Dr Rosa Fernandez, Research Director, National Centre for Universities and Business, and Dr Toby Basey-Fisher, Chief Executive, Eva Diagnostics, gave oral evidence.

[Adjourned till Wednesday 16<sup>th</sup> November at 1.30pm.

*Wednesday 8 November 2016*

*The Chair, Victoria Borwick, Dr Tania Mathias, Carol Monaghan, Graham Stringer and Matt Warman visited the Alan Turing Institute in accordance with the Committee's decision of 26 October 2016.*

## **Wednesday 16 November 2016**

Members present:

Stephen Metcalfe, in the Chair

Victoria Borwick

Jim Dowd

Chris Green

Dr Tania Mathias

Carol Monaghan

Derek Thomas

Matt Warman

## ***1. Managing intellectual property and technology transfer***

*Ordered*, That the written evidence relating to Managing Intellectual Property and Technology Transfer submitted by Manchester University be reported to the House for publication on the internet.

## ***2. Leaving the EU: implications and opportunities for science and research***

Draft Report (*Leaving the EU: implications and opportunities for science and research*) proposed by the Chair, brought up and read.

*The draft report was agreed to; the Formal Minutes relating to the consideration of the Report are published in the Seventh Report of the Committee, HC 502.*

### **3. Regenerative medicine**

The Committee considered this matter.

### **4. Committee working methods**

The Committee considered this matter.

*Resolved*, That the Committee inquire into Antimicrobial resistance.

### **5. Science communication**

*Ordered*, That the written evidence relating to Science communication submitted by Ros Herman be reported to the House for publication on the internet

Dr Melanie Smallman, Teaching and Research Associate, Department of Science and Technology Studies, University College London, and Professor Robert Evans, Director of Teaching and Learning, School of Social Sciences, Cardiff University, gave oral evidence,

Jo Johnson MP, Minister for Universities, Science, Research and Innovation, and Sir Mark Walport, Government Chief Scientific Advisor, Government Office for Science, gave oral evidence.

[Adjourned till Tuesday 22<sup>nd</sup> November at 2.00pm.]

**Tuesday 22 November 2016**

Members present:

Stephen Metcalfe, in the Chair

Victoria Borwick  
Chris Green

Dr Tania Mathias  
Graham Stringer

### **1. Science communication**

*Ordered*, That the written evidence relating to Science communication submitted by Dr Tasmin Edwards be reported to the House for publication on the internet.



## ***2. Satellites and space***

Draft Special Report (*Satellites and space: Government Response to the Committee's Third Report*), proposed by the Chair, brought up, read the first and second time, and agreed to.

The Government response to the Third Report of Session 2016–17 was appended to the Report.

*Resolved*, That the Report be the First Special Report of the Committee to the House.

*Ordered*, That the Chair make the Report to the House.

## ***3. Future programme***

*Resolved*, That the Committee inquire into My Science Inquiry.

*Resolved*, That the Committee inquire into Closing the STEM skills gap.

*Resolved*, That the Committee inquire into Genomics and genome-editing.

## ***4. Visits***

*Resolved*, That the Committee visit UCL Institute of Ophthalmology, London, and UCL Ear Institute, London.

## ***5. Managing intellectual property and technology transfer***

Dr Will West, Executive Chairman, CellCentric and Member, BioIndustry Association Board, Felicity Burch, Head of Innovation and Digital, CBI, and Richard North, Head of IP Protection Licensing and Control, Rolls-Royce, gave oral evidence.

Anne Glover, Co-founder and Chief Executive, Amadeus Capital Partners Ltd, Chris Mairs CBE, Venture Partner, Entrepreneur First, and Mike Conroy, Executive Director, Corporate and Commercial Banking, British Bankers' Association, gave oral evidence.

[Adjourned till Wednesday 30 November at 9.00am.]

*Tuesday 29 November 2016*

*The Chair and Carol Monaghan visited UCL Institute of Ophthalmology in connection with the Committee's decision of 22 November 2016.*

**Wednesday 30 November 2016**

Members present:

Stephen Metcalfe, in the Chair

Victoria Borwick  
Jim Dowd  
Chris Green

Carol Monaghan  
Graham Stringer  
Derek Thomas

### ***1. Science communication***

*Ordered*, That the written evidence relating to Science communication submitted by Connie St Louis be reported to the House for publication on the internet.

### ***2. Forensic Science Strategy***

Draft Special Report (*Forensic Science Strategy: Government Response to the Committee's Fourth Report*), proposed by the Chair, brought up, read the first and second time, and agreed to.

The Government response to the Fourth Report of Session 2016–17 was appended to the Report.

*Resolved*, That the Report be the Second Special Report of the Committee to the House.

*Ordered*, That the Chair make the Report to the House.

### ***3. Smart meters***

The committee considered this matter.

Draft Special Report (Evidence check: *Smart metering of electricity and gas: Government Response to the Committee's Sixth Report*), proposed by the Chair, brought up, read the first and second time, and agreed to.

The Government response to the Sixth Report of Session 2016–17 was appended to the Report.

*Resolved*, That the Report be the Third Special Report of the Committee to the House.

*Ordered*, That the Chair make the Report to the House.

### ***4. Science in emergencies: chemical, biological, radiological or nuclear incidents***

The committee considered this matter.

### ***5. Future programme***

*Resolved*, That the Committee inquire into Ocean acidification

**6. *Leaving the EU: implications for science and research***

The committee considered this matter.

**7. *Antimicrobial resistance***

Lord O'Neill of Gatley, Chairman, Review into Antimicrobial Resistance, Helen Shirley-Quirk, Director of Emergency Preparedness and Health Protection Policy, Department of Health, Professor Paul Cosford, Director of Health Protection and Medical Director, Public Health England, and Simon Hall, Veterinary Director, Animal & Plant Health Agency, gave oral evidence.

[Adjourned till Wednesday 7 December at 9.00am.]

