

# Science Matters

## Science Matters

No. 39

Labour + Science =  
Prosperity

January 2010

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Science Matters No. 38 January 2010

## Scientists for Labour



*Prime Minister Gordon Brown speaking recently*

## Labour is prepared to invest in science

Talking down Britain is not going to succeed because there is huge talent in this country. We've doubled our investment in science and we are one of the greatest innovators in science and engineering. *Continued page 2*

## LABOUR + SCIENCE = PROSPERITY

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<http://www.scientists-for-labour.org.uk>

# Labour is prepared to invest in science

*Says Prime Minister Gordon Brown*

**Talking down Britain is not going to succeed** because there is huge talent in this country. We've doubled our investment in science and we are one of the greatest innovators in science and engineering. But what have you got to do to achieve this? You've got to be prepared to invest. The Tories won't. You've got to be prepared to invest in education and skills. The Tories will cut the schools budget. You've got to be able to say that you're going to run a policy for growth and not let the recession just take its course.



We can be the digital leader of the world. We can be the leader in low carbon industry in the world. We are one of the biggest pharmaceutical powers in the world. We are moving into biotechnology and advanced engineering in a huge way. Britain is leading in the creative industries. We've just talked about arts, about fashion, music and everything else. Britain is leading in creative industries.

All this depends investment by the government. And that is the choice in the coming election: will we be prepared to invest for the future in these industries and skills?

We need the highest skills for the future and we need to be seen as a creative hub of the world where all the talent of the world is able to descend upon us. Now my vision for the future of Britain is as the digital, low carbon, biotechnology, education, creative industry leader of the world. And that's where the jobs will come from, I tell you. I could say that over the next few years a million jobs will come from the expansion of these areas as a result of the effort that we are making now to build a strong industrial strategy and a strong education policy.

We are now the leading offshore wind power. We are now developing in Nissan, in Honda, in Toyota, in Jaguar, and in BMW. These are the companies based in Britain that are developing their electric cars or proposing to develop their hybrid cars in Britain as a base for Europe. These are successful car companies that are working and creating jobs here.

Labour is prepared to invest in science.

Taken from the January interview with Andrew Marr.

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## **Comments on Labour science successes and future policy recommendations** Dr John Unsworth

At the beginning of September SfL were inspired to produce this special report. We consulted widely within and without the membership and had a series of meetings and email conversations which have culminated in this report.

You can see that it is not complete. Our document “What Labour has done for Science” is included as an appendix. It has been revised but needs updating with the latest available statistics. The officers of SfL hope to complete a meeting with Paul Drayson in the near future where this revision will be discussed.

SfL members who took part in the consultation were: Colin Blakemore, Tom Blundell, Paul Connell, Matthew Freeman, Saiful Islam, Steve Keevil, Sean Munro, Alan Nichols, Willie Russell, Jonathan Seville, Nigel Titchen, Martin Yuille with invited guest David King.

It is also not finished as we have not yet shared it with Labour Party members as a whole as a tool for the election. This is our next phase and Paul Connell, our secretary will be discussing this on the back page.

## **LABOUR + SCIENCE = PROSPERITY**

The way Britain works is changing fast. Today nearly half of us are in the knowledge economy – producing, distributing, and exchanging information and knowledge. Innovative knowledge industries, like IT and biotech, have mushroomed. It's where young people work. It's where they want to work. Because it offers a more varied, interesting, and rewarding life; and because it means an open, equitable, and democratic society.

Labour understands this. Labour understands the opportunities for improving human health by funding basic sciences, particularly by the exploitation of new genomics and personalised medicine.

Labour understands the importance of exploiting science to ensure food security and minimise the impact of climate change.

Labour understands the continuing need to support clusters of academic research institutions, large companies, and small high-tech start-ups to support the local economy, investment, and employment.



But the Conservatives – new-style or old – see innovation primarily as a means to individualistic ends. The world has changed, but they just don't get it.

Labour is building the innovation nation. That means encouraging private and public research spending. We have doubled that spending. Progress in new wealth-creating spin-offs from world-beating science and engineering by our universities is too fast to keep up with. So here is Labour's Innovation Manifesto to keep Britain working by its wits.

