



House of Commons
Science and Technology
Committee

'My Science Inquiry'

Sixteenth Report of Session 2017–19

*Report, together with formal minutes relating
to the report*

*Ordered by the House of Commons
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Science and Technology Committee

The Science and Technology Committee is appointed by the House of Commons to examine the expenditure, administration and policy of the Government Office for Science and associated public bodies.

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Publication

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Evidence relating to this report is published on the [inquiry publications page](#) of the Committee's website.

Committee staff

The current staff of the Committee are: Danielle Nash (Clerk), Zoë Grünwald (Second Clerk), Dr Harry Beeson (Committee Specialist), Dr Elizabeth Rough (Committee Specialist), Martin Smith (Committee Specialist), Sonia Draper (Senior Committee Assistant), Julie Storey (Committee Assistant), and Joe Williams (Media Officer).

Contacts

All correspondence should be addressed to the Clerk of the Science and Technology Committee, House of Commons, London SW1A 0AA. The telephone number for general inquiries is: 020 7219 2793; the Committee's e-mail address is: scitechcom@parliament.uk.

You can follow the Committee on Twitter using [@CommonsSTC](#).

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The ‘My Science Inquiry’ process and next steps

1. During this Parliament we have sought to continue to widen our external engagement with the public as well as the experts and institutions who are usually involved as witnesses to our inquiries. For example, we:

- Opened up the second half of our oral evidence session for our inquiry, *An immigration system that works for Science and Innovation*, on 19 June 2018 to take contributions from the public gallery and via Twitter;¹
- Held a half-day workshop with stakeholders to gather their input and advice to help us refine our immigration proposals;²
- Held summits with stakeholders on Brexit, science and innovation, and genomics to understand different points of view;
- Taken oral evidence away from Westminster;³
- Produced a teacher’s pack in conjunction with the Parliamentary Education Service for our *Impact of social media and screen-use on young people’s health* inquiry—the pack included a lesson plan for both primary and secondary school children and aimed to facilitate a discussion on their thoughts and use of social media;⁴
- Surveyed children visiting Parliament for our inquiries into the *Impact of social media and screen-use on young people’s health* and *Energy Drinks*;⁵
- Sourced questions from Twitter to put to the Science Minister in an oral evidence session;⁶ and
- Held roundtable and outreach events in Westminster and in other parts of the UK for our inquiries into *Impact of social media and screen-use on young people’s health*, *Energy Drinks*, *Digital Government* and *Japanese Knotweed and the built environment*.⁷

1 Science and Technology Committee, Eighth Report of Session 2017–19, [An immigration system that works for science and innovation](#), HC 1061, para 6

2 Science and Technology Committee, Eighth Report of Session 2017–19, [An immigration system that works for science and innovation](#), HC 1061, para 6

3 See, for example, “[National Quantum Technologies Programme examined](#)”, Science and Technology Committee announcement, 27 June 2018

4 Science and Technology Committee, Fourteenth Report of Session 2017–19, [Impact of social media and screen-use on young people’s health](#), HC 822, para 7

5 See, for example, Science and Technology Committee, Fourteenth Report of Session 2017–19, [Impact of social media and screen-use on young people’s health](#), HC 822, ‘Annex 3’ and Science and Technology Committee, Thirteenth Report of Session 2017–19, [Energy drinks and children](#), HC 821, ‘Annex’.

6 See tweet from the Science and Technology Committee Twitter account (@CommonsSTC) on [28 November 2018](#)

7 Science and Technology Committee, Fourteenth Report of Session 2017–19, [Impact of social media and screen-use on young people’s health](#), HC 822, paras 6–8; Science and Technology Committee, Thirteenth Report of Session 2017–19, [Energy drinks and children](#), HC 821, para 5. See also, for example, tweets from the Science and Technology Committee Twitter account (@CommonsSTC) on [22 January 2019](#) and [24 January 2019](#)

2. Our predecessor Committee conducted a 'My Science Inquiry' initiative in 2016–2017.⁸ We held inquiries into *Algorithms in decision-making*⁹ and *E-cigarettes*¹⁰ as a result of that initiative. In November 2018 we launched the 'My Science Inquiry' process again, which invited the public to suggest potential inquiries for our future work programme.¹¹ Our initiative provided an opportunity for the science and technology community and the general public to alert us to topics deserving greater parliamentary scrutiny. We encouraged members of underrepresented groups to submit a proposal.

