

CaSE News

The Quarterly Science and Engineering Policy Update

Number 66 January 2011

The **Campaign for Science & Engineering** is the leading policy advocate for science and engineering in the UK.

CaSE News updates our members, policy-makers and opinion formers on our latest activities, campaigns and current developments in science and engineering policy.

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Twenty Five Years On



SAVE BRITISH SCIENCE

Basic science has given us radio and television, plastics, computers, penicillin, X-rays, transistors and microchips, lasers, nuclear power, body-scanners, the genetic code, All modern technology is based on discoveries made by scientists seeking an understanding of how the world works, what it is made of and what forces shape its behaviour. Basic science is uncovering the secrets of life, gaining knowledge that defeats disease, inventing new materials, understanding the Earth and its environment, looking deeper into the nature of matter and reaching towards an understanding of the Universe.

Today's basic research enlarges our conceptions of the world and our place in it and underlies tomorrow's technology, the basis of future prosperity and employment.

Yet British science is in crisis: opportunities are missed, scientists emigrate, whole areas of research are in jeopardy. The Government's support for research is declining, falling further behind that of our main industrial competitors in Europe whose policy is to increase investment in scientific research.

There is no excuse: rescue requires a rise in expenditure of only about one percent of the Government's annual revenue from North Sea oil. We can and must afford basic research, Britain's investment for the future.

ASK YOUR MEMBER OF PARLIAMENT
TO HELP SAVE BRITISH SCIENCE
BEFORE IT IS TOO LATE

For information write to:

1,500 scientists
have paid for this advertisement

As published in *The Times*, 13th January 1986.

Twenty five years ago, 1,500 scientists banded together to pay for an advert in *The Times*. It called on Mrs Thatcher to Save British Science, and led to the foundation of a new breed of campaigning group. Today, CaSE carries that legacy – but we all have much to thank the original rabble rousers for.

It's difficult to imagine trying to organise a paid-for petition from 1,500 professors today. So it speaks volumes about the passion that was felt in 1986, before the advent of emails and the internet, that the feat was achieved in just a couple of months.

Scientists showed that they would not be ignored, and that scientific progress could not be forsaken by politicians. They wrote that "British science is in crisis: opportunities are missed, scientists emigrate, whole areas of research are in jeopardy".

Some of the challenges we face today are the same; others are different. We're now as worried about attracting foreign researchers as losing our own, for instance. But as we look ahead to the next twenty five years of campaigning for science and engineering, it's worth looking back to remember how we got here.

Imran Khan

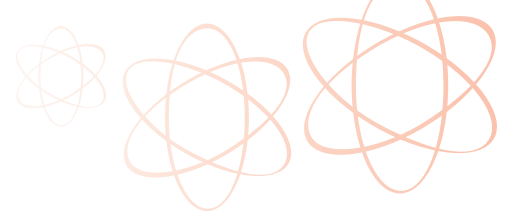
CaSE is trying to reduce costs and help the environment. If you would prefer to receive an electronic copy of CaSE News in the future, please email:

nickh@sciencecampaign.org.uk

Campaign for
Science &
Engineering
in the UK



www.sciencecampaign.org.uk
blog.sciencecampaign.org.uk



The Next 25 Years

One of the quirks of working for a campaign group is that you are gunning for your own demise. CaSE's mission is to lobby for a political environment where we are no longer needed.

We want a UK where it would sound bizarre not to fund more and more world-class research; where science and engineering drive a new high-skills economy and society; where everyone has an equal opportunity to study and work in these subjects; and where science and evidence are seen as integral to government.

I suspect we'll be here for some time yet. Much of our energy goes into trying to desperately salvage the status quo, rather than demanding progress. When policies being mooted by politicians include scaling back funding, creating barriers for top researchers trying to come to the UK, and making it easier to ignore evidence in policy-making, it makes it difficult for us to go on the front foot.

But as we look ahead to the next twenty five years of CaSE it's important to keep hold of that vision. What exactly do we want science and engineering policy to look like in 2036, and how are we going to get there?

Some things are obvious. It is unacceptable that the UK spends just 1.8% of its economy on research and development, and we lag far behind nations such as Japan, Germany, France, and the USA. It is wrong that a pupil's opportunity to study individual sciences, taught by a specialist teacher, depends on the type of school they attend.

It is absurd that science and engineering – one of the most important elements of the nation's culture, society, and economy – barely get an airing during a General Election. And it is embarrassing that careers in research still seem to exclude certain elements of society – women, disabled people, and certain ethnic and socio-economic groups.

These are all things which we believe can be fixed; targets which the science and engineering community and government can aim for. But it is also clear that the campaigns which are most successful are those where everyone across the community works together – witness the campaigns on the Spending Review, and the migration cap.

With a secretariat of just two full-time and two part-time staff, CaSE depends heavily on our ability to work with partners in science and engineering – we simply wouldn't be able to get anything done otherwise. So while we continue to seek more supporters to fund our work, building collaborations will have to remain a priority.

In this special newsletter issue, we reflect on our first quarter-century and look ahead to our second. If government really does want to see the back of CaSE, then my advice to them would be to start planning on similar timescales. Investing in science and engineering is a long-game, something politicians are inherently poor at. The challenge for all of us is to convince them, as Save British Science did in 1986, that the price of inaction is simply too high.