## **Comments on Labour science successes and future policy recommendations**

### **Summary**

#### **1. Labour's successful record on Science**

The Manifesto should advertise with pride Labour's record on science and reiterate commitment to the 2004 Ten Year Framework. This would demonstrate our belief in the central role of science and innovation to get Britain's economy growing again to deliver prosperity, improve quality of life, and create jobs. This will be achieved in the short term through applied research targeted at current priorities, and further into the future through unpredictable spin-offs from world-class 'blue skies' research.

#### **2. Recent developments that need attention**

We believe that much of the criticism of the HEFCE proposals on social and economic impact is misinformed, and that a clear statement from the Government is needed to respond to the concerns that are being expressed and re-affirm commitment to basic science.

However, we believe that it is important to have clarity about the scale and nature of the proposed cuts in the budgets for HE and Research, again re-affirming the Government's commitment to basic science in the run-up to the election.

#### **3. Translating R&D into creating jobs**

We applaud the importance given by No. 10 to UK leadership on climate change. We also strongly support BIS in reviving Britain's manufacturing base, especially via the Building a Low-carbon Recovery strategy and the technology opportunities that it should bring to the UK. Realising this strategy requires more initiatives to address key skill shortages in industry for science and engineering graduates and skilled technicians, especially in nuclear engineering. *Scientists for Labour (SfL)* would support a concerted campaign from relevant Departments, encouraging young people to work at the cutting edge of new technologies and manufacturing, and emphasising the challenge and excitement. There is much to advertise widely from BIS key growth strategies, such as advanced engineering and the Life Sciences Blueprint.

Introducing incentives for universities to encourage sandwich year courses would increase informal contacts between universities and companies.

More incentives are needed at the interface between academia and industry to convert science into products and processes, e.g.

- Some of the R&D tax credit investment should be directed towards supporting R&D at the academia–industry interface.

- Provide a direct link for private finance into Technology Strategy Board programmes.
- Business-related degree courses with links to manufacturing and science.
- Amending fiscal disincentives via VAT charges on buildings that penalise academic laboratories with substantial industrial connections.

#### **4. Science in schools, further education, and universities**

*SfL* would support a commitment that all GCSE students should have access to a triple science course to improve equality of opportunity.

*SfL* recommends that a training and career route for school science technicians is clearly defined, and funding for science equipment in schools and colleges should be a high priority. Continued encouragement must be given to the recruitment and retention of high quality science and mathematics teachers. Training courses should be provided for experienced scientists and engineers to enable them to change careers and teach in schools and FE colleges. We support the recruitment of more dedicated teachers to university departments whose career progression would be linked simply to their teaching skills.

#### **5. R&D efficiency**

The current model, involving several Research Councils, does not need fundamental change, and the Government should continue to concentrate on assisting the process of technology transfer between academia and business. The need to ensure that public money is well spent, in intellectual, economic, and social terms, is a fundamental commitment and this obligation should be included in the Manifesto.

Labour needs to continue to support clusters of academic research institutions, large companies, and small high-tech start-ups, which have proved beneficial to local economy, investment, and employment.

Innovation arising from fundamental science can be highly effective, but requires awareness by bench scientists of the needs of industry. This can be achieved through person-to-person networking on a small and informal scale. We propose that the Brussels UK Research Office (UKRO) becomes much more proactive in this networking process. Research Councils should be encouraged to invest more in international research Infrastructure.

#### **6. Science and Government**

A long-term commitment to Public Sector Research Establishments (PSREs) is needed, in particular public analysts, the Forensic Science Service, and the Meteorological Office, and any decisions about changes to their funding and organisation should be made on the basis of scientific criteria/evidence and timely consultation with all stakeholders.

We urge that a Chief Scientific Adviser is appointed at the Treasury to improve appreciation of the short- and long-term implications of public spending decisions.

Proactive initiatives are needed to improve representation of science, engineering, and technology specialists in the senior civil service, and higher priority given to development of these staff.

## 7. Science and law

The UK should lead an international review of patent law to ensure that the rights of inventors are protected by systems that promote rather than suppress the cost-effective use of invention. *SfL* supports the reform of the libel laws to protect freedom of speech on matters of scientific integrity and reporting.

## 8. Public perception of science

No.10 leadership and its support of the scientific arguments relating to climate change, and a range of other controversial issues, has been much appreciated by the scientific community. Skilful application of citizen science to issues such as the impact of GM crops may gather public support in such debates.