**Wednesday 7 December 2016**

Members present:

Stephen Metcalfe, in the Chair

Chris Green  
Carol Monaghan

Dr Tania Mathias  
Derek Thomas

***1. My science inquiry***

*Ordered*, That the following written evidence relating to My science inquiry be reported to the House for publication on the internet:

Alice Gray  
Tony Osborne  
Bikal  
Dr Duncan Astle

***2. Role and priorities of UK Research and Innovation interim chair***

Draft Report (*Setting up UK Research & Innovation*) proposed by the Chair, brought up and read.

*The draft report was agreed to; the Formal Minutes relating to the consideration of the Report are published in the Eighth Report of the Committee, HC 671.*

***3. Leaving the EU: implications for science and research***

The committee considered this matter.

***4. Regenerative medicine***

*Ordered*, That the written evidence relating to Regenerative medicine submitted by Anthony Nolan be reported to the House for publication on the internet.

Dr Jonathan Fielden, Director for Specialised Services, NHS England, Dr James Palmer, Clinical Director for Specialised Commissioning, NHS England, and Dr Nick Crabb, Programme Director for Scientific Affairs, National Institute for Health and Care Excellence, gave oral evidence.

Professor Giovanna Lombardi, Professor of Human Transport Immunology, Kings College London, Professor Amit Nathwani, Professor of Haematology, University College London, and Dr Anthony Mathur, Professor of Cardiology, Queen Mary University School of Medicine and Dentistry, gave oral evidence.

Lord Prior of Brampton, Parliamentary Under Secretary of State for Health, gave oral evidence.

[Adjourned till Wednesday 14 December at 9.00am.

*Tuesday 13 December 2016*

*The Chair visited the UCL Ear Institute in accordance with the Committee's decision of 22 November 2016.*

**Wednesday 14 December 2016**

Members present:

Stephen Metcalfe, in the Chair

Victoria Borwick  
Jim Dowd  
Dr Tania Mathias

Graham Stringer  
Derek Thomas

***1. My science inquiry***

*Ordered*, That the following written evidence relating to My science inquiry be reported to the House for publication on the internet:

Dr Kylie Baldwin  
Dr Joe Grove  
Andrew Mcshane  
Ms Sophia Collins  
Brightwake Ltd (three submissions)  
Simon Ball  
SKIL–Stanford Knowledge Integration Lab.  
Grantham Research Institute on Climate Change and the Environment  
Mr Dan Wrench

***2. Managing intellectual property and technology transfer***

*Ordered*, That the following written evidence relating to Managing intellectual property and technology transfer be reported to the House for publication on the internet:

University Alliance  
Research Councils UK

***3. Research integrity***

*Resolved*, That the Committee inquire into Research integrity.

#### ***4. Robotics and artificial intelligence***

The Committee considered this matter.

#### ***5. Genomics and genome-editing***

*Resolved*, That members of the Committee have leave to visit Rothamsted Research in a representative capacity for the purposes of the Committee's inquiry into Genomics and genome editing.

#### ***6. Future programme***

The committee considered this matter.

#### ***7. Managing intellectual property and technology transfer***

Mark Anderson, Managing Partner, Anderson Law, and Chairman, Intellectual Property Law Committee, Law Society of England and Wales, and Dr Daniel Nelki, Science to Health Lead, Wellcome Trust, gave oral evidence.

Professor Dame Anne Dowling, President, Royal Academy of Engineering, and Professor Trevor McMillan, Vice Chancellor, Keele University, gave oral evidence.

[Adjourned till Wednesday 11 January at 9.00am.

### **Wednesday 11 January 2017**

Members present:

Stephen Metcalfe, in the Chair

Victoria Borwick  
Jim Dowd  
Chris Green  
Dr Tania Mathias

Carol Monaghan  
Graham Stringer  
Derek Thomas  
Matt Warman

## ***1. My science inquiry***

The Committee considered this matter.

*Ordered*, That the following written evidence relating to My science inquiry be reported to the House for publication on the internet:

Isabel Webb  
Sensor100  
Osamu Ide  
Northamptonshire Biodiversity Records Centre  
University of Manchester  
People and Land Ltd  
HSAC  
Jack Neville  
Cardiff University Otter Project  
Samuel Lane  
Kent Investors Forum  
Professor Francis L Martin  
Tessa Burrington  
Nick Ross  
Professor Emeritus Peter Dobson  
AsSIST-UK  
Dr Jon Copley  
Tyndall Centre for Climate Change Research (two submissions)  
School of Health Sciences  
Dr Rachel Freeman  
Dr Tadeusz Jones  
Progress Educational Trust  
Dr Miles Parker  
Dr Keith Baker  
Scientists for Global Responsibility  
Centre for Parenting Culture Studies, University of Kent  
The Institute for Research in Schools  
Dr Bryn Jones  
CBMNet, University of Sheffield  
Professor Toby Bruce  
University of Leeds  
Sarah Jakes  
PHG Foundation (two submissions)  
British Pugwash Group (three submissions)  
Sense about Science  
Dr Conor Farrington  
Dr Nick Davis  
The Physiological Society  
UK Hydrogen and Fuel Cell Association  
HISL Limited

Babraham Institute  
David Hill  
Centre for SMART (Sustainable Manufacturing and Recycling Technologies)  
Babraham Institute  
British Ecological Society  
Imperial College London - Horizons students  
Association for Science and Discovery Centres (two submissions)  
Royal Society of Biology (two submissions)  
Neem Biotech  
UCL (two submissions)  
James Biscoe  
Internet Society UK England

## ***2. Regenerative medicine***

*Ordered*, That the written evidence relating to Regenerative medicine submitted by the Department of Health be reported to the House for publication on the internet.

## ***3. Robotics and artificial intelligence***

Draft Special Report (*Robotics and artificial intelligence: Government Response to the Committee's Fifth Report*), proposed by the Chair, brought up, read the first and second time, and agreed to.

The Government response to the Fifth Report of Session 2016–17 was appended to the Report.

*Resolved*, That the Report be the Fifth Special Report of the Committee to the House.

*Ordered*, That the Chair make the Report to the House.

## ***4. Digital skills crisis***

*Ordered*, That the correspondence with the Minister for digital and culture policy regarding the Digital Strategy be reported to the House for publication on the internet.

