

Picking the pockets of philanthropists

With many government funding sources for scientific research being slashed, Justine Davies delves into the deep pockets of endowment charities to see what she can find for today's cash-strapped scientists



'Ask not what your country can do for you – ask what you can do for your country,' are perhaps the most famous words spoken by J F Kennedy during his inauguration as US president in 1961. The words did not stand in isolation. They were delivered against a historical background of American people asking what they could do for their country. Historically for science this US philosophy of philanthropy has been a particular boon, with generous endowment charities, like the Carnegie Institute for Science and the Rockefeller Foundation (founded in 1902 and 1913, respectively), funding much of the important, early scientific research. And the generous donations of the Bill and Melinda Gates Foundation, amongst others, ensure that the tradition continues.

In general, the UK lags behind the US in the amount of money donated by philanthropists. According to a May 2009 study for global personal wealth advisors Barclays Wealth, compared with British counterparts of the same net worth, wealthy individuals in the US donate three times the amount of time and four times the amount of resources to charitable causes each month. Nevertheless, scientific research in the UK still receives considerable support from philanthropic organisations like the Gatsby Charitable Foundation and the Wellcome Trust. And with the UK government having to tighten the purse strings due to the latest recession, philanthropic funding may provide a lifeline for even more scientists than before. However, there is more to philanthropic funding than filling in the gaps left by a cash-strapped government.

The road less travelled

A UK Royal Society report, *The Scientific Century*, published in March 2010 stated that although the conventional approach to research funding is to support pre-defined projects, programmes and research institutes, 'the benefits of research are often serendipitous and may not match those envisaged in a grant proposal. Scientists need flexibility to exploit the new opportunities and questions that emerge from their research.' This flexibility is often thought to be lacking in government grants and money given by non-endowed charities, because these organisations – which are funded directly or indirectly by the public – have their hands tied by public

opinion. 'Having stakeholders to answer to means that both the government and non-endowed charities have less flexibility to fund non-directed research,' explains Peter Hesketh, chief executive of the Gatsby Charitable Foundation. Philanthropic funding, which is not accountable to the public purse has more ability to be innovative and fund research that might look a bit risky, he says.

The Gatsby Charitable Foundation is a private foundation wholly funded by Lord Sainsbury, an ex-UK science minister as well as famous grocer. Sainsbury has pledged to give at least £1 billion in his lifetime to various endeavours, all with a scientific theme. Amongst other projects, the Gatsby foundation currently funds a world renowned centre for plant science in Norwich, and has plans to build another plant centre in the botanical gardens at the University of Cambridge, as well as help fund a neuroscience centre at University College London. At the Gatsby funded research hubs some of the best minds in their fields are given the latitude they need to explore ideas, making it 'probably the most wonderful type of funding you could ever receive as a scientist', says David Baulcombe, professor of botany at the University of Cambridge.

Giving scientists freedom to follow their noses is also an important part of the US Carnegie Institute for Science's philosophy. Staff scientists are appointed at Carnegie's six scientific departments based on excellence and the promise that

In short

- Endowment charities have historically generously funded scientific research, more so in the US than UK
- This type of funding offers scientists more freedom than research council grants
- Philanthropists' cash is even more appealing in an era of government funding cuts

A new plant-science laboratory is being built at the University of Cambridge with funds from the Gatsby Charitable Foundation

that person will do really visionary research, says Susanne Garvey, director of external affairs at the Carnegie Institute for Science. 'We let that person "do their thing" and decide where he or she wants to go,' she says. In fact, Carnegie scientists are given such a free rein that if they want, they can completely change course, and some of their scientists have taken a sabbatical from research to learn an entirely new field. 'From the beginning, we select people who have a compulsion to do science, they just can't help it. So, their goal is to figure out the best way to use their talents – they know best. We do everything we can to help them and to help them grow,' Garvey says.