## 9. Science and the immediate global challenges

Climate change and an increasing population place demands on global food supplies, which must be addressed urgently. We believe that there is an absolute requirement for science and technology to meet these immediate global challenges, and therefore strongly support providing increased resources for climate and plant sciences.

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# Comments on Labour science successes and future policy recommendations for the Manifesto

## 1. Labour's successful record on science

*Scientists for Labour (SfL)* applaud what the Government has done over the past 12 years to enhance the important role that science plays in our economy and society. In contrast to the opposition parties, the Government 'gets' science, and is resolutely committed to it even though some of the issues are contentious. This has been widely recognised by both the scientific community itself and the interested public.

The 2004 'Science and Innovation Investment Framework, 2001-2014' was enormously important, not just for ring-fencing funding, but because of the long-term vision it provided demonstrating the Government's understanding of the value of science at the heart of an innovative economy. Many scientific developments and their immediate application can be clearly attributed to the tripling of the science budget from £1.3 billion in 1997 to almost £4 billion by 2010: medical advances, stem cell research, alternative energy sources, infrastructure investments leading to dramatic transformation of laboratories and equipment and student research grant increases. For a fuller list of achievements, see appendix 2..



**SfL suggests that the Labour Manifesto should advertise with pride Labour's record on science. We should reiterate our commitment to the 2004 Ten Year Framework to demonstrate our belief in the central role of science and innovation to get Britain's economy growing again, to deliver prosperity and create jobs.**

## **2. Recent developments that need attention**

As we move towards the general election there is a risk that recent developments may dispel the political benefits that should accrue from this past commitment. The HEFCE suggestion that 25% of the future research excellence framework (REF) assessment will be based on economic and social benefit has been received very badly in some parts of the research community. In particular, a petition about the issue, organised by the University and College Union, received 17,570 signatures and, more importantly, led to a great deal of publicity and media coverage which was predominantly critical of the proposal.

There is a danger that a simple linear model of technology transfer assumes that particular items of technology can be measured by translation directly into related business or products, rather than valuing networks, continuous interactions, and knowledge flows. It is also important to recognise that the timescales for translation of research typically tend to be much longer than 4 years, e.g. 12 years or so for new drug approvals.

SfL recognises that it is important to ensure that the Government's massive increase in investment in research reaps economic and social benefits, particularly in the current economic climate. We are not opposed to the idea of measuring impact and considering it as one input into determining funding allocations, although we may differ with HEFCE on some points of detail.



**Paul Drayson minister of Science and Innovation**

**We believe that, although much of the criticism of the HEFCE proposals on impact is misinformed, there is an urgent need for a constructive response from the Government to the growing criticism. It should re-affirm the commitment to basic science.**

The pre-budget report (PRB) announced cuts of £600 million from the higher education and research budgets, with no details having emerged yet as to how these cuts will be allocated between different funding streams. Soon after, the Science and Technology Facilities Council (STFC) announced budget cuts which

will lead to a 25% reduction in the numbers of studentships and fellowships, and withdrawal from a number of important projects and facilities.

SfL recognises that these are difficult times economically, and that the scientific community cannot expect to be insulated from the pressures that apply to all other areas of public spending. We realise that the STFC funding issue is complex, and we welcome Lord Drayson's commitment to find a better solution by the end of February 2010. **However, we believe that it**

**is important to have clarity soon about the scale and nature of the proposed cuts, again re-affirming the Government's commitment to science in the run-up to the election.**

For example, it is not clear whether the recently announced £135 million cut in HEFCE funding is part of the £600 million cut announced in the PRB or an extra cut. Recurrent research funding is being protected, but we are concerned over the effects of very large cuts in capital funding for science and research, such as the Science Research Investment Fund (SRIF), as well as in both capital and recurrent funding for teaching. Cuts on this scale send the wrong message about a government that is so firmly committed to science and innovation.

### **3. Translating R&D into creating jobs**

**We applaud the importance given by No.10 to UK leadership on climate change. We also strongly support the attention being given by BIS to reviving Britain's manufacturing base, especially via the 'Building a Low-carbon Recovery' strategy and the technology opportunities that this is expected to bring to the UK.**

**We note in this context the continued call by industry for more science and engineering graduates and skilled technicians.** We believe that much still needs to be done to change British educational attitudes, which place insufficient emphasis on science and engineering achievement and are too often divisive in separating arts and humanities from science at too early an age. To translate our success from scientific research and invention into business and employment we need to challenge public perceptions of the relative importance of working in design and manufacture compared with business administration and finance.