3. We asked submitters to describe, in 200 words or a short video, the nature of the issue that might be explored, why it deserved attention, and how Government policy in the area could be developed or improved. The responses were numerous, of a high quality and covered a broad range of potential subjects, spanning both 'policy for science' and 'science for policy' (how science and evidence is applied in policy-making). We received 86 written and video submissions, all of which are available on our website.¹²

4. We shortlisted ten submissions on the basis of the potential of the subject matter, and invited those submitters to deliver a five-minute 'pitch' to us, in public, on 29 January 2019. We published the transcript as formal evidence, so that their words could reach a wider audience beyond the Committee, and be entered into the permanent parliamentary record.¹³

5. We have selected four of the 'My Science Inquiry' pitches as the basis for new inquiries. In the first instance, we will launch an inquiry into commercial genomics. We hope to launch an inquiry into the impact of science funding policy on equality, diversity, inclusion and accessibility within the next twelve months. We have combined two proposals—food security, the environment and crop protection, and organisms obtained by gene editing techniques—into an inquiry into the role of science and technology in addressing challenges to food security and biodiversity. We hope to launch this inquiry within the next 12 months.

6. We also intend to pursue all of the other ideas pitched to us in a range of ways, including highlighting concerns and suggestions to Ministers. We set out below a summary of the ten ideas pitched to us on 29 January and the actions we will take:

- **Commercial genomics:** Catherine Joynson (Nuffield Council on Bioethics) suggested that we should hold an inquiry into commercial genomics.¹⁴ In her pitch Dr Joynson proposed that an inquiry could look at the potential benefits and ethical challenges raised by the direct-to-consumer genetic testing industry, as well as the impact of this industry on the NHS and the regulation that it is subject to. We will launch an inquiry into commercial genomics.

8 Science and Technology Committee, Ninth Report of Session 2016–17, [Future programme: 'My Science Inquiry'](#), HC 859

9 Science and Technology Committee, Fourth Report of Session 2017–19, [Algorithms in decision-making](#), HC 351

10 Science and Technology Committee, Seventh Report of Session 2017–19, [E-cigarettes](#), HC 505

11 ["Committee calls for ideas from the public"](#), Science and Technology Committee announcement, 12 November 2018