Draft Special Report (*Digital skills crisis: Government Response to the Committee's Second Report*), proposed by the Chair, brought up, read the first and second time, and agreed to.

The Government response to the Second Report of Session 2016–17 was appended to the Report.

*Resolved*, That the Report be the Fourth Special Report of the Committee to the House.

*Ordered*, That the Chair make the Report to the House.



## ***5. Closing the STEM skills gap***

The committee considered this matter.

## ***6. Future Programme***

The committee considered this matter.

## ***7. Managing intellectual property and technology transfer***

Jo Johnson MP, Minister of State for Universities, Science, Research and Innovation, BEIS, Jenny Dibden, Director of Science and Research, BEIS, and Sean Dennehey, Acting Chief Executive and Comptroller General, IPO, gave oral evidence.

[Adjourned till Wednesday 18 January at 9.30am.]

### **Wednesday 18 January 2017**

Members present:

Stephen Metcalfe, in the Chair

Victoria Borwick  
Jim Dowd  
Chris Green

Dr Tania Mathias  
Carol Monaghan  
Graham Stringer

## ***1. Closing the STEM skills gap***

*Ordered*, That the following written evidence relating to Closing the STEM skills gap be reported to the House for publication on the internet:

Academy of Medical Sciences

ADEPT

Arkwright Scholarships Trust

Aspire Achieve Advance

Association of Certified Chartered Accountants

Association of Medical Research Charities

Association of the British Pharmaceutical Industry

Aston University

Atkins Limited

BioImagingUK

BioIndustry Association

BP plc

British and Irish Association of Zoos and Aquariums

British Pharmacological Society

British Society for Immunology  
Carillion plc  
Centre for Real-World Learning  
Chartered Institute of Ecology and Environmental Management  
City of Bradford Metropolitan District Council  
CompTIA  
Deloitte  
Department for Education  
Dr Pallavi Amitava Banerjee  
Dr Paul Lewis  
EDF Energy  
Edge Foundation  
EEF, the manufacturers' organisation  
EngineeringUK  
Engineers Without Borders UK  
Field Studies Council  
Haringey Council  
Harris Academy Greenwich  
HEFCE  
Institute for Research in Schools  
Institute of Mathematics and its Applications  
Jacobs UK Limited  
Labster  
London South Bank University  
Makers Academy  
MEI  
Met Office  
Microsoft  
National Physical Laboratory  
Natural History Museum  
Nesta  
Pearson  
Polar Research and Policy Initiative  
Royal Academy of Engineering  
Royal Geographical Society (with IBG)  
Royal Society of Biology  
Royal Society of Chemistry  
RSPCA (Research Animals Department)  
Russell Group  
Salop Design & Engineering Ltd  
Science Industry Partnership  
Southampton City Council  
Staffordshire County Council  
The British Academy  
The Design and Technology Association  
The Gatsby Charitable Foundation  
The Nuffield Foundation

The Open University  
The Royal Statistical Society  
Twycross Zoo - East Midlands Zoological Society  
University of Leicester and National Space Centre/National Space Academy  
Wellcome Trust Sanger Institute  
Women in Manufacturing and Engineering  
Worshipful Company of Information Technologists  
Young Women's Trust  
Your Life

## ***2. Managing intellectual property and technology transfer***

*Ordered*, That the written evidence relating to Managing intellectual property and technology transfer submitted by Professor Trevor McMillan (Keele University) and Inventtory Limited be reported to the House for publication on the internet.

## ***3. Closing the STEM skills gap***

*Resolved*, That the Committee visit the Big Bang Fair, Birmingham, on 16 March 2017 in connection with its inquiry into Closing the STEM skills gap.

## ***4. Research integrity***

The committee considered this matter.

## ***5. Ocean acidification***

The committee considered this matter.

## ***6. Genomics and genome-editing***

The committee considered this matter.

[Adjourned till Wednesday 25 January at 9.00am.]

*Thursday 19 January 2017*

*The Chair and Carol Monaghan visited resilience and health officials of the Scottish Government and Health Protection Scotland, Glasgow, in accordance with the Committee's decision on 12 October 2016.*

**Wednesday 25 January 2017**

Members present:

Stephen Metcalfe, in the Chair

Chris Green  
Jim Dowd  
Dr Tania Mathias  
Carol Monaghan

Graham Stringer  
Derek Thomas  
Matt Warman

***1. Closing the STEM skills gap***

*Ordered*, That the following written evidence relating to Closing the STEM skills gap be reported to the House for publication on the internet:

Science Museum Group  
Association for Science and Discovery Centres  
TechUK  
CITB  
UK Interactive Entertainment  
AIRTO Ltd.  
Northumbria University  
Research Councils UK

***2. Managing intellectual property and technology transfer***

The Committee considered this matter.

***3. Science communication***

The Committee considered this matter.

***4. Regenerative medicine***

The Committee considered this matter.

***5. E-cigarettes***

*Resolved*, That the Committee inquire into e-cigarettes.

***6. Industrial Strategy: science, research and innovation***

*Resolved*, That the Committee inquire into the science, research and innovation aspects in the Industrial Strategy.

### ***7. Future programme***

The Committee considered this matter.

### ***8. Digital skills crisis***

*Ordered*, That the correspondence from the Minister for digital and culture policy regarding the Digital Strategy be reported to the House for publication on the internet.

### ***9. GO-Science Annual Report***

Sir Mark Walport, Government Chief Scientific Advisor, Government Office for Science, and Dr Rupert Lewis, Director, Government Office for Science, gave oral evidence.

[Adjourned till Wednesday 1 February at 9.00am.]

**Wednesday 1 February 2017**

Members present:

Stephen Metcalfe, in the Chair

Victoria Borwick  
Chris Green  
Dr Tania Mathias

Carol Monaghan  
Derek Thomas

***1. Closing the STEM skills gap***

*Ordered*, That the following written evidence relating to Closing the STEM skills gap be reported to the House for publication on the internet:

FDM Group  
Royal Society

***2. Managing intellectual property and technology transfer***

*Ordered*, That the written evidence relating to Managing intellectual property and technology transfer submitted by the Department for Business, Energy and Industrial Strategy be reported to the House for publication on the internet.