Record numbers (143,400) completing apprenticeships in 2008/09, an impressive increase of 27.4 per cent compared to 2007/08, is an encouraging trend, but still not enough. What is needed too, in every major conurbation, is a facility, where students can learn the theory and practice of modern manufacturing equipment and methods.



Skills minister David Lammy

**SfL would support a concerted campaign from relevant Departments encouraging young people to work at the cutting edge of the new technologies and manufacturing, emphasising the challenge and excitement. There is much to advertise widely from BIS key growth strategies, such as Advanced Engineering and Life Sciences Blueprint.**

Key areas where there are shortages of scientists and engineers include energy-related disciplines. There are shortages especially among those skilled in translating new science into products; life-cycle analysts; bio-engineers; chemical and materials engineers; heavy electrical engineers and nuclear engineers. The student number cap is an increasing problem that inhibits starting courses, which might meet those shortages.

Nuclear engineering is an acute skill shortage, which needs

urgent attention if we are to realise our energy strategy. Outside of military (submarine) reactors, there is almost no UK reactor expertise. There is now only one university running a course in nuclear engineering and we urgently need other training centres for nuclear engineering developed so that a resurgent nuclear industry would be able to employ UK graduates. We welcome the package of measures recently announced to support the UK civil nuclear industry, in particular the new Nuclear Advanced Manufacturing Research Centre to be based in South Yorkshire with Rolls-Royce as the lead industrial partner.

Translating science into manufacturing and jobs is not the preserve of scientists alone but critically depends on finance, marketing, sales and business organisation. Much progress has been made improving the communication skills and business focus of scientists and engineers, but little attention has been given to bringing science and engineering into business and commerce courses. **We would welcome the introduction of initiatives, which make business-related courses more relevant to manufacturing and science.**

**Sandwich year courses give students an opportunity to experience working in both academic and industrial environments before graduating. Introducing incentives for universities to encourage such University/Industrial interactions would increase informal contacts between Universities and companies.**

Technology Strategy Boards (TSBs) have been a big success in promoting dialogue and networking between academia and industry – a key catalyst for innovation. We should consider improving tax advantages to companies supporting collaborations with universities. The R&D tax credit system has been less successful, especially as a vehicle to encourage R&D in large businesses. In our view large businesses are likely to make most R&D investment decisions independently of tax credits, whereas R&D in SMEs is often limited by the availability of suitably trained staff in a small workforce. It is critical for UK to be competitive internationally as a preferred location for R&D and we welcome the recent announcement to introduce a 10% corporation tax rate on income, which stems from patents in the UK.

Currently, business investment in R&D, and more generally in the UK science base, has stalled, we need to work at strengthening academia-industry links, especially for enterprise development – financial help to start-ups and spin-offs is often too little and too short-term, so that entrepreneurs are spending too much of their time seeking finance and seeing their equity diluted as they do so. **We should redirect some of the large investment in R&D tax credits towards supporting R&D at the academia–industry interface. We should provide a direct link for private finance into TSB programmes so that financiers can offer help to promising researchers in a more focused way.**

Current Treasury rules penalise academic laboratories that develop substantial industrial connections by removing their VAT exception on new buildings when their industrial activity passes a certain threshold. **We suggest that this could be amended as these rules result in a perverse incentive to avoid industrial activity to prevent VAT costs.**

#### 4. Science in schools, further education colleges and universities



Labour has addressed a serious gap in science teaching support by creating 10 Science Learning Centres for teachers in conjunction with the Wellcome Trust, introducing training programmes, such as Science and Engineering Ambassadors (SEAs), and refurbishing a large number of science laboratories and technical workshops. These initiatives are welcomed by *SfL*, but better support for practical lessons is needed to realise the benefits, as LEA support is patchy, especially in basic equipment and in career training and pay structure for science technicians (e.g. the review by Sir Gareth Roberts recommended training technicians as teaching assistants and demonstrators).

Although the Government has done much to address the recruitment and retention of science and mathematics teachers, state sector pupils are still disadvantaged compared with private schools. **We would support a commitment that all GCSE students should have access to a triple science course to improve equality of opportunity.**

Lord Sainsbury will report shortly on the development of a registration system for engineers and on proposals to introduce a parallel scheme for science technicians, which is a step in the right direction. *SfL* considers that a training and career route for school technicians should be clearly defined to include the minimum number of hours, and a national formula should be established so that schools and colleges receive the same funding per student (graded for age) for re-equipping school science equipment. This would be a popular measure and would highlight LEAs that underfund school science.