12 See 'My Science Inquiry' publications on the [Committee's website](#)

13 Oral evidence taken before the Science and Technology Committee on 29 January 2019, HC (2017–19) [1716](#)

14 See Nuffield Council on Bioethics ([MSI0066](#)) and [Qq49–55](#).

- **Impact of science funding policy on equality, diversity, inclusion and accessibility:** Professor Rachel Oliver (University of Cambridge) suggested that we should hold an inquiry into the impact of science funding policy on equality, diversity, inclusion and accessibility.¹⁵ Professor Oliver’s original submission was supported by 203 individuals. In her pitch she proposed that we gather data on how funding was allocated to identify any biases in funding processes. An inquiry could then explore the extent to which funding, policies, procedures and cultures were affecting diversity in science, and establish why certain funding streams tended to improve or limit diversity. We will launch an inquiry into the impact of science funding policy on equality, diversity, inclusion and accessibility, within the next 12 months.
- **Organisms obtained by gene editing techniques:** Dr Nicola Patron (Earlham Institute) suggested that we should hold an inquiry into the regulation of organisms obtained by different gene editing techniques.¹⁶ She suggested that we explore whether there was a case for regulatory divergence from the European Union after the UK has left the EU. We will incorporate this into an inquiry into the role of science and technology in addressing challenges to food security and biodiversity.
- **Food security, the environment and crop protection:** Professor Toby Bruce (Keele University) suggested that we should hold an inquiry into food security, the environment and crop protection.¹⁷ He suggested that an inquiry could look at the tools available to farmers to protect crops against pests, weeds and diseases, how these had changed over time, what changes were needed to ensure food security in the future and research investment in crop protection. We will incorporate this into an inquiry into the role of science and technology in addressing challenges to food security and biodiversity.
- **Ensuring secure digital innovation:** Dr Emma Williams (University of Bristol) suggested that we should hold an inquiry into secure digital innovation.¹⁸ She explained that an inquiry could explore whether the UK should introduce regulation focused on improving the security of consumer ‘smart products’; and, if so, how best this regulation should be designed in order effectively to meet the needs of both consumers and product innovators. Due to pressures on our forward programme we are unable to currently commit to launching this inquiry within the next 12 months. However, we will retain it as a priority on our list of possible future inquiries. In the meantime, the Committee will write to Ministers on the issues raised in the pitch.
- **Wearable technology:** Dr Jyotsna Vohra (Cancer Research UK) suggested that we should hold an inquiry into wearable technology.¹⁹ Dr Vohra suggested that an inquiry could look at: how to harness the knowledge from wearable technology (such as Fitbit and applications such as MyFitnessPal); how these technologies could facilitate behaviour change; and how to use these technologies to inform policies that will help to reduce the incidence of preventable cancers

15 See Professor Rachel Oliver ([MSI0048](#)) and [Qq63–66](#).

16 See Earlham Institute ([MSI0009](#)) and [Qq31–38](#).

17 See Professor Toby Bruce ([MSI0071](#)) and [Qq56–62](#).

18 See Emma Williams ([MSI0020](#)) and [Qq44–48](#).

19 See Cancer Research UK ([MSI0072](#)) and [Qq1–12](#).

and obesity. We will write to the Secretary of State for Health and Social Care to seek information on the issues raised in the pitch and to explore what, if any, action the Government plans to take.

- **Plan S and Open Access:** Dr Robert Massey (Royal Astronomical Society) suggested that we should hold an inquiry into Plan S and Open Access.²⁰ He told us that Plan S requires that, from 2020, scientific publications that result from research funded by public grants must be published in compliant Open Access journals or platforms. Dr Massey proposed that the Committee should hold an inquiry into the implementation of Plan S in the UK and the role of UK Research and Innovation (UKRI) in this process. We had already corresponded with the Minister on this matter.²¹ Following this pitch, we will write to the Chief Executive of UKRI about its review of Open Access and the steps they are taking to ensure that a range of stakeholder views inform the review's findings.
- **Microbiome research and applications:** Dr Chris Brown (Society for Applied Microbiology) suggested that we should hold an inquiry into microbiome research and its applications.²² Specifically, he suggested that the Committee might wish to explore the potential benefit of a national microbiome roadmap and whether it could help to identify the key opportunities for growth, determine ways to coordinate funding, accelerate innovation, stimulate the early adoption of technology, and consider the case for regulation of microbiome research and innovation. We will write to Ministers on whether the UK should have a microbiome roadmap and what lessons we can learn from actions taken by international partners in this area.
- **Government Chief Scientific Adviser (GCSA) guidance on science advice in policymaking:** James Tooze (Campaign for Science and Engineering) suggested that we should hold an inquiry into GCSA guidance on science advice in policymaking.²³ In particular, he suggested that we should review the uptake of and adherence to the GCSA's guidelines on the use of science by different Government departments, including how that advice is sought and applied. We already hold an evidence session at least once a year with the GCSA, Sir Patrick Vallance. When Sir Patrick appears before us next we will question him on these matters. We will also look into how scientific advice is being sought and applied when we conduct inquiries looking at the evidence base for Government policies.
- **What are the likely climate change impacts on health and productivity in the UK:** Dr Gesche Huebner (UCL Energy Institute) suggested that we should hold an inquiry into the impact of climate change on health and productivity in the UK.²⁴ In her pitch she explained that such an inquiry could explore: where Government funding should be directed to fill knowledge gaps on this issue; changes and futureproofing of standards and regulations; metrics for collecting data to inform policy in this area; and how health benefits were costed into Government calculations and policies intended to mitigate climate change. We