***3. Ocean acidification***

*Ordered*, That the following written evidence relating to Ocean acidification be reported to the House for publication on the internet:

British Antarctic Survey  
Defra  
Dr Klaus Kaiser  
Lady Iveta Kurpniece  
National Oceanography Centre  
Natural Environment Research Council  
Plymouth Marine Laboratory  
Professor Daniela Schmidt  
Professor Lloyd Peck  
Professor Toby Tyrrell  
SAHFOS  
The Geological Society  
Understanding Risk research group, Cardiff University  
University of Edinburgh School of Geosciences  
University of Exeter  
University of Plymouth  
University of Southampton

#### ***4. Genomics and genome-editing***

The Committee considered this matter.

*Ordered,* That the following written evidence relating to Genomics and genome-editing be reported to the House for publication on the internet:

23andMe

Advisory Committee on Releases to the Environment

Agricultural Biotechnology Council

Association of Genetic Nurses and Counsellors

Biosecure Ltd

BIVDA

Bob Goodall

British Medical Association

BSPB

Christian Action Research & Education

Christian Medical Fellowship

Compassion in World Farming

Cystic Fibrosis Trust

Department for Environment, Food and Rural Affairs

Desktop Genetics

Dr Felicity Boardman

Earlham Institute

Edinethics Ltd

Edward Perello

Ethics and Genetics

Extension Professor Paul Vincelli

GARNet

Genetic Alliance UK

Genetic Counsellor Registration Board

Genomics England

Health Research Authority

Human Fertilisation and Embryology Authority

Innogen Institute, University of Edinburgh

Leicester Precision Medicine Institute

NHS England

Nuffield Council on Bioethics

Office of the National Data Guardian for Health and Care

Pfizer

PHG Foundation

Premaitha Health

Professor David Jones

Professor Huw Jones

Professor Michael Bonsall, Dr Nina Alphey and Ms Charlotte Elves

Radoslav Bozov  
Research Councils UK  
Royal Society of Biology  
RSPCA  
Scottish Council on Human Bioethics  
Target Malaria  
The Academy of Medical Sciences  
The Association of the British Pharmaceutical Industry  
The Roslin Institute  
UK BioIndustry Association  
UK Synthetic Biology Leadership Council  
University Hospitals of Leicester  
Wellcome Trust Sanger Institute  
Wellcome Trust, Association of Medical Research Charities, and Cancer Research UK

### ***5. E-cigarettes***

The Committee considered this matter.

### ***6. Industrial Strategy: science, research and innovation***

The Committee considered this matter.

### ***7. My Science Inquiry***

Sandy Starr, Progress Educational Trust, gave oral evidence.

Bob Ward, Grantham Research Institute on Climate Change and the Environment, gave oral evidence.

Amanda Lyne, UK Hydrogen and Fuel Cell Association, gave oral evidence.

Dr Bryn Jones gave oral evidence.

Dr Stephanie Mathisen, Sense about Science, gave oral evidence.

Professor John Finney, British Pugwash Group, gave oral evidence.

Professor Shahin Rahimifard, Loughborough University, gave oral evidence.

Dr Michael Brand, Sensor100, gave oral evidence.

Professor Becky Parker, Institute for Research in Schools, gave oral evidence.

[Adjourned till Wednesday 8 February at 9.00am.]



**Wednesday 8 February 2017**

Members present:

Stephen Metcalfe, in the Chair

Victoria Borwick  
Chris Green  
Dr Tania Mathias

Carol Monaghan  
Graham Stringer  
Matt Warman

***1. My Science Inquiry***

The Committee considered this matter.

*Ordered*, That the written evidence relating to My Science Inquiry submitted by Bob Ward be reported to the House for publication on the internet.

***2. Science communication***

*Ordered*, That the written evidence relating to Science communication submitted by Stephen Foote be reported to the House for publication on the internet.

***3. Leaving the EU: Implications and opportunities for science and research***

The Committee considered this matter.

*Ordered*, That the correspondence from Robin Walker MP regarding the appointment of a Chief Scientific Adviser to the Department for Exiting the EU be reported to the House for publication on the internet.

Draft Special Report (*Leaving the EU: Implications and opportunities for science and research: Government Response to the Committee's Seventh Report*), proposed by the Chair, brought up, read the first and second time, and agreed to.

The Government response to the Seventh Report of Session 2016–17 was appended to the Report.

*Resolved*, That the Report be the Sixth Special Report of the Committee to the House.

*Ordered*, That the Chair make the Report to the House.

***4. Future programme***

The Committee considered this matter.

***5. Ocean acidification***

The Committee considered this matter.

#### **6. UKRI: Chief Executive Officer**

The Committee considered this matter.

#### **7. Genomics and genome-editing**

The Committee considered this matter.

*Ordered*, That the following written evidence relating to Genomics and genome-editing be reported to the House for publication on the internet:

AstraZeneca  
Society for Applied Microbiology and Microbiology Society  
The Royal Society  
Department of Health

Professor Sue Hill, Chief Scientific Officer, NHS England, Professor Mark Caulfield, Chief Scientist, Genomics England, and Dr Julia Wilson, Associate Director, Wellcome Trust Sanger Institute, gave oral evidence.

Professor Sir John Burn, Non-executive Director, NHS England, Professor Dame Kay Davies, Non-executive Director, Genomics England, and Dr Helen Firth, Clinical Lead, Deciphering Developmental Disorders Project, Wellcome Trust Sanger Institute, gave oral evidence.

[Adjourned till Wednesday 22 February at 9.00am.]

### **Wednesday 22 February 2017**

Members present:

Stephen Metcalfe, in the Chair

Victoria Borwick  
Jim Dowd  
Chris Green  
Dr Tania Mathias

Carol Monaghan  
Derek Thomas  
Matt Warman

#### **1. Closing the STEM skills gap**

The Committee considered this matter.

*Ordered*, That the following written evidence relating to Closing the STEM skills gap be reported to the House for publication on the internet:

Techniquiest Glyndwr  
Mentoring Solutions  
Dawn Hewitson

## ***2. Departmental chief scientific advisers***

*Ordered*, That the correspondence from Sir Mark Walport regarding departmental CSA vacancies be reported to the House for publication on the internet.