Recognising the serendipitous advantages brought about by researcher freedom is one of the reasons that the Wellcome Trust, which is the UK's largest endowed charity, has recently changed to awarding grants to individuals – called investigator awards – rather than funding projects and programmes. The Wellcome Trust is concerned that the short, three year, time scale of project grants could be disadvantageous. 'It is really difficult to get any serious science done in this time,' says Alan Schafer, director of science funding at the Wellcome Trust. 'You get the money, it takes you 6 or 8 months to get the project up and running, you spend a year trying to get things to work, you eventually get some results and then you are worried about getting another source of funding whilst trying to put together a publication or presentation. I don't think that





this maximises efficiency or enables scientists to be most creative and productive,' he explains.

This change in strategy, however, does not mean that the Wellcome Trust will leave its scientists completely to their own devices; they will need to demonstrate that their research, in general, fits in with the five scientific challenges identified by the trust. However, according to Schafer, 'people will not have to go through contortions to make it fit, for example they won't need to make their genetics research seem like infectious diseases.' Applicants just need to identify how their research can help with the challenges, he says.

This philosophy behind much philanthropic funding makes it an ideal spur for blue skies research, which is typically thought of as being rather futuristic. But gazing into the troposphere doesn't necessarily mean that the scientific results are only palpable by future generations. 'Important scientific discoveries are going to be translated in benefits that will improve the lives of everyone on the planet,' says Jack Dixon, vice president and chief scientific officer of the

Howard Hughes Medical Institute (HHMI) – a US-based medical endowed charity. 'For example, one of our Hughes investigators, Brian Druker, along with scientists at [the pharmaceutical company] Novartis, was able to identify a specific inhibitor that could block the progress of a cancer that goes by the name chronic myelogenous leukemia. There are literally thousands of people walking around today because of Brian's work.'

Another country

Research into problems facing the developing world has received a massive amount of support from philanthropic organisations. The Bill and Melinda Gates Foundation – started by Bill Gates of Microsoft fame, and his wife, in the late 1990s – is perhaps the most famous organisation to focus their efforts on improving the lives of people in poorer regions of the world, but many other philanthropic organisations have research endeavours involving developing countries. For example HHMI has recently set up a research centre in Kwa Zulu Natal, South Africa, and

The Wellcome Trust's headquarters in Euston Road, London

the Wellcome Trust has a strong interest in diseases prolific in the developing world.

Freedom from cumbersome bureaucracy and public accountability also means that philanthropists can rapidly move to fund research with longer term goals. Julian Parkhill, director of sequencing at the Wellcome Trust Sanger Institute, explains that in the early stages of the human genome project there was a feeling, especially in the US, that if private companies could pay for the project the public sector shouldn't get involved. 'That was a great concern to the scientists particularly as there was a strong feeling that the human genome sequence should be for a public good, rather than a commercial property.' But an ability to move rapidly and think strategically meant the Wellcome Trust was able to take on responsibility for funding a third of the human genome sequence.

Funding models

Philanthropic organisations are united in their desire to allow scientists freedom, and to address the major challenges facing humanity,

'The philosophy behind much philanthropic funding makes it ideal for blue skies research'

but there are many different ways in which they achieve this. Some organisations, like Carnegie, generally fund independent research institutions. This concentrates 'lots of like-minded people in one environment', says Garvey. On the other hand, HHMI typically funds individuals within universities, an approach Dixon feels has many advantages. In particular, 'it really allows for a breadth and a range of expertise that probably would not be possible if one had everyone within one single institution. In addition, our funding is a real asset to the universities.'

Philanthropically-funded scientists can also apply for grants from other sources. With Carnegie scientists receiving on average half their funding from federal grants. This is a change from 20 years ago, says Garvey, when most of the funding came from the institute. One reason is that many young researchers have already become accustomed to applying for government funding before gaining a place at Carnegie. However, it is also a rebuttal to those who think that scientists who receive philanthropic funding are mollycoddled. 'It is a way of proving to their peers that they are really good, of validating themselves and giving them a feather in their cap,' says Garvey.