20 See Royal Astronomical Society ([MSI0015](#)) and [Qq13–22](#).

21 See [letter from the Chair to the Science Minister](#), dated 24 October 2018, and [the Science Minister's response](#), dated 11 December 2018, relating to UK Research and Innovation Review of Open Access

22 See Society for Applied Microbiology ([MSI0022](#)) and [Qq23–30](#).

23 See Campaign for Science and Engineering ([MSI0037](#)) and [Qq39–43](#).

24 Dr Gesche Huebner, UCL Energy Institute ([MSI0060](#)) and [Qq67–68](#).

will write to the Minister of State for Energy and Clean Growth to explore these issues and to understand what actions the Government could take to address the concerns raised.

7. We are grateful for all the written and video submissions we received, and will seek to incorporate the ideas contained in them in our work where possible. We have also sent details of all of the submissions we received, not just those that were shortlisted to present their ideas to us, to the Parliamentary Office of Science and Technology for possible use in their briefing papers for parliamentarians.²⁵

Formal minutes

Tuesday 12 February 2019

Members present:

Norman Lamb, in the Chair

Vicky Ford Darren Jones

Bill Grant Carol Monaghan

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

Ordered, That the draft Report be read a second time, paragraph by paragraph.

Paragraphs 1 to 7 read and agreed to.

Resolved, That the Report be the Sixteenth Report of the Committee to the House.

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

[Adjourned till Tuesday 26 February at 9.00 am

Witnesses

The following witnesses gave evidence. Transcripts can be viewed on the [inquiry publications page](#) of the Committee's website.

Tuesday 29 January 2019

Dr Jyotsna Vohra, Head of the Cancer Policy Research Centre, Cancer Research UK; **Dr Robert Massey**, Deputy Executive Director, Royal Astronomical Society; **Dr Chris Brown**, Policy and Public Affairs Manager, Society for Applied Microbiology; **Dr Nicola Patron**, Synthetic Biology Group Leader, Earlham Institute; **James Tooze**, Policy Officer, Campaign for Science and Engineering; **Dr Emma Williams**, Vice Chancellor's Fellow in Digital Innovation and Wellbeing, School of Psychological Science, University of Bristol; **Catherine Joynson**, Assistant Director, Nuffield Council on Bioethics; **Professor Toby Bruce**, Professor of Insect Chemical Ecology, Keele University; **Professor Rachel Oliver**, Professor of Material Science, University of Cambridge; **Dr Gesche Huebner**, Senior Research Associate, UCL Energy Institute

[Q1-68](#)

Published written evidence

The following written evidence was received and can be viewed on the [inquiry publications page](#) of the Committee's website.

MSI numbers are generated by the evidence processing system and so may not be complete.