Imran Khan

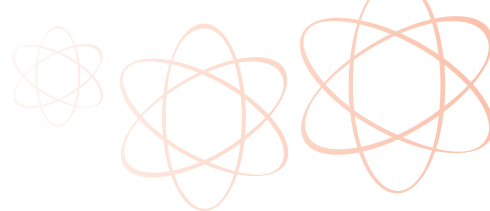
Media Highlights

"It's a step in the right direction that the Government is listening to our concerns, but the detail around this - which we haven't yet seen - will be incredibly important. We need to attract scientists at every stage of the career ladder, not just the stars"
Imran Khan, Director of CaSE, on changes to the immigration system, *The Times*, 8/11/10

"It is so disappointing that, after finally seeing real improvements in secondary science, engineering and maths education, we risk seeing the clock turned back, wasting many years of effort and investment,"
Hilary Leever, Assistant Director of CaSE, commenting on changes to specialist schools, *Financial Times*, 12/11/10

"These changes are freeing the restraints on all future Governments and future Home Office ministers not to have scientific advisers on the committee... Surely the Minister wouldn't want any future government to establish a committee with no scientists. If so, why not have a law that insists on a minimum number?"
Imran Khan on proposed reforms to the Advisory Council on the Misuse of Drugs, *BBC Radio 4*, 9/12/10

"What's worrying is that a lot of this capital spending is actually maintenance and other long-term commitments, which can't simply be stopped."
Imran Khan on cuts to capital spending, *The Daily Mirror*, 21/12/10



CaSE Campaigns...

Keeping Science Oversight in BIS

CaSE welcomed the appointment of Prof Adrian Smith as the new Director General for Knowledge and Innovation at the Department for Business, Innovation and Skills (BIS). The appointment came after concern that, for the first time in decades, the position responsible for overseeing government activity on science might go to someone with no direct experience of science and engineering. CaSE wrote to both the House of Commons and House of Lords Science & Technology Select Committees on the issue, as well as key MPs. CaSE also spoke to the media and helped to get a question put to the Minister on the matter during BIS parliamentary questions.

Education Reforms

A National Audit Office report published last month noted the many recent improvements in science and maths secondary education. However, certain problems persist, like shortages of specialist mathematics, physics, chemistry, and computing teachers. Furthermore, as outlined in a letter to the *Times Educational Supplement* and comments in the *Financial Times*, CaSE is seriously concerned that new government policies could undo the progress that has been made. First, more and more maintained schools will no longer have to follow the National Curriculum in science and mathematics. Second, the 1,300 schools specialised in science, technology, engineering, or maths will no longer be required to offer separate GCSEs in biology, chemistry and physics - and these schools have been responsible for most recent improvements in this area.

CaSE held a roundtable meeting, kindly hosted by the Wellcome Trust, to discuss secondary education, including issues arising from the November Education White Paper and how to act on them. The CaSE blog will be updating on progress in this area and has an introductory post from CaSE, and pieces from the Institute of Physics (IOP) and BCS, The Chartered Institute for IT.

Procuring Interns

We would like to thank Andrea Marchesetti for his help in November and December of last year as a CaSE intern. He worked on a number of projects and led on the response that CaSE submitted to the House of Lords Science and Technology Select Committee inquiry into public procurement as a tool to stimulate innovation.

Science in Scotland

CaSE was one of the sponsors at *Science and the Parliament 2010* organised by the Royal Society of Chemistry. Whilst he was there CaSE Director, Imran Khan, spoke to the Leader of the Scottish Labour Party Iain Gray about the importance of science and engineering.

Disability & Diversity

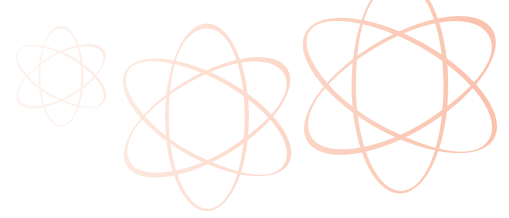
CaSE's Assistant Director, Hilary Leever, spoke at a conference on *Barriers to Disabled Students in Science and Engineering*, organised by the IOP and sponsored by the Royal Academy of Engineering. She talked about CaSE's work in this area, and attempts to get recommendations from the 2008 Delivering Diversity report implemented - one of these was to build a web-based resource. Peter Main, from the IOP, said that he would be happy for the IOP to lead in developing a collaborative web resource and CaSE will be meeting with the IOP and other organisations next month to start this process. Imran Khan also recently wrote for the Imperial College London newspaper and the CaSE blog on the serious institutional problems among science and engineering when it comes to diversity.

Other Work

- Imran Khan spoke on *Science and Politics; Making the Connection* to the UK Deans of Science.
- Imran Khan was a guest speaker at the *Scientists for Labour* Annual General Meeting.
- CaSE met with officials from the BIS, the Department for Education and the UK Border Agency (see page 5).
- Imran Khan attended a two day conference at Chatham House entitled *Is investment in science the path to future economic prosperity?*
- CaSE met with the Labour Shadow Universities and Science Minister Gareth Thomas and continues to work with Chi Onwurah Labour Shadow Minister for Innovation and Science Research.
- CaSE met with Alok Sharma Parliamentary Private Secretary to Financial Secretary to the Treasury.
- CaSE met with staff from the House of Commons Science & Technology Select Committee.
- Imran Khan spoke at a Young Fabians event entitled *Protected or pilfered? What the CSR means for R&D and science in the UK.*

New Organisational Members

We are delighted to welcome the union Prospect as a new organisational member.