## ***3. Research integrity***

*Resolved*, That the Chair have leave to visit the Fifth World Conference on Research Integrity, Amsterdam, in May 2017 in a representative capacity for the purposes of the Committee's inquiry into research integrity.

## ***4. My Science Inquiry***

Draft Report (*Future programme: My Science Inquiry*) proposed by the Chair, brought up and read.

*The draft report was agreed to; the Formal Minutes relating to the consideration of the Report are published in the Ninth Report of the Committee, HC 859.*

## ***5. Algorithms in decision-making***

*Resolved*, That the Committee inquire into Algorithms in decision-making.

## ***6. Future programme***

The Committee considered this matter.

## ***7. Genomics and genome-editing***

The Committee considered this matter.

## ***8. Industrial Strategy: science, research and innovation***

Professor Alex Halliday, Vice President, Royal Society, Professor Quintin McKellar, Vice-Chancellor, University of Hertfordshire, and Chair, Universities UK Innovation and Growth

Policy Network, and Professor Paul Nightingale, Deputy Director, Science Policy Research Unit, University of Sussex, gave oral evidence.

Steve Bates, Chief Executive, BioIndustry Association, Jen Rae, Head of Policy, Nesta, and Allan Cook, Vice President, Royal Academy of Engineering, gave oral evidence.

[Adjourned till Wednesday 1 March at 9.00am.

### **Wednesday 1 March 2017**

Members present:

Stephen Metcalfe, in the Chair

Victoria Borwick  
Chris Green  
Dr Tania Mathias

Carol Monaghan  
Graham Stringer

#### ***1. Antimicrobial resistance***

*Ordered*, That the written evidence relating to antimicrobial resistance submitted by the Department of Health and the Animal and Plant Health Agency be reported to the House for publication on the internet.

#### ***2. Science communication***

*Ordered*, That the written evidence relating to science communication submitted by Techniquest Glyndwr be reported to the House for publication on the internet.

#### ***3. Science in emergencies: CBRN incidents***

*Ordered*, That the written evidence relating to CBRN emergencies submitted by Weinberg Next Nuclear be reported to the House for publication on the internet.

#### ***4. Draft Spaceflight Bill***

*Resolved*, That the Committee inquire into the Draft Spaceflight Bill.

*Ordered*, That the correspondence received from John Hayes MP, Department for Transport, and Jo Johnson, Department for Business, Energy and Industrial Strategy, relating to the Draft Spaceflight Bill be reported to the House for publication on the internet.

#### ***5. Setting up UKRI***

Draft Special Report (*Setting up UK Research & Innovation: Government Response to the Committee's Eighth Report*), proposed by the Chair, brought up, read the first and second time, and agreed to.

The Government response to the Eighth Report of Session 2016-17 was appended to the Report.

*Resolved*, That the Report be the Seventh Special Report of the Committee to the House.

*Ordered*, That the Chair make the Report to the House.

## **6. Genomics and genome-editing**

*Ordered*, That Professor Sir John Burn be appointed Specialist Adviser to assist the Committee in matters related to genomics and genome medicine. (*For details of declarations of interests, see Appendix.*)

## **7. Future programme**

The Committee considered its matter.

## **8. Ocean acidification**

Dr Carol Turley, Senior Scientist, Plymouth Marine Laboratory, Dr Alex Poulton, Principal Researcher in Marine Ecology and Biogeochemistry, National Oceanographic Centre, Dr Ceri Lewis, Senior Lecturer in Marine Biology, University of Exeter, and Dr Ned Garnett, Associate Director Research, Natural Environment Research Council, gave oral evidence.

Dr Melody Clark, Project Leader, British Antarctic Survey, and Professor Nicholas Bates, Director of Research, Bermuda Institute of Ocean Sciences, gave oral evidence.

[Adjourned till Wednesday 8 March at 9.00am.]

## **Wednesday 8 March 2017**

Members present:

Stephen Metcalfe, in the Chair

Victoria Borwick  
Dr Tania Mathias

Derek Thomas  
Matt Warman

## **1. Regenerative medicine**

*Ordered*, That the written evidence relating to regenerative medicine submitted by the EPSRC/MRC Centre for Doctoral Training in Regenerative Medicine, University of Manchester be reported to the House for publication on the internet.

## **2. Digital Strategy**

*Ordered*, That the correspondence from the Chair to Matt Hancock MP, Minister of State for Digital and Culture, regarding the UK Digital Strategy be reported to the House for publication on the internet.

### ***3. Managing intellectual property and technology transfer***

Draft Report (*Managing intellectual property and technology transfer*) proposed by the Chair, brought up and read.

*The draft report was agreed to; the Formal Minutes relating to the consideration of the Report are published in the Tenth Report of the Committee, HC (755).*

### ***4. My Science Inquiry***

*Ordered*, That the correspondence from the Chair to Ben Gummer MP, Minister for the Cabinet Office, regarding the use of evidence-based policy making, be reported to the House for publication on the internet.

### ***5. Setting up UKRI***

*Ordered*, That the correspondence from the Sir Mark Walport to the Chair, regarding his appointment as Chief Executive Designate of UK Research and Innovation and the appointment of the Deputy Government Chief Scientific Adviser, be reported to the House for publication on the internet.

### ***6. Genomics and genome-editing***

*Ordered*, That the written evidence relating to genomics and genome-editing submitted by Genomics England and the James Hutton Institute be reported to the House for publication on the internet.

Dr Edward Hockings, Founder, Ethics and Genetics, Professor Michael Parker, Director, Ethox Centre, University of Oxford, and Non-executive Director and Chair, Ethics Advisory Committee, Genomics England, Peter Counter, Chief Information Officer and Project Manager, Genomics England, and Alison Hall, Head of Humanities, PHG Foundation, gave oral evidence.

Professor Sir Mike Stratton, Director, Wellcome Trust Sanger Institute, and Chief Executive Officer, Wellcome Genome Campus, and Dr Jean Abraham, Academic Honorary Consultant in Medical Oncology, University of Cambridge, gave oral evidence.