- 1 Abdel Salhi ([MSI0002](#))
- 2 Action for M.E. ([MSI0038](#))
- 3 British Academy of Management ([MSI0045](#))
- 4 Callum Taylor ([MSI0053](#))
- 5 Campaign for Science and Engineering ([MSI0037](#))
- 6 Cancer Research UK ([MSI0072](#))
- 7 CBMNet ([MSI0040](#))
- 8 Cellular Agriculture UK ([MSI0083](#))
- 9 Digital Anthropology ([MSI0021](#))
- 10 Dr Annette Bramley ([MSI0041](#))
- 11 Dr Barbara Ribeiro, University of Manchester ([MSI0061](#))
- 12 Dr Caroline Jay and Robert Haines, University of Manchester ([MSI0068](#))
- 13 Dr Deirdre Harrington, University of Leicester and Dr Lauren Sherar, Loughborough University ([MSI0057](#))
- 14 Dr Eleonora Pantano, University of Bristol ([MSI0004](#))
- 15 Dr Emma Yhnell ([MSI0026](#))
- 16 Dr Erin Williams, Feed ([MSI0051](#))
- 17 Dr Gavin Costigan, University of Southampton ([MSI0006](#))
- 18 Dr Gesche Huebner, UCL Energy Institute ([MSI0060](#))
- 19 Dr Glenn Flux ([MSI0046](#))
- 20 Dr James O'Malley, Versus Arthritis ([MSI0056](#))
- 21 Dr John Lincoln ([MSI0032](#))
- 22 Dr John Riches ([MSI0062](#))
- 23 Dr Julian Derry ([MSI0013](#))
- 24 Dr Lilian Hunt ([MSI0008](#))
- 25 Dr Lina Brand Correa ([MSI0074](#))
- 26 Dr Mairead Bermingham, Centre for Genomics and Experimental Medicine, Institute of Genetics and Molecular Medicine, University of Edinburgh ([MSI0058](#))
- 27 Dr Melanie Smallman ([MSI0054](#))
- 28 Dr Paul Knott ([MSI0031](#))
- 29 Dr Petra Kalshoven, University of Manchester ([MSI0063](#))
- 30 Dr Petula Nurse, University of Wolverhampton ([MSI0070](#))
- 31 Dr Stephen Foord ([MSI0079](#))
- 32 Dr Suzanne Audrey ([MSI0007](#))

- 33 Dr Tammy Campbell ([MSI0028](#))
- 34 Dr Umaima Haider, University of East London ([MSI0073](#))
- 35 Earlham Institute ([MSI0009](#))
- 36 Electronic Materials and Devices Group, Zepler Institute of Photonics and Nanoelectronics, University of Southampton ([MSI0042](#))
- 37 Emma Williams ([MSI0020](#))
- 38 Future Advocacy ([MSI0036](#))
- 39 Hydrogeological Group of the Geological Society ([MSI0081](#))
- 40 Jessica Almine ([MSI0078](#))
- 41 Jim Rudy ([MSI0085](#))
- 42 Jisc ([MSI0024](#))
- 43 Kidney Research UK ([MSI0080](#))
- 44 Mental Health Foundation ([MSI0023](#))
- 45 Microbiology Society ([MSI0086](#))
- 46 Mike Larkin ([MSI0088](#))
- 47 Mr James Sambrook ([MSI0003](#))
- 48 Mr Nikolay Gurianov ([MSI0010](#))
- 49 Ms Marika Cencelli ([MSI0049](#))
- 50 Ms Nina Schuller ([MSI0005](#))
- 51 Ms Rebecca Fisher ([MSI0044](#))
- 52 MSD ([MSI0087](#))
- 53 National Farmers Union (NFU) ([MSI0075](#))
- 54 National Institute for Health Research (NIHR) ([MSI0077](#))
- 55 Norwich FarmShare ([MSI0027](#))
- 56 Nuffield Council on Bioethics ([MSI0066](#))
- 57 Padhmanand S ([MSI0029](#))
- 58 Photonics Leadership Group ([MSI0033](#))
- 59 Professor Allan Walton, Dr Paul Anderson and Dr Gavin Harper, Birmingham Centre for Strategic Elements and Critical Materials, University of Birmingham ([MSI0014](#))
- 60 Professor Catriona McKinnon ([MSI0047](#))
- 61 Professor Clare Mills, University of Manchester ([MSI0069](#))
- 62 Professor Ed Hawkins, Professor Hayley Fowler, Dr Matt Fry, Dr Ivan Haigh, and Professor Chris Scott ([MSI0025](#))
- 63 Professor Jonathan Dawes, Institute for Mathematical Innovation, University of Bath ([MSI0050](#))
- 64 Professor Rachel Oliver ([MSI0048](#))
- 65 Professor Sarah Cartmell, University of Manchester ([MSI0065](#))
- 66 Professor Sheena Cruickshank, University of Manchester ([MSI0064](#))
- 67 Professor Toby Bruce ([MSI0071](#))