Research Funding

Allocating the Science Budget

On December 20th the Government detailed its plans for research funding in the Science Budget Allocations. The total of resource funding had been set in the October Spending Review, frozen in cash terms at £4.6bn a year, or totalling £18.3bn over four years. We now know how this money will be divided up.

The pain of what will be real terms cuts of about 10% will be fairly evenly divided across the councils, although the Medical Research Council (MRC) has been relatively well supported. The funding streams of the Science and Technology Facilities Council have been separated out to make sure that funding for studentships and grants would not be squeezed out by other commitments. Diamond will operate to its full capacity, although funding for other large facilities, like ISIS and the Central Laser Facility, will be reduced.

The National Academies received a similar share of the cuts as the Research Councils, but the funding for other programmes run by the Department of Business, Innovation and Skills will be halved. Shockingly, this cut includes stopping funding for the UK Resource Centre for Women in SET, due for renewal in April 2011. There is no convincing plan to take forward its work in other ways and the cut was made without consultation. CaSE has already spoken with civil servants and politicians about the importance of funding a proper programme for diversity and will be working on this issue in the future.

Cutting the Capital

As had been anticipated, dramatic cuts to capital spending on research were included in the allocations. Capital spending is not just new builds but includes maintenance, infrastructure support, investing in personnel, and other long-term commitments.

A flat cash settlement would have given a total capital spend of £3.5bn over four years, instead it will be £1.9bn. However, a £220m commitment from the MRC for its part in the collaborative UK Centre for Medical Research Innovation (UKCMRI) will now be funded from the Department for Health (DH). Once that is included in the settlement, the Research Councils get a 35% capital spending cut over four years. The brunt of the capital cuts hit higher education where spending will fall from £357m in 2010-11 to an average spend of £166m for each of the next four years. This cut, alongside massive changes in teaching funding, pose a very real threat to our universities.

The allocation document notes that only the first year of the capital allocation is firm while the rest are indicative - we can only hope that there is scope for increased spending in later years and will be certainly campaigning for that. If not, Research Councils may be forced to supplement their capital budgets from other sources such as their resource spending.

Over both capital and resource, about 5% less cash will be spent in 2014-15 than 2010-11, but inflation will make this a bigger cut in real terms. On a more positive note, December also saw Camden Council finally approving planning for UKCMRI.

Clarifying the Haldane Principle

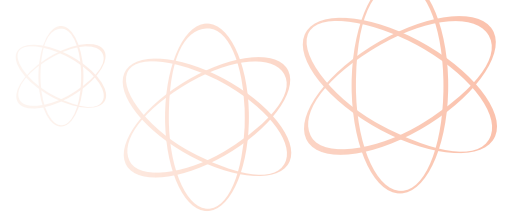
The Government also issued a statement intended to clarify its interpretation and application of the Haldane Principle. It stated that Ministers should not decide which individual projects or researchers should be funded but do decide on the distribution of funding between the Research Councils, the National Academies and higher education research funding. Prioritisation of an individual Research Council's spending within its allocation is not a decision for Ministers, but Ministers can ask councils to consider how they can contribute to strategic priorities. Ministers have a legitimate role in decisions that involve long-term and large-scale commitments of national significance including the construction of large research facilities, where Ministers have to approve business cases, and involvement in international research treaties. However, any Research Councils funding for these must support excellence.

Departmental Research

The news has been brighter for departmental research spending. Government departments invest in research to secure the evidence-base for their work, to develop new policies and technologies and to evaluate those in place. R&D budgets, totalling £3.4bn in 2007/08, might have been vulnerable to cuts because they do not directly deliver 'front-line' services.

In October, a real terms increase was announced for the Department for Health R&D budget, currently worth around £700m. Since then its been announced that the Ministry of Defence science and technology budget will receive a cash increase over the next four years. The MOD is one of the nation's biggest research funding bodies, at over £2bn a year. A rise in cash terms means that, at the very worst, the budget will receive an 8% cut in real terms over four years.

Hilary Leever



Campaigning for International Excellence - Migrant Cap Update

UK science and engineering rely heavily on attracting the best research talent from around the world. Around one in seven 'STEM' academics in UK universities hails from outside the EU, while industry consistently cites access to the global workforce as a reason for investing here.

We were therefore quick to raise the alarm in May, when the Queen announced the Government's intention to limit the number of non-EU migrants entering the UK. The impact could have been catastrophic. Research is a global game, and by cutting itself off from scientists and engineers in the rest of the world the UK would have severely curtailed its ability to keep up with the latest research.

In parallel to our work on the Spending Review, CaSE coordinated a campaign against the plans. Highlights included a splash on *The Times* front page the day after David Cameron's speech at Conservative Party conference, an interview on Al Jazeera TV, and top-level meetings with the UK Border Agency (UKBA). Organisations as disparate as the Institution of Chemical Engineers and Cancer Research UK (though both are CaSE members) joined us in vocal protests.

And it seems to have paid off. On 5th November 2010, the Home Secretary announced that she believed the UK could *"increase the number of ... research scientists at the same time as we reduce the total number of people coming to Britain"*. This could well be achieved through the latest changes that give a premium to applicants with PhD-level job offers, and having an extra category for a thousand 'exceptionally talented' individuals.