[Adjourned till Wednesday 15 March at 9.30am.]

**Wednesday 15 March 2017**

Members present:

Stephen Metcalfe, in the Chair

Victoria Borwick  
Jim Dowd  
Chris Green  
Dr Tania Mathias  
Carol Monaghan

Gareth Snell  
Graham Stringer  
Derek Thomas  
Matt Warman

### ***1. Declaration of interests***

A Member disclosed his interests, pursuant to the resolution of the House of 13 July 1992. (See Appendix).

### ***2. Closing the STEM skills gap***

*Ordered*, That the written evidence relating to Closing the STEM skills gap submitted by the British Science Association be reported to the House for publication on the internet.

### ***3. Ocean acidification***

*Ordered*, That the written evidence relating to Ocean acidification submitted by Robert Allan be reported to the House for publication on the internet.

### ***4. Science communication***

Draft Report (*Science communication and engagement*) proposed by the Chair, brought up and read.

*The draft report was agreed to; the Formal Minutes relating to the consideration of the Report are published in the Eleventh Report of the Committee, HC (162).*

### ***5. Setting up UKRI***

Professor Sir Mark Walport, Chief Executive Designate, UK Research and Innovation, and Rebecca Endean, Director, Research and Innovation Reform, Department for Business, Energy and Industrial Strategy, gave oral evidence.

[Adjourned till Thursday 16 March at 11.30am.]

*Thursday 16 March 2017*

*The Chair, Victoria Borwick, Dr Tania Mathias, Carol Monaghan and Derek Thomas visited The Big Bang Fair, Birmingham, in accordance with the Committee's decision of 18 January 2017.*



## Thursday 16 March 2017

The Committee met at the Big Bang Fair, National Exhibition Centre, Birmingham

Members present:

Stephen Metcalfe, in the Chair

Victoria Borwick  
Dr Tania Mathias

Carol Monaghan  
Derek Thomas

### ***Closing the STEM skills gap***

Yvonne Baker, CEO, STEM Learning UK, Paul Jackson, CEO, Engineering UK, and Philip Prately, Director of Trade & Relations, Leonardo, gave oral evidence.

Dr Kirsty Clode, Chair, Women into Manufacturing and Engineering, Blossom Hill, BAE Systems UK Apprentice of the Year 2016, and Mark Page, Board member of Your Life project and Managing Partner, A.T. Kearney, gave oral evidence.

[Adjourned till Wednesday 22 March at 9.00am.]

## Wednesday 22 March 2017

Members present:

Stephen Metcalfe, in the Chair

Victoria Borwick  
Jim Dowd  
Chris Green  
Dr Tania Mathias

Carol Monaghan  
Gareth Snell  
Graham Stringer  
Matt Warman

### ***1. Research integrity***

The Committee considered this matter.

*Ordered*, That the following written evidence relating to Research integrity be reported to the House for publication on the internet:

AllTrials campaign  
ARMA (UK)  
Association of Medical Research Charities  
Birkbeck, University of London

BMJ  
Brian Deer  
British Academy  
British Association for Counselling and Psychotherapy  
British Ecological Society  
British Pharmacological Society  
Brunel University London  
COPE (Committee on Publication Ethics)  
Department of Business, Energy & Industrial Strategy  
Digital Science  
Dr Andrew Higginson  
Dr Ben Goldacre  
Dr Christopher Walker  
Dr Danny Kingsley  
Dr David Packham  
Dr Elizabeth Wager  
Dr Rhys Morgan  
Dr Sarah Starkey  
Dr Simon Kolstoe  
Dr Stuart Macdonald  
Dr Thomas Shelley  
Dr Zacharias Maniadis  
Edinburgh Napier University  
Health Research Authority  
Higher Education Funding Council for England  
Higher Education Funding Council for Wales (HEFCW)  
Jeremy Ramsden  
Jisc  
Katharine Ker  
Lady Iveta Kurpniece  
Leeds Beckett University  
LGC  
Manchester Metropolitan University  
Meta-Lab  
Michael Kelly  
Mr C Miller  
National DNA Database Ethics Group  
National Physical Laboratory  
Nicholas Brown  
Professor (Emeritus) Peter Aggett  
Professor Carl Heneghan  
Professor Gillian Evans  
Professor Ian Roberts  
Professor Marcus Munafo  
Professor Stephan Lewandowsky and Professor Dorothy Bishop  
Research Councils UK  
Retraction Watch and The Center For Scientific Integrity

REWARD Alliance  
Royal Academy of Engineering  
Royal Society of Biology  
Russell Group  
Science Media Centre  
Scientists for Global Responsibility  
Sense about Science  
Sheffield Hallam University  
Taylor & Francis  
The Academy of Medical Sciences  
The Animals in Science Committee  
The Geological Society  
The Publishers Association  
The Royal Society  
The Royal Statistical Society  
The University of Nottingham  
The University of Sheffield  
TranspariMED  
UK Research Integrity Office  
Universities UK  
University College London  
University of Exeter  
University of Glasgow  
University of Oxford  
Wiley

## ***2. Draft Spaceflight Bill***

The Committee considered this matter.

*Ordered*, That the following written evidence relating to the Draft Spaceflight Bill be reported to the House for publication on the internet:

Glasgow Prestwick Airport  
British Interplanetary Society  
Newton Launch Systems Ltd

## ***3. Randox testing services***

*Ordered*, That the correspondence from Brandon Lewis MP regarding Randox testing services be reported to the House for publication on the internet.

## ***4. Science in emergencies: chemical, biological, radiological or nuclear incidents***

Draft Report (*Science in emergencies: chemical, biological, radiological or nuclear incidents*) proposed by the Chair, brought up and read.

*The draft report was agreed to; the Formal Minutes relating to the consideration of the Report are published in the 12th Report of the Committee, HC (163).*

### **5. Big Bang Fair**

The Committee considered this matter.