Despite this need to prove oneself through government grants, obtaining philanthropic funding is not the easy option. Many philanthropic organisations, like the Gates Foundation and the Dr Hadwen Trust – which funds research towards limiting animal research – have a rigorous grant application process. Others, like Wellcome and HHMI, have a highly competitive application process for their investigator awards. Even organisations like the Gatsby foundation, who proactively seek out people that they want to work with, do this in consultation with a large range of experts in the particular scientific arena, 'who are constantly alert to and connected with those people doing great things', says Hesketh.

Thinking long term

And once they secure philanthropic funding, researchers can't sit back on their laurels. Scientists who receive a Wellcome Trust investigator award will enter into a close mentoring relationship with the trust. 'This is not designed to cut off funding midway through,' says Schafer,



BILL AND MELINDA GATES FOUNDATION

'if we are saying that this is a long term project with flexibility the last thing we want to be doing is to look at it in 4 years and say "you have only got one publication, we are cutting your money"'. Institutes like Wellcome's Sanger go through particularly intensive reviews, says Parkhill, 'which involves writing up what we have been doing and what we are planning to do as if it were a large grant application. It gets peer reviewed and we get site visited and a strategic review as well.'

Other philanthropic organisations have similarly rigorous review processes to ensure funds are used appropriately. At the HHMI these reviews are a bit stressful, admits Dixon. Approximately 20 per cent of HHMI researcher's contracts are not renewed, and they are given a two year period to find alternative funding to support their work. Likewise at the five yearly reviews of Carnegie researchers, 'if the fire in their belly has gone, then they will be asked to think about doing something else someplace else,' says Garvey.

Easy come, easy go?

A common concern of individuals funded by philanthropists is that the plug may suddenly be pulled on the funding. Indeed, the Wellcome Trust has recently threatened to stop funding for University College London's centre for the history of medicine and Gatsby has just

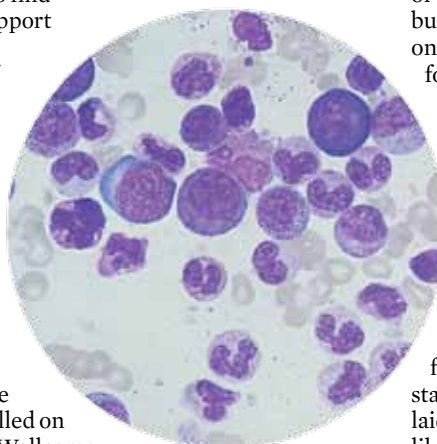
The Bill and Melinda Gates Foundation funds research into diseases affecting poorer parts of the world

announced a gradual phasing out of their mental health arm. No matter what the source of funds, the potential of them drying up is always a concern, says Parkhill, 'if you are spending money on scientific research you have to have the ability to say "no". It has to be competitive on the highest level, otherwise you are not getting proper value for money. It is a foolish scientist who is convinced that they are going to get their next funding application approved.'

It is also easy to claim that philanthropists, who increasingly want a say in where their money is spent, pursue whimsical, but not necessarily scientifically valid ideas. 'From an outsider looking in, what David [Sainsbury] chooses to fund may appear curious, or incoherent, or non-strategic,' says Hesketh, but the fact that it is accountable only to itself means that the Gatsby foundation, in consultation with scientific experts, is free to explore ideas not necessarily pursued by other funders.

Philanthropic funding does not normally lead to a wild goose chase, and if HHMI's cure for chronic myelogenous leukaemia is anything to go by, those geese could be laying golden eggs. With government funding likely to remain at best static, no matter what charges are laid at the door of philanthropy, it is likely to continue to be a vital force in moulding our scientific landscape.

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The medical charity HHMI has funded research into chronic myelogenous leukemia