- 68 Professor Toby Peters ([MSI0052](#))
- 69 Royal Astronomical Society ([MSI0015](#))
- 70 Royal Society of Chemistry ([MSI0034](#))
- 71 RSPCA ([MSI0016](#)), ([MSI0017](#)), ([MSI0018](#)), ([MSI0019](#))
- 72 Ruth Norris, University of Manchester ([MSI0067](#))
- 73 Sally Phillips and Colette Lloyd ([MSI0043](#))
- 74 Sam Downie ([MSI0012](#))
- 75 Saoirse Fitzpatrick, STOPAIDS ([MSI0055](#))
- 76 Shimpling Park Farms Limited ([MSI0076](#))
- 77 Society for Applied Microbiology ([MSI0022](#))
- 78 The Association of the British Pharmaceutical Industry ([MSI0035](#))
- 79 The Physiological Society ([MSI0030](#))
- 80 UCL researchers ([MSI0059](#))
- 81 UK Hydrogen and Fuel Cell Association ([MSI0001](#))
- 82 Web and Internet Science Group, University of Southampton ([MSI0082](#))
- 83 WebRoots Democracy ([MSI0011](#))

List of Reports from the Committee during the current Parliament

All publications from the Committee are available on the [publications page](#) of the Committee’s website. The reference number of the Government’s response to each Report is printed in brackets after the HC printing number

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Second Report	Brexit, science and innovation	HC 705
Third Report	Genomics and genome editing in the NHS	HC 349
Fourth Report	Algorithms in decision-making	HC 351
Fifth Report	Biometrics strategy and forensic services	HC 800
Sixth Report	Research integrity	HC 350
Seventh Report	E-cigarettes	HC 505
Eighth Report	An immigration system that works for science and innovation	HC 1061
Ninth Report	Flu vaccination programme in England	HC 853
Tenth Report	Research integrity: clinical trials transparency	HC 1480
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Twelfth Report	Quantum technologies	HC 820
Thirteenth Report	Energy drinks and children	HC 821
Fourteenth Report	Impact of social media and screen-use on young people’s health	HC 822
Fifteenth Report	Evidence-based early years intervention: Government’s Response to the Committee’s Eleventh Report of Session 2017–19	HC 1898
First Special Report	Science communication and engagement: Government Response to the Committee’s Eleventh Report of Session 2016–17	HC 319
Second Special Report	Managing intellectual property and technology transfer: Government Response to the Committee’s Tenth Report of Session 2016–17	HC 318
Third Special Report	Industrial Strategy: science and STEM skills: Government Response to the Committee’s Thirteenth Report of Session 2016–17	HC 335
Fourth Special Report	Science in emergencies: chemical, biological, radiological or nuclear incidents: Government Response to the Committee’s Twelfth Report of Session 2016–17	HC 561

Fifth Special Report	Brexit, science and innovation: Government Response to the Committee's Second Report	HC 1008
Sixth Special Report	Algorithms in decision-making: Government Response to the Committee's Fourth Report	HC 1544
Seventh Special Report	Research integrity: Government and UK Research and Innovation Responses to the Committee's Sixth Report	HC 1562
Eighth Special Report	Biometrics strategy and forensic services: Government's Response to the Committee's Fifth Report	HC 1613
Ninth Special Report	An immigration system that works for science and innovation: Government's Response to the Committee's Eighth Report	HC 1661
Tenth Special Report	Research integrity: clinical trials transparency: Health Research Authority Response to the Committee's Tenth Report	HC 1961