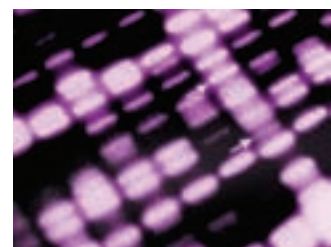


The top 10 new MPs

for science, technology and engineering policy



With a new government science, technology, engineering and maths (STEM) has a new set of decision makers and, more importantly, new people who will influence those decision makers. The question facing the STEM communities is: will these influencers be advocates on critical issues? This is your guide to the new batch of STEM influencers and what they consider the relevant policy priorities.

Proof assessed the incoming MPs' relevance to the STEM communities using a review process that considered their background, personal interests, and presence of research institute or science hub in their constituency. The table below shows those MPs we consider to be the coalition government's 'top ten' STEM influencers. Our judgement has been reflected by their respective parties – eight have been appointed to Select Committees and one has become a Parliamentary Private Secretary.

At a glance

MP	Party	Science background	Engineering background	Science institute/hub in constituency	Appointments
Gordon Birtwistle	LD		✓		PPS to the Chief Secretary to the Treasury
Nicola Blackwood	C			✓	Home Affairs Select Committee
Robert Buckland	C			✓	Justice Select Committee; Statutory Instruments Select Committee
George Freeman	C	✓			Communities & Local Government Select Committee
Lillian Greenwood	L			✓	Transport Select Committee
Julian Huppert	LD	✓		✓	Home Affairs Select Committee
David Mowat	C	✓	✓	✓	Scottish Affairs Select Committee
Chinyelu (Chi) Onwurah	L		✓		Select Committee for Business, Innovations and Skills
Rachel Reeves	L			✓	Select Committee for Business, Innovations and Skills
Alec Shelbrooke	C	✓	✓		

* This means any higher education or employment in the sector – ie from bench science to spin out companies

Main themes

Proof conducted individual interviews with these MPs. Details of those interviews follow, but here are the main STEM trends we identified.

Science education and STEM undergraduates

Both the need to inspire and enthuse young people about STEM subjects, and the need to attract and retain quality STEM (under)graduates, have been recognised for some years.

There have been several initiatives and projects — of varying success — to address these complementary issues. There is no quick fix solution, so it is encouraging to see that half of the MPs questioned for this report saw them as a key priority.

Spin outs and commercialisation of UK R&D

Although a respect for pure science and some wariness about the 'impact agenda' were expressed, commercialisation of R&D rated as a high priority for half of the MPs — equal to STEM education and graduates.

Interestingly, one MP, Alec Shelbrooke, specifically wants universities to be able to benefit financially from their spin outs to help fund further research — something that is currently restricted by their charity status. Could this be a precursor to taking the onus off future government funding?

High-tech innovation, manufacturing and products

Four of the MPs felt that a focus on high-tech manufacturing and innovation, particularly green technologies and renewable energy generation, as exportable products is an essential priority. This would shift the UK's economic base from financial services to something more tangible.

Evidence-based policy

All of the MPs expressed a willingness to be guided by the evidence where it opposed the party position, but unsurprisingly there were caveats. The context of the decision is crucial, and many rightly noted that policy is not determined on science alone, but that political, social, ethical, cultural and social opinion are also factors.

However, only George Freeman explicitly recognised that policy makers need to better distinguish where they should and should not be citing science as the base for their position.

Gordon Birtwistle

Burnley and Padiham (LibDem)

Parliamentary Private Secretary to the Chief Secretary to the Treasury



Background	Production and mechanical engineering (over 25 years)
Personal interest/goal	Advanced manufacturing
Priorities for the Science & Innovation Minister	Industries for the future (aerospace, nuclear, biochemicals, green energies) Green transport (greener aeroplane engines, motor cars) Advanced medicines and health technologies
Priorities for the Select Committees:	
<i>Science & Technology</i>	Advancing medical science
<i>BIS</i>	Assist industry in developing high-tech aero engines and motor cars
<i>Energy & Climate Change</i>	Green energy and supporting the new green industries of the future

www.burnleylibdems.org.uk

“We lead the world in developing medical science and I think we should continue to do that.”