We still believe that capping non-EU migrants is a flawed plan to begin with – the improvements that have been made are still within the context of a problem the Government has created for itself. The details of current proposals are available from the CaSE office or website, but they are still evolving and have to be regularly updated. We are engaging closely with partners at the UK Border Agency and are optimistic that new legislation will cause minimal harm. It is even possible that the new exceptional talent route could work as an attractor for the best international talent. CaSE is now looking at proposals for student visas for the UKBA consultation that shuts at the end of January and comes at a time that is already very challenging for universities.

The Independence of Government's Science Advice

In late 2009, a government minister sacked the independent Chair of the Advisory Council on the Misuse of Drugs (ACMD). Although we've had a change of government, the resulting threat to academic and scientific independence is still of great concern to the science community.

Although partially resolved by the incorporation of the new Principles for the Treatment of Independent Scientific Advice into the Ministerial Code, concerns remain. Those concerns were exacerbated by two developments in late 2010.

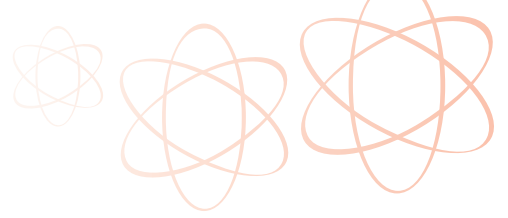
The first was part of the 'bonfire of the quangos', (or 'reform of non-departmental public bodies'). Many quangos are actually Scientific Advisory Committees (SACs), such as the ACMD or the Radioactive Waste Management Advisory Committee.

Many SACs survived the cull, but a significant number are being 'reconstituted as committees of experts', often within government departments. There are extensive measures in place to make sure that SACs are independent – will the 'reconstituted' committees have the same safeguards?

What is especially concerning is that justifications including 'independence' and 'technical expertise' were given for the retention of some SACs. Does this mean that those that are instead being reconstituted will not be required to be as independent or technically competent? There is the danger of creating a two-tier system of SACs, which would be bad for quality of expert advice and bad for public confidence.

The second was the proposed scrapping of the legal requirement for the ACMD to have scientists as part of its membership, replacing it with less stringent guidelines. While the ACMD may indeed need reform, there are few areas of government where the scientific evidence has created as much tension with political rhetoric as in drug policy. Past events have shown us that the ACMD needs as much protection from political interference as we can afford it, and CaSE has argued that some kind of legal requirement for scientific expertise on the council must remain.

Imran Khan



The Need for Continued Campaigning

Those of us who founded Save British Science a quarter of a century ago naturally had a strong sense of "here we go again" as the threatened 25% cut circulated around the Royal Festival Hall during the magnificent 350th anniversary celebrations of The Royal Society on 23rd June. I lost count of the number of Fellows of the Royal Society and guests who came up to me to ask whether CaSE was going to change its name back to the famous and challenging slogan that was used in *The Times* on the 13th January 1986.

My feelings were dominated by the incongruity of such a splendid celebration while we faced decimation, or worse, of the scientific tradition that has made the UK so attractive and successful in science and engineering. Were we fiddling while Rome burnt? Would it have been better to wander around the Festival Hall with a petition for everyone to sign? I have never felt so much like a ghost at a sumptuous dinner party! The feeling was reinforced as I was taken to dinner at the Garrick Club - where we had entertained and lobbied ministers and opposition leaders so often during the 1980s.

Could the science community have the stomach for yet another campaign? Indeed, should CaSE change its name back? Just weeks later I read somewhere in the national press "No more Mr Nice Guy!" It was hard to believe. Jenny Rohn had launched Science is Vital. Needless to say, I soon signed up, and sent a message of encouragement to her. I also sent a message to the website saying that "we [SBS] had to work hard to help restore the science and engineering investment to begin to approach the levels in other leading nations. Even the splendid progress made over the decade or so when David Sainsbury was science minister was not enough to actually reach those levels. We always argued that such a catch-up needed to be done gradually and carefully. To see that careful and convincing work put at risk is not just painful, it would be short-sighted from a national point of view."

So, we live to see another day. But what are the messages from this experience? First, that the world has really changed. It was a joy to read the growing and impressive list of organisations supporting the campaign. Even more so to see the number of signatures rapidly rise to more than 35,000. In 1985, we struggled to obtain 1,500. But that was all done

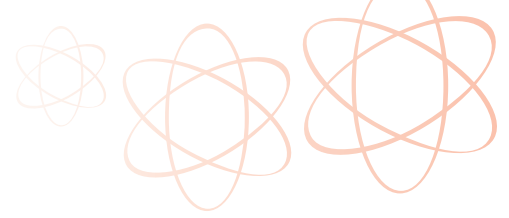


by laborious telephone calls, and against a fearful background expressed by many leaders of the science and engineering community at that time that we were "rocking the boat". More than that number actually attended the Whitehall rally of Science is Vital on 9th October. The idea that a previous head of the Medical Research Council should have been a major speaker was unthinkable in the 1980s.

Second, the national press has changed. It was strongly in support of Science is Vital. While we did convince the specialist science correspondents back in 1986, we struggled to reach beyond to the opinion formers and leader writers. I put that change down to the careful work that CaSE has done over the years. Jenny's initiative was brilliant - and I must admit also that it was much more so than just changing the name of CaSE would have been - but it built on the research and lobbying that CaSE has done over the years. The combination of that research and the grassroots character of Science is Vital was powerful.