***SfL* recommends that a training and career route for school technicians is clearly identified. Likewise, attention needs to be given to funding for school science equipment.**

**Continued encouragement must be given to the recruitment and retention of high quality science and mathematics teachers. Training courses should be provided for experienced scientists and engineers to enable them to change careers and teach in schools and FE colleges.**

Teaching in universities is still too often treated as a secondary role to research when it comes to assessment, but good teaching is essential for training and inspiring future generations of scientists. **We would support the recruitment of more dedicated teachers to university departments whose career progression would be linked to their teaching skills rather than their research or industrial impact.** Some great researchers are terrible teachers!

#### 5. R&D efficiency

##### a. Funding and deciding R&D priorities

**The current model involving several Research Councils does not need fundamental change, and the Government should continue to concentrate on assisting the process of technology transfer between academia and business.**



Seated: Tom Blundell, chair of BBSCR

Although division of the Research Councils by scientific area can potentially inhibit cross-disciplinary work, this issue has largely been recognised and addressed. Any potential efficiency benefits of restructuring Research Councils are likely to be outweighed by the deleterious effects of uncertainty and over-centralisation. There should be greater transparency in science funding decisions, including at departmental level, and ring-fencing of budgets once they have been allocated.

**The need to ensure that public money is well spent, in intellectual, economic and social terms, is a fundamental commitment and this obligation should be included in the Manifesto.**

For short-term R&D of high impact this can be achieved by providing support to enable 'realisation' of the

benefits. We should not be relying just on the researchers and their supervisors to make this happen. We should make it clear that short-term impact is not expected for fundamental research, where we know from experience that there is huge but unpredictable potential. There should be an assumption, based on past experience, that at least some of this work will lead to unpredictable but very beneficial spin-offs. So the more applied the research, the higher the expectation should be in terms of impact.

The field of magnetic resonance imaging (MRI) development is an example of unpredictable spin-off of 'blue skies' research. MRI was developed from basic physics research in the 1930s and 1940s, which led to the discovery of nuclear magnetic resonance (NMR). The application of NMR first to chemistry in the 1960s revolutionised our capacity to quickly define the molecular structure of chemicals. Only then did anyone think that a medical imaging spin-off might be possible. Then the idea was forgotten for another 10 years and yet another decade followed before it became a reality – all in all, 40 years between basic discovery and spin-off.

In the pharmaceutical and other specialist chemical industries, research is often carried out via automated high-throughput screening of candidate compounds. This approach is inefficient, e.g. typically as many as 8,000 compounds may be selected from a screen, leading to eight clinical trials and just one drug to market. **Innovation arising from fundamental science can be highly effective, but requires awareness by bench scientists of the needs of industry, achieved through person-to-person networking on a small and informal scale. There is a need for more incentives to work at these interfaces, converting science to products and processes.**

#### b. Optimum geographical distribution – UK versus EU, regional centres of excellence

The concentration of science and engineering in Scotland into larger centres of excellence has worked well so far, It could also work in the English regions – and the Warwick–Birmingham Science City may be a good example – but this depends on continued RDA funding. Labour has given universities a massive boost to infrastructure renewal via JIF, SRIF,



CIF, and the RDAs (in marked contrast to the previous administration). This has led to more effective university departments of science and engineering and better engagement with industry.

**Labour needs to continue to support clusters of academic research institutions, large companies, and small high-tech start-ups which have proved beneficial to the local economy, investment, and employment.**

UK researchers attract more than their fair share of EC funding – a benefit which may not be sustainable in the future. The UK often considers its EU partners as 'foreign' countries where the British Council or the British Embassy is the vehicle for promoting UK research. This facilitates bilateral development, not the multilateral development that research now needs. The posting of Science Officers attached to DBIS in embassies is a step forward, but they need to establish better links with UK research grassroots, which is where collaboration takes place.

**We propose that the Brussels UKRO office needs to become much more proactive in the networking process.**

Some areas of UK research (e.g. basic physics, astronomy, biomedical research, and life sciences) have an absolute requirement for collaboration with the European mainland for reasons of cost and access to resources. UK nuclear physics research is almost entirely dependent on the use of European (non-UK) and US research facilities (e.g. advanced accelerators and cyclotrons).