Nicola Blackwood

Oxford West and Abingdon (Con)
Home Affairs Select Committee



Background	Parliamentary researcher Charity advisor (Zimbabwe A National Emergency)
Constituency science	Oxford Biomedical Research Centre
Personal interest/goal	Policy to support R&D Increasing the numbers of science and technology students and science education Support for able students from disadvantaged backgrounds Long term strategic funding for pure research
Priorities for the Science & Innovation Minister	A joined up, long term strategy for the future of UK science and innovation that includes: <ul style="list-style-type: none">- Science education and apprenticeships- The gender imbalance in engineering- A framework to support commercialisation of R&D, based on Dyson report recommendations
Priorities for the Select Committees:	
<i>Science & Technology</i>	Expansion of the UK's small but successful aerospace sector Reducing the 'brain drain'
<i>BIS</i>	Identify the barriers to translating innovation into stable start ups, such as the bureaucracy of patents and complexity of setting up a new business Investigate how many British ideas are developed overseas and find out why
<i>Energy & Climate Change</i>	Tidal power

www.nicolablackwood.com

“Properly harnessed, tidal power could be a major answer to our energy problems. We should be urgently looking at ways in which the government can encourage research and development that will produce market ready tidal power as soon as possible.”

Robert Buckland

Swindon South (Con)

Justice Select Committee; Statutory Instruments Select Committee



Background	Criminal barrister (19 years)
Constituency science	Research Councils UK Science and Technology Facilities Council Biotechnology and Biological Sciences Research Council Natural Environment Research Council Engineering and Physical Sciences Research Council Science Museum
Personal interest/goal	Forensic science Science education Manufacturing and engineering To become aware of science issues, and then an advocate
Priorities for the Science & Innovation Minister	Ensuring that public science and research will advance British interest, jobs and the economy in the long term Ensuring public funded science is complementary/ in partnership with private funding Promoting the value of science and science education
Priorities for the Select Committees:	
<i>Science & Technology</i>	The future of UK forensic science
<i>BIS</i>	Improve the interface between public funded research and business
<i>Energy & Climate Change</i>	Investigating the details of the linkage to local government Energy planning issues — will a new nuclear power station be up and running in time meet the base-load crisis predicted for 2017?
Extra info	Pro-nuclear (especially fusion), but would rather it was privately funded Biofuels — concerned that land for food production is not lost to biofuel production

www.robertbuckland.co.uk

“I’d much rather see private money being invested in [nuclear power], but at the same time with base load problems coming up, with global oil issues, we’ve got to be seen to be getting on with it sooner rather than later. The government does have a role to play to ensure that nuclear power becomes cleaner and greener in as quick as time as possible.”

George Freeman

Mid Norfolk (Con)
Communities and Local Government Select Committee



Background	Medical biotech venturing: founding, financing, managing and advising spin outs and start ups (14 years)
Personal interest/goal	Exploiting science and innovation in the Norwich/Cambridge corridor to develop Mid Norfolk Pace of science vs pace of policy Need for politicians with science expertise
Priorities for the Science & Innovation Minister	Science education in schools and the end of the Science/Arts split so early in the curriculum Less public expenditure on 'Business Support' and more investment in core centres of real research excellence Evidence based policy and the importance of science in Government and Parliament
Priorities for the Select Committees:	
<i>Science & Technology</i>	A realistic and scientific assessment of where British science and competitive advantage stands in the world rankings Improve the interface between public funded research and business
<i>BIS</i>	A major reform of the way the Government supports commercialisation of science, shifting from government initiatives that 'push' innovation to incentives that encourage entrepreneurs and companies to 'pull' innovation
<i>Energy & Climate Change</i>	Stronger emphasis on: - The science of climate change instead of emotive policy making - The UK's ability and potential to pioneer innovative solutions