Finally, if the science and engineering community needed a "wake up" signal, this was it. We need CaSE to be strong. We need its research and lobbying skills. I urge those who care about the future of science and engineering in the UK to become members. Don't just sign up to a rally, sign up to the organisation that will have to follow through in the years to come to ensure that we move on from this alarming threat to return, as we did during the Sainsbury period of the science ministry, to steadily working with the government to make the UK the most innovative and creative base for research and industry in the world.

Professor Denis Noble CBE FRS is Emeritus Professor of Cardiovascular Physiology at the University of Oxford and was one of the founders of Save British Science.



Shaping & Enabling: CaSE's Evolving Membership

'We're the small organisation with the big voice, punching well above our weight!' is one way we describe CaSE. We have come a long way since our foundation a quarter of a century ago, and much of this is due to our highly engaged members. 1986 was a critical time for science and engineering in the UK, with the cuts to funding by government amounting to absolute carnage. Save British Science (SBS) emerged as a grass-roots campaigning organisation with around 1,500 individuals as members, most of whom still contribute their £25 per year.

The gloves-off approach by SBS struck a chord with many and, gradually, organisations began to put their official support, and money, behind us. Nearly all of our first organisational members were universities and these now make up almost half of our 90 (and counting!) official supporters.

Our ability to make sure politicians and the media understand the complex interdependences between education, research, industry and the economy, has led to a steady growth in our membership. As well as our historic strength in academia, we're now supported by nearly 30 learned and professional societies, over two dozen of the UK's top science and engineering companies, and four research charities. There aren't many bodies that, like CaSE, can count the National Farmers Union, Cancer Research UK, and Rolls Royce as its members. But what they all have in common is their concern for the health of the complex ecosystem of UK science and engineering at the 'big picture' level, and how government policy can enable the sector to deliver the best possible economic, societal and cultural benefits to the UK.

However, we are not an agency, and we do not lobby on individual 'client' policy issues. We focus our activity at the highest level, where issues affect everyone - whether it's the Spending Review, the cap on non-EU migrants, or education reforms.

CaSE is open and inclusive. We do not limit our activities to those issues affecting only our existing members. This stance has also ensured continued growth of the organisation - to the point where we've doubled our staff time in four years, and can now afford the equivalent of three full-time staff! Our members subscribe within a range of £500-£6,000, with the largest organisations at the top, and the smallest at the bottom. It is important to us that

everyone subscribes at a rate they consider to be sustainable in the long-term. We thrive on each of these relationships, and they become increasingly productive over time.

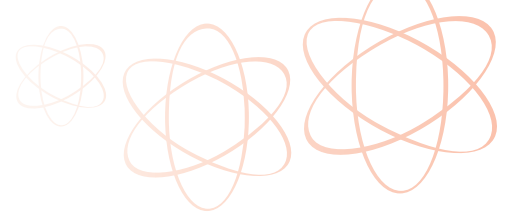
This approach works. Many of our members have been with us since the 1990s and. Despite the recession, we lost only two members last year - and gained another ten. Joining CaSE as an organisation is simple. All it requires is an agreement to join, followed by an invoice and a payment. Any organisation that has an interest in the UK having a healthy science and engineering base can join and, once on board, we then work with them to ensure the relevant people are plugged into our activities. Each member has an open invitation to input, meet with us, talk to us, and come to our events.

The diversity of our membership is widening, and we now have more industrial and corporate members than ever before. It is this combination of industry and academia that gives CaSE some of its unique selling point. Our rolling consultation with our members give us the best input from our supporters, while allowing us to act at short notice on topical issues. For example, a letter from us to *The Times* last year was signed by an impressive list of industry figures (see page 10). It was arranged at breakneck speed and directly led to a roundtable meeting with the Science Minister.

The two largest sector investors in corporate R&D in the UK are big pharma and aerospace & defence, and we have both of these well represented at CaSE. But we still have room to grow, and are actively pushing to have more members in areas such as IT, electronics, and Earth resources.

Both our size and our influence depend upon our members. We highly value the information that members share with us and also their appreciation of our frequent need to make quick responses and to focus on the big arguments that work across the sector. We try to tailor the nature of our relationship with each member so that every one has the level of contact that works best. I hope that you find we always welcome your input and we sincerely thank you all for your continued support.

Dave Hawksett has been with CaSE since 2007 and is its part-time Member Liaison.



From Save British Science to CaSE

About a week before I became Director of Save British Science, I sat in the gallery of the House of Commons and watched a distinguished MP stand up and say that the organisation was no longer needed. The Spending Review promised new resources for British science, reversing the long trend of cuts to the science budget. It would have been easy to wonder whether I had made a terrible mistake in joining the society just as its purpose was dissolved.

But we knew that new money was only a start in guaranteeing that the UK entered the twenty-first century with a secure place in the fiercely competitive global scientific league table. Funding increases would need to be maintained for well over a decade just to get the country back to its former real-terms levels of investment, and other countries were not standing still - not just the industrialised world, but the emerging economies of the far east were planning to pour money into science to ensure they would prosper in years to come.

Moreover, extra money was necessary but far from sufficient for future scientific success. The education system needed major improvements, government departments needed to become much more savvy in the way they used science, the jobs that depended on high-technology start-ups would require fresh ways of applying whatever money was available, global science-based corporations needed reasons to come to the UK and to stay, and the universities needed laboratories that were not dilapidated.