### **6. Ocean acidification**

Dr Thérèse Coffey MP Parliamentary Under Secretary of State at the Department for Environment, Food and Rural Affairs, and Professor Ian Boyd, Chief Scientific Adviser, Department for Environment, Food and Rural Affairs, gave oral evidence.

[Adjourned till Monday 27 March at 4:00pm.]

**Monday 27 March 2017**

Members present:

Stephen Metcalfe, in the Chair

Victoria Borwick  
Chris Green

Dr Tania Mathias  
Matt Warman

### ***Draft Spaceflight Bill***

*Ordered*, That the correspondence from the Virgin Galactic regarding the Draft Spaceflight Bill be reported to the House for publication on the internet.

*Ordered*, That the following written evidence relating to the Draft Spaceflight Bill be reported to the House for publication on the internet:

UKspace  
Department for Transport (Impact Assessment)  
Royal Aeronautical Society  
Airbus Group

Richard Peckham, Business Development Director, Airbus Group, Joanne Wheeler, Partner, Bird & Bird, and Paul Davey, UK Business Development Lead, Lockheed Martin Space Systems Company, gave oral evidence.

Mark Thomas, Managing Director, Reaction Engines, and David Ashford, Managing Director, Bristol Spaceplanes, gave oral evidence.

[Adjourned till Wednesday 29 March at 9:00am.]



**Monday 29 March 2017**

Members present:

Stephen Metcalfe, in the Chair

Victoria Borwick  
Chris Green  
Carol Monaghan

Gareth Snell  
Graham Stringer  
Derek Thomas

***1. Research integrity***

The Committee considered this matter.

*Ordered*, That the written evidence relating to Research integrity submitted by the British Medical Association be reported to the House for publication on the internet.

***2. Health screening***

*Ordered*, That the correspondence from the deputy-Chief Medical Officer regarding the previous Committee's National health screening inquiry in the previous Parliament be reported to the House for publication on the internet.

***3. Industrial Strategy: science, research and innovation***

Draft Report (*Industrial Strategy: science and STEM skills*) proposed by the Chair, brought up and read.

*The draft report was agreed to; the Formal Minutes relating to the consideration of the Report are published in the Thirteenth Report of the Committee, HC 991.*

***4. The Draft Spaceflight Bill***

The Committee considered this matter.

***5. Science communication***

The Committee considered this matter.

***6. Genomics and genome-editing***

Professor Waseem Qasim, Professor of Cell and Gene Therapy, Institute of Child Health, Alastair Kent, Director, Genetic Alliance UK, and Dr Kathy Niakan, Group Leader, Francis Crick Institute, gave oral evidence.

Dr Andy Greenfield, Programme Leader, Medical Research Council's Harwell Institute, Robin Lovell-Badge, Senior Group Leader, Francis Crick Institute, James Lawford Davies, Partner, Hempsons, and Philippa Taylor, Head of Public Policy, Christian Medical Fellowship, gave oral evidence.

[Adjourned till Wednesday 19 April at 9:00am.

## Wednesday 19 April 2017

Members present:

Stephen Metcalfe, in the Chair

Victoria Borwick  
Chris Green  
Carol Monaghan

Derek Thomas  
Matt Warman

### ***1. Research integrity***

The Committee considered this matter.

*Ordered*, That the following written evidence relating to Research integrity be reported to the House for publication on the internet:

Nuffield Council on Bioethics  
Dr Peter Wilmshurst  
Dr Brian Fenton  
MRC Laboratory of Molecular Biology

### ***2. Closing the STEM skills gap***

*Ordered*, That the written evidence relating to Closing the STEM skills gap submitted by the InWork Education Group be reported to the House for publication on the internet.

### ***3. Genomics and genome-editing***

*Ordered*, That the written evidence relating to Genomics and genome-editing submitted by the British Society for Genetic Medicine be reported to the House for publication on the internet.

### ***4. Radox Testing Services***

*Ordered*, That the correspondence from Brandon Lewis MP regarding Radox Testing Services be reported to the House for publication on the internet.

### ***5. Evidence-based policymaking (Cabinet Office)***

*Ordered*, That the correspondence from Chris Skidmore MP regarding the use of evidence in policy-making by the Cabinet Office be reported to the House for publication on the internet.

### ***6. Future programme***

The Committee considered this matter.

### ***7. The Draft Spaceflight Bill***

*Ordered*, That the following written evidence relating to the Draft Spaceflight Bill be reported to the House for publication on the internet:

House of Lords Select Committee on Delegated Powers and Regulatory Reform  
Department for Transport (Responses on the Draft Bill)  
Department for Transport (Delegated Powers Memorandum)

Stuart Martin, Chief Executive Officer, Satellite Applications Catapult, Stuart McIntyre, Chief Executive Officer, Orbital Access, and Professor Sir Martin Sweeting, Group Executive Chairman, SSTL, gave oral evidence.

Tim Johnson, Policy Director, Civil Aviation Authority, Jeremy Stubbs, Programme Manager, Commercial Space Operations, Civil Aviation Authority, Rebecca Evernden, Director of Policy, UK Space Agency, and Dr Richard Crowther, Chief Engineer, UK Space Agency, gave oral evidence.

[Adjourned till Wednesday 26 April at 9:30am.]

### **Wednesday 26 April 2017**

Members present:

Stephen Metcalfe, in the Chair

Victoria Borwick  
Jim Dowd  
Chris Green  
Carol Monaghan

Derek Thomas  
Graham Stringer  
Matt Warman

#### ***1. Algorithms in decision-making***

*Ordered*, That the following written evidence relating to Algorithms in decision-making be reported to the House for publication on the internet:

Academy of Medical Sciences

Aire

BCS, The Chartered Institute for IT

Centre for Intelligent Sensing

Council of Professors and Heads of Computing

DataKind UK

Department for Culture, Media and Sport

Dr Alex Griffiths, Dr Henry Rothstein and Prof David Demeritt

Dr Galina Andreeva and Dr hab. Anna Matuszyk

Dr Janet Bastiman



Dr Stephen Castell  
Durham Constabulary  
Financial Services Consumer Panel  
Future Advocacy  
Imosphere  
Information Commissioner's Office  
Institute of Mathematics and its Applications  
Liberty  
Dr. Alison Powell  
Marion Oswald and Sheena Urwin  
Microsoft  
Mr David Strudwick  
Mr Jamie Grace  
Mr Mark Gardiner  
Mr Tom Macfarlane  
Nesta  
Office for National Statistics  
Oxford Internet Institute, University of Oxford  
Paul Pedley  
Polygeia  
Professor Daniel Neyland  
Professor Louise Amoore  
Professor Nigel Harvey  
Projects by IF  
Research Councils UK  
Royal Academy of Engineering  
Sensible Code Company  
Simul Systems Ltd  
Space for Sharing Project  
The Alan Turing Institute  
The Human Rights, Big Data and Technology Project  
The Operational Research Society  
The Royal Society  
The Royal Statistical Society  
UCL Jill Dando Institute of Security and Crime Science  
University College London  
University of Nottingham and University of Oxford

## ***2. Research integrity***

*Ordered*, That the written evidence relating to Research integrity submitted by Nick Chambers be reported to the House for publication on the internet.

### **3. The Draft Spaceflight Bill**

*Ordered*, That the written evidence relating to the Draft Spaceflight Bill submitted by the UK Space Agency and Civil Aviation Agency and the Department for Transport be reported to the House for publication on the internet.

Draft Report (*The Draft Spaceflight Bill*) proposed by the Chair, brought up and read.

*The draft report was agreed to; the Formal Minutes relating to the consideration of the Report are published in the Fourteenth Report of the Committee, HC 1070.*

### **4. Regenerative medicine**

Draft Report (*Regenerative medicine*) proposed by the Chair, brought up and read.

*The draft report was agreed to; the Formal Minutes relating to the consideration of the Report are published in the Fifteenth Report of the Committee, HC 275.*

### **5. Genomics and genome-editing**

*Ordered*, That the written evidence relating to Genomics and genome-editing submitted by the University of Cambridge and Cancer Research UK Cambridge Centre and the Association of Cancer Physicians be reported to the House for publication on the internet.

Draft Report (*Genomics and genome editing: future lines of inquiry*) proposed by the Chair, brought up and read.

*The draft report was agreed to; the Formal Minutes relating to the consideration of the Report are published in the Sixteenth Report of the Committee, HC 854.*

### **6. Ocean acidification**

The Committee considered this matter.

*Ordered*, That the correspondence from the Chair to Thérèse Coffey MP, Parliamentary Under Secretary of State for the Environment and Rural Life Opportunities, Department for Environment, Food and Rural Affairs, regarding ocean acidification, be reported to the House for publication on the internet.

### **7. Member attendance**

The Committee considered this matter.

***8. Publishing evidence prior to prorogation***

*Resolved*, That, subject to the discretion of the Chair, written evidence received before the prorogation of Parliament shall be reported to the House for publication.

[The Committee adjourned

## **Annex**

The following paper was reported to to the House by the Chair under the order of the Committee this day.

Letter from Minister for School Standards, relating to the Big Bang Fair.

## **Appendix**

### **DECLARATION OF INTERESTS**

**28 June 2016**

#### **Special Adviser: declaration of interests**

##### **Professor Sian Harding**

Professor of Cardiac Pharmacology, National Heart and Lung Institute, Imperial College London; Board member of the British Society for Gene and Cell Therapy; Director of British Heart Foundation (BHF) Cardiovascular Regenerative Medicine Centre; Co-investigator in the UK Regenerative Medicine Platform Immunomodulation Hub; Co-ordinating Investigator of the Clinical Trial of Gene Therapy in Heart Failure; member of the medical Research Council (MRC) Regenerative Medicine Research Committee; member of the BHF Chairs and Programme Grants Committee; on editorial board of Cardiovascular Research; on Scientific Advisory Board of the Stem Cells for Safer Medicines (PPP); Head of Division, Cardiovascular, National Heart and Lung Institute (NHLI); Cardiovascular Theme Lead, Biomedical Research Centre, Imperial Academic Health Trust; member of Biomedical Research Unit Committee, Royal Brompton and Harefield Trust; member of Tissue Governance Committee, Royal Brompton Hospital; Designated Individual for NHLI, Human Tissue Act Licence; Expert on Alternatives to Animals in Research, Imperial College; Fellow of the British Pharmacological Society, Society of Biology, International Society for Heart Research, European Society of Cardiology and American Heart Association; Until 2010 President of the European Section of the International Society for Heart Research; until 2013 member of the MRC Populations, Systems and Medicine Board, Nuffield Council for Bioethics, and European Society of Cardiology Programme Committee; recipient of grant awards from MRC, National Centre for the Replacement, Refinement and Reduction of Animals in Research, BHF, Rosetrees Trust, Leducq network of Excellence, Rectors Award for Excellence, Celladon, Wellcome Trust, GSK

**26 October 2016:**

#### **Declaration of Members' interests**

##### **Stephen Metcalfe MP**

Chairman, Parliamentary and Scientific Committee.

Land and property portfolio: Share in holiday home in France.

Shareholdings: Aysgarth Properties Ltd

**1 March 2016**

#### **Special Adviser: declaration of interests**

**Professor Sir John Burn**

Non-executive director of NHS England; Professor of clinical genetics, Newcastle University; Honorary consultant clinical geneticist, Newcastle Hospitals NHS Foundation Trust; Chairman and shareholder of QuantuMDx Group Ltd; member of Science Advisory Committee, Genomics England; member of Genomics Advisory Board, Health Education England; Director of Global Variome Ltd (previously Human Variome Project); member of Advisory Board to Astra Zeneca on the use of Lynparza in hereditary breast/ovarian cancer; patron of Veterans at Ease (Charity); and member of Liberal Democratic party (not active in party politics).

Sir John Burn agreed from the outset of his engagement as specialist adviser that in view of his interests he would not provide advice or insights on NHS policy or funding in regard to genomics and genome-editing.

*15th March 2017*

**Declaration of Member's interests****Gareth Snell MP**

Member of Newcastle under Lyme Borough Council, Staffordshire (since General Election, no longer receiving allowances); Unpaid director of Staffordshire Credit Union.