Research infrastructure (RI) tends to score low in the RAE. Therefore UK universities have tended to neglect RI and adopt short-termism. Government could learn from the EU and remove this driver. RI underpins discovery research in the UK and contributes to the UK punching above its weight in science. In addition, it provides benefits by developing analogous RI (e.g. biobanking) in other countries and by enabling efficiency savings, and RI courses attract people from round the world. This brings income, extends UK influence on scientific development, and facilitates the establishment of mutually beneficial collaborative research.

**We propose that Research Councils should be encouraged to invest more in international research infrastructure.**

## **6. Science in Government**

Public Sector Research Establishments (PSREs) continue to change. Nevertheless there is current concern over the future of public analysts, the Forensic Science Service, and the Meteorological Office (privatisation of the Met Office is a potential Conservative aim with significant potential impact on the objectivity of climate change science). **We support a long-term commitment for these PSREs, and any decisions about changes to their funding and organisation should be made on the basis of scientific criteria/evidence and timely consultation with all stakeholders.** There needs to be positive recognition of the importance of



John Beddington  
current CSO

Government science to underpin policy-making. A full audit of Civil Service scientists and their skills is needed to ensure that the Government has a comprehensive understanding of its own scientific assets. **Proactive initiatives are needed to improve representation of science, engineering and technology (SET) specialists in the Senior Civil Service, and higher priority given to development of SET staff.**

The appointment of Chief Scientific Advisors in all major departments has been one of the strongest signals of the importance that the Government places on the integration of science across Whitehall. The notable exception is the Treasury and, given the need for evidence to inform spending decisions, this is a glaring gap. **We therefore urge that a Chief Scientific Adviser is appointed at the Treasury.** We would also support an enhanced role and authority for the Government Chief Scientific Adviser working in close collaboration with a dedicated Science Minister who is a member of the Cabinet.

## 7. Science and the law

There is considerable debate currently on the scientific, social, and economic value of patent law, including the Manchester Manifesto of Nobel laureate Sir John Sulston. This is timely: GSK and Pfizer have just announced a joint venture on HIV where they will eschew IP and profits, and the Innovative Medicines Initiative, an EU public-private partnership where the taxpayer will subsidise research leading to new drugs, has just become autonomous. We also note that US patent laws work in favour of US-based scientists. **We recommend that the UK should lead an international review of patent law to ensure that the rights of inventors are protected by systems that promote rather than suppressing the cost-effective use of invention.**



The university export sector is worth £32 billion to our economy (if measured separately, it would be ranked fourth behind financial services, chemicals, and intermediate manufactured goods). **To protect this, it is important that the Home Office operates its new visa system knowing the importance of foreign scientists to our economy and, where possible, avoids excessive delays.**

There remains a need for greater representation for women and under-represented minority groups at all levels of the SET workforce. A renewed commitment is required, especially to ensure that the science careers of women are not adversely affected by a career break to start a family.

Science depends on free and open debate—it is the paradigm in which science exists and should not be inhibited. **SfL supports the campaign run by Sense about Science, English PEN, and the Index on Censorship for reform of the libel laws to protect freedom of speech in matters of scientific integrity and reporting.** This campaign was precipitated by the case of the British Chiropractic Association versus Simon Singh, and other recent high-profile cases.

## 8. Public perception of science

No.10 leadership and support of the scientific arguments relating to climate change, and a range of other issues, such as stem cells, the use of animals in research, nuclear power, and nanotechnology, has been recognised and much appreciated by the scientific community. Skilful application of citizen science to issues, such as the impact of GM crops, may gather public support in such debates.

SfL supports the use of citizen science, i.e. projects or ongoing programmes of scientific work in which individual volunteers or networks of volunteers, many of whom may have no specific scientific training, perform or manage research-related tasks such as observation, measurement, or computation (especially in ornithology and environmental and health monitoring) as a means of engaging a wide spectrum of the public in doing science. However, it is essential that these studies are monitored in terms of their scientific robustness and conclusions are peer reviewed. Skilful application of citizen science to more controversial issues, such as the impact of GM crops, might provide a mechanism to gather public support in such debates.