So during the decade that followed, we campaigned on these issues and made significant progress. Departments of State now all have chief scientists (except of course the one that arguably needs one most, the Treasury), just about every university has splendid new buildings, successful spin-out companies abound, and some of the world's biggest corporations choose Britain as the best place to do their research.

And it was these trends that caused us to start operating under a new name - Campaign for Science and Engineering (CaSE). We could hardly call for science to be 'saved' when so much was going so well.

But not everything is perfect - the schools system still has far too few specialist science teachers, the Treasury still resists the idea that it needs a science adviser, and the pace with which the much of the rest of the world has competed by investing in science has exceeded our expectations.

I wrote when I joined the organisation that if there was one thing I really wanted to see changed, it was the tendency for many of the best young researchers to leave the UK for better jobs, and more especially for better funding opportunities, overseas. A whole raft of initiatives has meant that in recent years, we were able to stop banging on about the 'brain drain', a topic that exercised us greatly ten years ago.

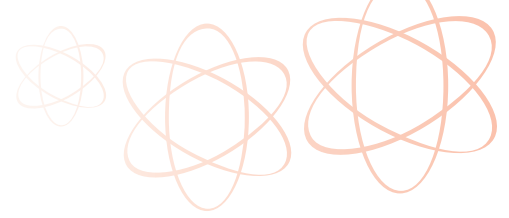
The test of current policies will be whether that change has become embedded. Will bright young researchers want to stay in the UK, with science budgets level in cash terms, while the USA, China and the others are forging ahead? Will the new immigration rules reduce the attractiveness of the UK as a destination for the established scientists with the finest minds? Only time will tell.

When we adopted the new name, we did not change the official title of the society - it remains Save British Science; the members voted for a change to the constitution that allows the organisation to operate as CaSE. If things were to get bad again, the call to Save British Science could be heard again.

The fact that in the recent Spending Review science was cut a great deal less than other parts of public finance suggests that this will not be necessary. It is mark of how strong CaSE is that most people believe that its continued efforts on behalf of scientists at the workbench contributed significantly to this relatively benign outcome for science.

Dr Peter Cotgreave was Director of SBS then CaSE from 1998 to 2007. He is now Director of Public Affairs at the Royal Society.





What's in a Name?

Following the demise of the Department for Innovation, Universities and Skills and the Innovation, Universities, Science and Skills (IUSS) Select Committee, there was much rejoicing and relief that the voice for science and engineering would live on through the re-creation of the Science and Technology Select Committee. This followed shortly after the publication of the IUSS Committee's inquiry into engineering and raised the obvious question: why not use the opportunity to create the Science, Engineering and Technology Committee? In the IUSS Committee's engineering report, they had called for a Government Chief Engineer, to sit alongside the Chief Scientific Advisor, but this was quickly rebuffed by the government even whilst they agreed "engineering advice is key to good policy and delivery in a huge range of areas from tidal power generation to medicine".

"The engineering profession therefore has a major challenge to overcome if it is to get its voice heard and its contribution to society recognised."

So are engineering and science the same thing? When discussing engineering issues, does it matter that politicians talk about science policy and rarely mention engineering? These questions have on occasion caused friction between the professions. Some would say that there is one scientific continuum from principle to application. Others point to a difference in focus: scientists enquire, engineers create, or as Albert Einstein put it, "Scientists investigate that which already is; Engineers create that which has never been". What is clear is that scientific principles are at the heart of both and that engineers and scientists understand where each other is coming from.

Anecdotally the difference is clear in the public's imagination: scientists wear white lab coats and are clever, while engineers wear blue boiler suits and fix things. A recent *EngineeringUK* report showed that whilst people are positive about both science and engineering, only 21% of those surveyed were confident they knew what engineers did. This is perhaps not surprising since science is taught in schools as part of the curriculum, while engineering is rarely offered as an option (although "design and technology" is the most popular non compulsory

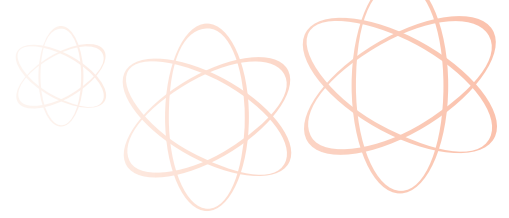
subject). The engineering profession therefore has a major challenge to overcome if it is to get its voice heard and its contribution to society recognised. This can only be achieved by raising the profile and understanding of engineering at all levels, from primary school to Parliament. It cannot be achieved by remaining hidden under the blanket of science.

To illustrate the problem, the term "science" was used 26 times in the election manifestoes of the three main parties, whereas "engineering" was used only 4 times and even then mostly when defining STEM education ("science, technology, engineering and mathematics"). The Coalition Programme for Government, which outlines the plans of the new government, only mentions "science" twice but fails to mention "engineering" at all. It is only when you get to more specific documents, such as the Dyson review *Ingenious Britain*, that you get a more even recognition (science 123, engineering 155).

That is not to say that the politicians are uninterested in engineering issues. The Coalition Programme for Government outlines many political aspirations that can only be achieved by engineers and through engineering, but the connection between the ambitions and engineering is not clearly identified. The engineering profession has been working hard to create a single voice under the banner of *Engineering the Future*. It is now time for the profession to forge the link in the minds of policy makers between their policy ambitions and what is possible in engineering terms.