www.georgefreeman.co.uk

“The rate of scientific discovery will generate difficult ethical questions that Parliament will need to be ready to debate. Public trust in science depends in no small part on trust in Parliament’s ability to properly assess the costs, benefits and ethical/moral dimension of new technologies. The House of Lords has carried out this role with what I think most would agree has been great distinction over the last decades. The planned reforms need to provide for enough suitably qualified people to be able to continue this role.”

Lilian Greenwood

Nottingham South (Lab)
Transport Select Committee



Background	Consultancy (non-science; 5 years) Trade union representative (18 years)
Constituency science	BBSRC Sustainable Bioenergy Centre Centre for Plant Integrative Biology
Personal interest/goal	Impact of higher education and research funding cuts on science research
Priorities for the Science & Innovation Minister	Consulting with the science community on what support they need The effect of funding cuts and that impact agenda on the UK's development and its reputation for high-level research and innovation
Priorities for the Select Committees:	
<i>Science & Technology</i>	Mitigate the effect of higher education and research cuts on UK's research ability
<i>BIS</i>	A framework to help universities commercialise their research
<i>Energy & Climate Change</i>	Examine whether government plans are sufficient to Change achieve our targets and tackle climate change, and what the potential impact will be if we don't

<http://liliangreenwood.blogspot.com>

“I think you have always got to be prepared to vote against your party if you feel very strongly that your party has got it wrong. It does worry me if we take positions that seem to be in contradiction to what scientists are telling us.”

Dr Julian Huppert

Cambridge (LibDem)

Home Affairs Select Committee



Background	PhD in biochemistry Research scientist Member of the Institute of Physics
Constituency science	Cambridge and East Anglia Centre for Structural Biology BBSRC Sustainable Bioenergy Centre
Personal interest/goal	How we fund and further both pure and commercial science Move away from the impact agenda Science aspects of civil liberties, eg National DNA Database
Priorities for the Science & Innovation Minister	Ensure that science and the scientific method is embedded within all forms of policy making Reducing the bureaucracy of the grant process Supporting pure science
Priorities for the Select Committees:	
<i>Science & Technology</i>	Applying the scientific method, ie the Evidence Checks used by the previous Committee
<i>BIS</i>	Policy based on recommendations in Dyson Review and Hauser Review to identify who/what gives economic benefit
<i>Energy & Climate Change</i>	Start quantifying the issue so that we can assess finances, timelines and public acceptability, ie 'if we need to generate X amount of energy, which are possible sources?' Get the public more informed and engaged

www.julianhuppert.org.uk

"I don't like the impact agenda because it's a well-known fact that if you measure particular things people will adjust what they do to fit the measurements. I think that a lot of good pure, science doesn't have impact that one can necessarily predict at the beginning."

"There is real risk that science is only applied to subjects of interest to the Science Minister, whereas it's also very important in climate change, home affairs, justice — the scientific method is broader than just pure science."

David Mowat

Warrington South (Con)
Scottish Affairs Select Committee



Background	Engineering graduate Scientific consultancy (25 years at Accenture)
Constituency science	Daresbury Laboratory
Personal interest/goal	Lack of science and engineering graduates
Priorities for the Science & Innovation Minister	Increasing the numbers of science and engineering grads Improving politicians' understanding of climate change so they can make informed decisions Developing new UK science hubs
Priorities for the Select Committees:	
<i>Science & Technology</i>	Supporting UK science hubs
<i>BIS</i>	Raising the status of engineering
<i>Energy & Climate Change</i>	Increasing politicians' understanding of the science to ensure policy and budgets around the issue of climate change are sound
Extra info	Supportive of nuclear power

www.davidmowat.org

"I very much hope that the fact that the relevant Minister [Chris Huhne] is a sceptic on nuclear power is not an impediment. It is not a particularly impressive position on medium-term outlook for energy generation if our Plan B is to buy it from the French because they can build nuclear power stations when we can't. This is an example of an issue that has been left to lie because of a lack of engineering and scientific knowledge in this place."