## 9. Science and the immediate global challenges

Climate change and an increasing population are placing demands on global food supplies which must be addressed urgently. We believe that there is an absolute requirement for science and technology to meet these immediate global challenges, and therefore strongly support providing increased resources for climate and plant sciences, the latter as detailed by the recent Royal Society Report 'Reaping the Benefits.'

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# Reaping the Benefits.

The reaping the benefits report was released by the Royal Society. Pictured: David Baulcombe: chair of the advisory committee

Reaping the benefits can be downloaded from:

<http://royalsociety.org/Reapingthebenefits/>



SfL is pleased to share web links with Progress:

[www.progressonline.org.uk/](http://www.progressonline.org.uk/)



# What has Labour done for science?

## Investment is working – Britain is recognised as a world class science base

- More than doubled the **science budget** from £1.3 billion (1997) to £3.4 billion (2007). Continue to rise above inflation, reaching almost £4 billion by 2010/11.
- Total R&D funding (inc Higher Education Funding Councils and Research Councils) £7.4bn in 2006.
- Increasing spending on **medical research** by 30% over the last 3 years.
- Provided £2.3 billion of support for business through **R&D tax credits** up to 2006.
- Supporting **knowledge transfer**, e.g. via Higher Education Innovation Fund (HEIF) to strengthen academia and business links and help take research to market.
- Increased capital expenditure and much improved university **research infrastructure**.
- In 2006/07, £2.3 billion made available under the **Small Business Research Initiative (SBRI)**.
- **Multidisciplinary research programmes**, e.g. 'Living with Environmental Change' programme on ageing; and increased investment in energy research and stem cells.

## Established joint ventures with business to solve challenges facing the world

- The **Technology Strategy Board** - £1 billion programme over the next 3 years.
  - collaborative R&D technology areas:-

|                          |   |
|--------------------------|---|
| High value manufacturing | Bioscience                                    |
| Advanced materials       | Electronics, photonics and electrical systems |
| Nanotechnology           | Information and communication technology      |

- **Innovation Platforms** bringing together key partners to address a major societal challenge and to increase business investment in R&D and innovation:

|                                  |   |
|----------------------------------|---|
| Low impact buildings             | Intelligent transport systems and services        |
| Assisted living                  | Low-carbon vehicles                               |
| Network security                 | Detection and identification of infectious agents |
| Sustainable agriculture and food |   |

- **Energies Technologies Institute** to raise up to £1 billion over 10 years for low-carbon energy R&D from a 50:50 partnership between business and Government

## Encouraging STEM skills

- Created ten **Science Learning Centres** – one national centre and nine regional centres in conjunction with the Wellcome Trust. Developed **Project Enthuse**, a scheme that covers the cost of teachers to attend courses at the national Science Learning Centre.
- The DIUS-funded **Science and Engineering Ambassadors** programme has over 18,000 individuals registered as SEAs and acting as role models within schools across the UK.
- Latest UCAS figures for acceptances onto **degree courses** in 2007 show rises in some key STEM subjects (Mathematics up by 9.1%; Chemistry 8.9%; Physics 12.4%).
- **PhD stipends** paid by Research Councils have risen by 45% (from £9,000 to £13,000) since 2002 and have more than doubled since 1999 (when they stood at £6,500).



## Naz Sarkar

Naz is PPC for Reading West and a teacher of Mathematics. He gave an inspiring speech at conference. Sometimes we think that we should be called STEM for labour as we represent scientists of all kinds including Mathematicians and engineers.

If you are an SfL supporter and live near Reading please consider getting in touch with Naz's campaign and offering your support.

[naz@readingwest.com](mailto:naz@readingwest.com)

# SfL at the Election

As we approach the election there are some things that that SfL members can do.

- Have we missed anything in our special report? Write to us and let us know.
- Forward a copy of this edition of Science Matters to your constituency secretary and bring it to the attention of your General Committee
- Forward a copy to your PPC. If your PPC has a scientific, mathematical or technological background, encourage them to get in touch with us. In the next edition we want to publish a list of such PPCs to encourage members to support them.
- Forward a copy to your agent. If you have a targetable group of scientists in your constituency SfL may be able to provide help to reach out to them.



SfL secretary Paul Connell:  
photo: Biochemical society

**We look forward to hearing from you all.**

*'Science Matters' is the newsletter of Scientists for Labour, a Socialist Society affiliated to the Labour Party.*

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