Five years ago CaSE made the transition from Save British Science to the Campaign for Science and Engineering. The distinctions between science and engineering have still to be made in the public consciousness. Science is vital but engineering is essential.

Paul Davies is Head of Policy at the Institution of Engineering & Technology. The IET is a CaSE member and is kindly hosting CaSE's 25th Anniversary celebrations.



Science Policy in the Media

For much of the past 18 months, the Campaign for Science and Engineering was regularly asked the same question. It might have been only a few years since the lobby group changed its name from Save British Science, which had started to sound a little odd as Research Council budgets were being doubled. But was it time to change it back?

It is easy to see why such a move might have been worth considering, for if the future of British science had looked reasonably secure when CaSE rebranded itself, at least four significant new threats had recently presented themselves. First, there was the crisis over scientific advice to government, provoked by Alan Johnson's decision to sack Professor David Nutt as chairman of the Advisory Council on the Misuse of Drugs, without reference to either the Science Minister or the Chief Scientific Adviser. Then there was the spate of libel actions brought against scientists and science writers, most prominently the cases against Peter Wilmhurst and Simon Singh.

The deficit brought on by the financial collapse meant that significant public spending cuts were expected after the general election, regardless of its outcome, and none of the three parties was prepared to guarantee the science budget. On top of that, the favourites to win were the Conservatives, who were pledged to introduce an immigration cap that could prove profoundly damaging to the interests of research.

Perhaps British science still needed saving after all. None of these threats has been eliminated entirely. But to different degrees, all now look a little less severe than they once did, in part because of CaSE's activities.

Together with allied groups such as *Sense About Science*, CaSE played an important role in leading the scientific community's response to the Nutt affair and the libel reform campaign, with tangible results in each instance. A set of principles guaranteeing the independence of scientific advisers has now been incorporated into the ministerial code, and though somewhat weaker than might have been hoped for, these should help to prevent future ministers from acting like Mr Johnson. All three main parties committed themselves to reforming the libel laws in their manifestoes, and a bill is expected next year.

On funding and the immigration cap, CaSE led the way to great effect. In the months ahead of the

Spending Review, it was instrumental in marshalling the arguments that transformed a proposed 25% cash cut for science into a flat cash settlement.

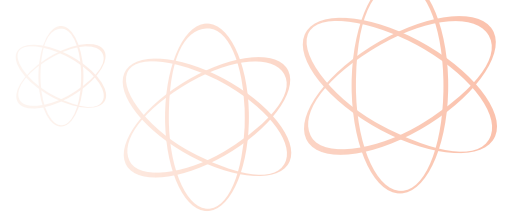
Senior government figures have told me that a letter to *The Times* signed by several business leaders, organised by CaSE, was extremely helpful to David Willetts and Vince Cable as they argued for science funding with the Treasury. This was followed by the Science is Vital campaign, which made it clear to ministers that a substantial constituency would be watching the science settlement closely the next time they cast their votes. CaSE and Science is Vital kept the issue high on the media agenda, particularly in *The Times* and *The Guardian*, which both ran supportive leaders. The outcome of the Spending Review was not ideal – flat cash still means a real terms cut of about 10% – but it was considerably better than might have been expected.

On immigration, CaSE's efforts again seem to have had a significant influence. Particularly important was the letter to *The Times* from eight Nobel prize-winners, including the two new Russian-born laureates, Andre Geim and Konstantin Novoselov, published on October 7. It thrust the damaging effects of the cap on science onto the front pages, forcing ministers to think hard about how they might be mitigated.

This battle is not yet won: we await the UK Border Agency's announcement next month about how the new points system for skilled migrants will operate. But there are already signs that the lobbying is having a beneficial effect. Rigid quotas imposed on each university under the interim cap are being abolished. The Home Office has accepted that the points required for entry cannot be based chiefly on salary, because low-paid scientists will suffer. And a new visa category for exceptional talent has been introduced.

British science may not quite need saving any more, but what all these issues highlight is the continued need for the community of those who care about it to remain politically vigilant and active. They also show that well-directed lobbying of the sort CaSE has led can have considerable effects.

Mark Henderson is Science Editor of The Times, and author of '50 Genetics Ideas You Really Need to Know'.



Looking Forward to the Long-term

A quarter of a century. It's a handy period of time for evaluating progress – including in research. There are numerous examples showing that it can take decades to tap into the potential of ground-breaking discoveries. For instance the Human Genome Project is only just beginning to bear real fruit, a decade after completion, and we're starting to glimpse the extraordinary potential it has for the long-term.

Science and engineering build upon the findings of all prior research. Lengthy experimental procedures and technological refinements have to be undertaken before work can have its full impact on the economy and prosperity of the country. An analysis of over 100 UK case studies by the Russell group found that it took an average of nine years to get from an initial discovery to a measurable impact (e.g., commercial investment in a spin-out company). It's been estimated to take around 18 years for investment in basic pharmaceutical research to yield new product approval in the US.

Political versus Research Timescales

The trouble is that politics tends to work on five-year cycles. It might be tempting to accept that won't change – but such defeatism would have a huge cost. Politicians, as a group, must be forced to extend their horizons beyond the next election.

The coalition Government is well aware of the need for a long-term strategy for science and engineering. CaSE urged all of the parties to commit to producing one in the run-up to the election last year. At the same time, the Royal Society's *Scientific Century* asked politicians to outline spending plans for the next fifteen years to provide "a clear, long-term framework within which to plan, build, and compete globally".

