

# We're the world's best: it's not rocket science

Britain is looking for growth. It must exploit its brilliant scientists more single-mindedly

Alice Thomson



**W**e are just an advanced breed of monkeys on a minor planet of a very average star but we can understand the Universe. That makes us something very special," Stephen Hawking once said.

Today we will discover whether deep beneath the Swiss countryside, for less than one trillionth of a second, science's most elusive particle, the Higgs boson, has finally been discovered in the Large Hadron Collider, bringing us one step closer to understanding the world. The hunt for the "God particle" has already taken 50 years and its discovery would be a triumph for physics by providing the final piece of the Standard Model, the theory of how the universe works.

Meanwhile the search goes on for the economic holy grail — the growth particle. Nobel prize-winning economists and political leaders who have been labouring to discover the secret of improved GDP may find their answer in that same 16-mile loop of colliding atoms at Cern.

Science is looking increasingly like the answer to Britain's economic woes: we may not have a five-sigma (99.99997 per cent) level of certainty, but research increasingly looks like our best bet for the future. Much of Britain now seems second-rate or sordid. We have finally had enough of the City: for decades we thought bankers were the only answer to wealth creation until they brought the

country to its knees; we're no longer impressed by MPs or GPs, the police, journalists or comedians. Our footballers never make it to the semi finals; our tennis players won't win.

We feel we are floundering. Except in science. Our scientists aren't just first-class, they are the best — Britain is the most productive scientific nation in the world. In proportion to our national wealth we are responsible for more original research than any other country in the G8 yet spend less than everyone except Italy on this research, just 0.55 per cent of GDP. Our scientists have been ingenious, taking tiny amounts of funding and spinning it into gold for this country, developing new materials and drugs.

Britain often forgets its scientific heritage yet it has an astonishing track record. We have the best university in the world, at Cambridge. Its Cavendish Laboratory alone has 29 Nobel prizes, more than China or Russia.

International scientists are still drawn to Britain, they just don't attract

## The Canadians and Chinese should base their research here

much attention because they aren't living in vast white stuccoed houses in West London but in campus bedsits. At the Cavendish I recently watched Dr Mete Atature, a brilliant Turk at the forefront of quantum physics, spinning an electron. He chose Cambridge rather than Harvard, he said, "because you have a great history of innovation and letting scientists get on with it".

This country not only has the tradition, with its original double helix model still on display, but it has the records, samples, scientific language



Some of the best physicists at the Large Hadron Collider are British

and data bases that stretch back to the Victorian era. As David Willetts, the Science Minister, explains: "When Nasa scientists want to compare meteorites they go to the Natural History Museum. If they want to know about crop rotation, they have been studying wheat samples at the John Innes centre for 150 years." We should not only be increasing our scientific endeavours but encouraging everyone from the Canadians to the Chinese to base their research and development projects here.

Since the downturn started, the US, Canada and France have reacted by spending more on science, while the British froze their research budget. We need to back science in the way we once fêted the City. Politicians should have breakfast with quantum physicists and be supremely relaxed about the filthy clever. Scientists are far easier to champion. They aren't London-centric, the pay isn't outrageous but the rewards can be staggering for Britain if

we can combine research and business, science and technology and our intellectual and commercial talents.

This is where Britain needs to put its energy and money. Michael Gove, the Education Secretary, also needs to publish a new science curriculum that will put children back into laboratories and allow them to experiment and create. We don't just need to train up astrophysicists but technicians too. When J. J. Thomson, my great-grandfather, discovered the electron at the Cavendish, he put it down to his glassblower, who was better than his German counterpart. Yet while many of the best physicists at Cern are British, none of our engineers helped with the project.

We need once more to become a nation of geeks. For the past few decades too many science graduates have been lured into the City. It's a huge waste. Can they honestly say they are now glad they are in a profession with Bob Diamond rather than Tim Berners-Lee or Martin Rees, the Astronomer Royal?

How do we know what will make money? How can we tell the benefit of finding the Higgs boson? We can't, but we do know it will make us intellectually richer. As Margaret Thatcher, a chemist, said to her Cabinet 30 years ago when they tried to stop her spending money on the Hadron Collider: "Yes, but isn't it interesting?"

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## Watching sports officials like a hawk just isn't fair Ross Clark

**I**f you are a pigeon trying to feed on the lawns of Wimbledon there can be no more terrifying sight than that of Rufus the hawk. If you are a line judge, on the other hand, you have to contend with the chilling presence of an even less forgiving beast — Hawk-Eye.

Yesterday the manufacturers of the electronic system, which is used in disputed line calls, revealed that three in ten calls by Wimbledon's line judges are incorrect. One of them even committed the sin of depriving Andy Murray of a break point in his match against Marcos Baghdatis on Saturday evening.

I don't know whether there is a Union of Amalgamated Line Judges, but if I were its shop steward I would be marching all my members out on strike until Hawk-Eye was switched off.

I could put up with the danger of being hit in the eye by a ball, as one unfortunate judge was on Monday. I could even withstand the attentions of a latter-day John McEnroe effing and blinding over one of my decisions. What I couldn't bear, however, is to have my hard work analysed and overruled by precision technology to which millions of television viewers had access, but I did not.

At the very least, the rules should be changed so that a shot is adjudged "out" if the centre of the ball hits the ground outside the centre of the line. That is a much easier task than trying to tell whether any part of a 130mph tennis ball, which flattens out upon impact, is in contact with any part of