"I am not sceptical on climate change, I am just not informed. I am not aware of people in the political arena who understand the science properly and can talk coherently about it. I think it is such an important issue, it should either define all that we do in politics, or we should be very careful about wasting money chasing things which aren't as big a problem as we think."

"I know of no other country where the status of engineering is lower than it is in Britain, and that causes less good people to do it and us to have a less vibrant innovation sector where a lot of good research could emerge."

Chinyelu (Chi) Onwurah

Newcastle General (Lab)

Select Committee for Business, Innovation and Skills



Background	Electrical engineering graduate (1987) Telecoms industry (23 years in the UK, France and Africa)
Personal interest/goal	Supporting spin outs and academic-industry knowledge transfer, particularly for renewable energy, carbon capture and storage, and age-friendly technologies Raising the status of engineering and technology Engineering and science that supports the economy and jobs
Priorities for the Science & Innovation Minister	Encouraging (and where necessary funding) R&D, including basic research KT from academia to industry Regulatory framework for public procurement — particularly for supporting emerging technology
Priorities for the Select Committees:	
<i>Science & Technology</i>	Translation of R&D into manufacturing business and jobs
<i>BIS</i>	Apprenticeships and support for business innovation
<i>Energy & Climate Change</i>	Renewables in the home (microgeneration) and reduction of domestic energy consumption to carbon neutral homes

<http://chionwurahmp.com>

“Impact has to be part of the funding equation, but there should also be a place for research and development where the impact is not one that we can measure.”

Rachel Reeves

Leeds West (Lab)

Select Committee for Business, Innovations and Skills



Background	Economics
Constituency science	North of England Structural Biology Centre
Personal interest/goal	Rebuilding and rebalancing the economy through high-tech manufacturing, science, pharmaceuticals, and green tech
Priorities for the Science & Innovation Minister	Vocational education and training in STEM subjects Preserving UK's leading role in renewable energy and the green technologies Ensuring the new economy is based less on financial engineering and more on real engineering and science
Priorities for the Select Committees:	
<i>Science & Technology</i>	Education
<i>BIS</i>	Engineering
<i>Energy & Climate Change</i>	Green tech

www.rachelreeves.net

“The biggest threat is that the £6 billion worth of cuts is putting universities and research funding at risk, as well as that of the green technologies, to the detriment of people and the economy as a whole.”

Alec Shelbrooke

Elmet and Rothwell (Con)



Background	Mechanical engineering graduate (1998) Engineering project manager, University of Leeds Project administrator for Nanofactory, an organisation that helps North East university spin outs (11 years)
Personal interest/goal	Research into how to enable universities to commercialise and innovate to help fund their further research
Priorities for the Science & Innovation Minister	Encourage more STEM undergraduates Science education in schools High tech innovation/products we can export — in particular nanotechnology and renewable energy (both macro- and microgeneration)
Priorities for the Select Committees:	
<i>Science & Technology</i>	Enabling universities to benefit commercially from their research
<i>BIS</i>	Increasing the numbers of STEM undergraduates Supporting scientific and engineering entrepreneurs to start up in the UK and stay in the UK
<i>Energy & Climate Change</i>	Developing and exporting our renewable energy technologies Solar panels for new-build houses

www.elmetandrothwell.com

“One of universities’ biggest problems is that their charity status restricts them from making a profit and taking full advantage of their intellectual property.”

“We need to start encouraging new-build houses to have solar slates. While the technology moves on every five years and these would soon be out of date, it is at least a start and feeds into the system. There is a lot of new acreage that could be provided with these inoffensive solar panels.”