Similarly, the House of Lords Science & Technology Committee recommended that the Government adopt and articulate a long-term vision for UK Research, and the Council for Science and Technology (CST) talked of a vision for the future in which the UK research base is successful and globally competitive 20 years out. In its report, *A Vision for UK Research*, the CST argued that "the Government needs to develop consistent, focused long-term industrial strategies".

Public funding and supportive regulation for science and engineering sets the scene for the whole of the UK's R&D landscape. If the funding and support is not

predictable and coherent then it creates instability and uncertainty. This makes it difficult for private investors to make decisions about their long-term plans, and for scientists and engineers to make informed career decisions and plan large-scale research projects.

The Benefits of the Long View

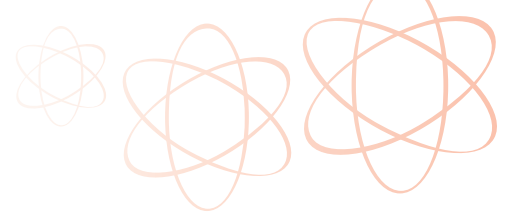
Given that the research cycle can last for decades, the public environment in which research plans are made needs to do the same. Private investments, research programmes, and careers are reliant on a long-term, coherent, and credible policy framework. Recent analysis of the performance of Howard Hughes Fellows, who are in receipt of long-term research funding, confirms that excellent scientists and engineers are most effective when they have stable funding.

Many private funders set a standard that government should aspire to in its research funding. For example, the Wellcome Trust launched its Strategic Plan 2010-20 earlier this year, explicitly stating that a decade was needed to reflect the long-term approach they took to research. David Lynn, Wellcome's Head of Strategic Planning & Policy, stated on the CaSE blog that "At a time of economic uncertainty in the UK, we look to an incoming government to follow suit in setting out their long-term support for science."

Rewards in research may be great, but they are unpredictable – meaning that private investment can never replace public spending. Indeed, the OECD argues that the importance of public funding for long-term riskier research and research on societal challenges is even greater during a recession. It is therefore even more important than ever that the Government sets out long-term plans.

An immediate and ongoing priority for CaSE is to convince the Government to develop a long-term strategy for science and engineering research and investment in the UK, of the order of 15 years. This should set out a trajectory of increased spending on R&D as a proportion of GDP, and should be based on a thorough analysis of the most effective policies in full consultation with individuals and organisations across the sector. CaSE will be keeping the pressure up until the Government commits to such a strategy.

Dr Hilary Leever, Assistant Director of CaSE
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The Campaign for Science & Engineering (CaSE) works to ensure that science and engineering are high on the political agenda and that through the implementation of appropriate evidence-based policies and adequate funding the UK has world-leading research and education, skilled and responsible scientists and engineers, and successful innovative business.

CaSE uses its strong political networks, independent analysis, broad membership, and responsiveness to cover four key policy areas:

- Research base
- STEM education & skills
- Private sector R&D investment
- Government department funding and use of science & engineering

To find out more or to join CaSE, please visit:

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The next issue of CaSE News will be published in April 2011. If you would like to contribute, please contact the Editor, Hilary Leever, at the CaSE office by March 14th.

CaSE Distinguished Lecture 2011 **John Denham, Shadow Secretary of State for Business, Innovation and Skills**

Wednesday 9th March
The Royal Institution

You are invited to join us for the CaSE Distinguished Lecture 2011, by John Denham, Shadow Secretary of State for Business, Innovation and Skills. The lecture is kindly hosted by the Royal Institution and will be followed by a drinks reception. Please register for the lecture at: <http://caselecture2011.eventbrite.com>, or contact the CaSE office.

CaSE Annual General Meeting

The lecture will be preceded by the CaSE AGM. All individual members and representatives from our member organisations are welcome. Please let us know if you are coming - the details of the venue and timings will be on the eventbrite link above, or contact the office.

25th Anniversary Celebrations

CaSE will be celebrating its anniversary at an evening reception on 13th January 2011 at an event kindly hosted by the Institute of Engineering and Technology and co-sponsored by *Nature*. Speakers include David Willetts, Minister for Universities and Skills, and we will be posting a report of the event on the CaSE website and blog.

Interview with Andrew Miller MP

Imran Khan will be interviewing Andrew Miller, Chair of the House of Commons Science & Technology Select Committee, for PolicyNet at the Royal Academy of Engineering on 14th February.

Devolved Elections

We want to engage with candidates and the party hierarchy on science and engineering prior to the devolved elections. The goals are to get science and engineering policies mentioned in the party manifestoes and to make sure that science and engineering are seen as election issues. We will take a similar collaborative approach to that of the *Science Vote* campaign we ran during the 2010 Westminster election including writing to the leaders of the parties and circulating their responses. We are also hoping to hold regional science and engineering debates. Please get in touch if you would like to be involved in this work or sign up for our monthly email update (from the front page of our website, www.sciencecampaign.org.uk) to ensure that you are kept up to date on progress and events over the coming months.

Forthcoming Consultations & Inquiries

- UKBA The student immigration system 31st January.
- HEFCE – Consultation on changes to information published by institutions. Deadline: 7th March.
- Independent Review of Intellectual Property Framework. Deadline: 1st March.

Campaign for
Science &
Engineering
in the UK

