A postdoc in policy: a dispatch from Whitehall

Georgina Drury writes about her experience working at the Government Office for Science.

As my career progressed, I took active measures to keep various doors open, even exploring the possibility of a second postdoc in the USA. There was so much to be enjoyed about being a bench scientist, but, having deliberated my career options for several years, I eventually decided that the way I felt myself best contributing to science was through a policy-based career. Moreover, by the time I had made this decision, I was confident that my active choice not to pursue a career in research was by no means a ‘second-rate’ choice, nor one that precluded contributing to science both in the UK and internationally.

In common with many other early-career postdocs, I had never had a break from my studies or research-related employment. Further questions arose. What might different work settings be like? How might intellectual challenge present itself in a less hands-on environment? What were my values, and where else might I be able to explore them? Although not an exhaustive list, being challenged, problem solving, developing strategy, working with others in a team and working with the scientific community were prerequisites to the next career step that I took, and science policy seemed to be congruent with many of these. Of the many places that carry out science policy-related work, I decided that the Government Office for Science (GO-Science) in Business, Innovation and Skills (BIS) would be as good a place as any to try and get some work experience. Pursuing this in the midst of a public sector recruitment freeze was a challenge (and I did mention I aspired to challenge...); however, fortunately, the freeze does not apply to Graduate Intern positions and the remuneration is equivalent to a graduate starting salary.

The pathway to a career in government science policy is one that is not that clearly defined. There are plenty of examples of senior scientists who have made their name in a given field and then progressed into advisory roles. With a Chief Science Adviser (CSA) in every department (except for Culture, Media and Sport – at the time of writing), there has never been a stronger network of senior scientists advising government or a stronger recognition of evidence-based thinking, scientific rigour and independent challenge being a sound basis for policy formation. However, if you are a young scientist and want to pursue a career in policy, where do you start?

Taking the policy plunge

Throughout my studies and time spent as a postdoctoral researcher in biochemistry, I held a long-standing interest in science policy. I was deeply impressed upon by the ‘Frankenfoods’ headlines around the turn of the century when doing my BSc in Plant Sciences. As a maturing young scientist, it was my perception that genetic modification was not treated as a developing technology and thus given the room to fulfil its potential; instead EU-wide policies were more reflective of the perceived negative public opinion than scientific fact. Thus my interest was stirred in the drivers that underpin science policy, and thus affect science and governance in the UK. Who makes the policy that determines in which research we invest? How can scientists have more of an impact to make sure that we maintain or increase that investment? How can scientists prevent another ‘Frankenfoods’-style debacle that arrests the path of discovery and development before it has barely begun?

GO-Science is the office of the Government Chief Scientific Advisor (GCSA), Sir John Beddington (who will be replaced by Sir Mark Walport in April 2013), and the home of science and engineering across government. The mandate from their website says:

“The key role of the GCSA and GO-Science is to ensure that all levels of government, including the Prime Minister and Cabinet, receive the best scientific advice possible, and to enable the many science-using departments across government to create policies that are supported by strong evidence and robust arguments.”

GO-Science has three main divisions; Foresight, Science Capability and Networks, and Global Issues. During my time in GO-Science,
I completed a short research project within the team who oversee the CSA network across government. I carried out research on the science advisory activities in overseas governments, completing one section on international countries that had a Chief Scientist (or the nearest thing to a Sir John Beddington equivalent), and then a section on the advisory activities of EU member states. The value of such a project to GO-Science becomes clearer when you understand their strategic objectives and the role and relevance of science in international liaisons. For the UK to become world class in the provision of science in support of government is one of the aims of GO-Science, so becoming more aware of science advisory systems internationally, models of good practice and networks with which we can interact should help this aim to be realized.

**Science for advice**

How did this research compare to carrying out laboratory-based experiments? There are obvious huge differences, and the similarities are more subtle. My research no longer required pipettes or electrophoresis equipment, but the way that my scientific training had equipped me to tackle the challenge of this project was surprisingly robust. I had a diligent approach to dealing with content-heavy, complex information and the ability to hone in on key points, my presenting skills enabled me to express my views with some degree of eloquence during meetings with senior colleagues, and I confidently ran a seminar session on international advisory activities. When I started, there was a definite adjustment period, where trust in research methods had to shift from quantitative to qualitative, and I had to get used to reading long documents without supporting figures to visualize the information, such as there are in scientific papers. I also found that I missed scientific subject matter, but, with plenty of meetings, deadlines to meet and fantastic colleagues, the work environment proved a happy one.

I learned that there are broadly two kinds of science policy; policies formulated that concern science (such as the budget in BIS for the Research Councils or the Technology Strategy Board), and policies that use science and evidence-based thinking in their formulation. In departments that are, in their very nature, heavily science-dependent, such as the Department for Energy and Climate Change, the role for science advice and a multitude of different committees is clear. But what about departments which, at face value, are less science-using, like the Foreign and Commonwealth Office (FCO)? In the context of international relations, science has been a force for diplomacy. In the wake of Japan’s Fukushima Daiichi nuclear power plant disaster...
in March last year, Sir John Beddington’s interactions with the Japanese government and the advice given to British Nationals in Tokyo reaffirmed the positive relations between the two countries and highlighted the need for a voice for science advice in the government there. This need is now being officially recognized with the reform of the Council of Science & Technology, the advisory body based within Cabinet Office. Further relevance of science to the work of the Foreign Office is the governance of marine spaces, space programmes, and global issues such as climate change, energy and food security. Furthermore, a role of the FCO CSA is to provide robust scientific challenge to policies in counter-terrorism and counter-proliferation.

The history…

As I’ve shown, scientists and advisory systems are now recognized as important across government. But before 1964, we didn’t even have a GCSA. The first official post-holder was Lord Zuckerman, who had been advising the government on a part-time basis for some years. A catalyst for raising the profile of the science advisor was the Second World War. Before and during the war, Henry Tizard and Frederick Lindemann were Churchill’s close scientific advisors, and, among many things, were associated with the development of radar, area bombing techniques and nuclear weapons research. Tizard later went on to head arguably the most charmingly named Science Advisory Committee in the Ministry of Defence: the Flying Saucer Working Party. To delve further into history is outside the remit of this short article; however, even recent history shows that proper use of scientific expertise in government hasn’t always been as rigorous as it is now. During the BSE (bovine spongiform encephalitis) crisis of the 1990s, before it was even known that the disease-causing agent was a prion, it was unequivocally stated that the end host for BSE were cows. This ‘party line’ had intentions of mitigating the damage to the UK’s beef industry; however, when the BSE crisis eventually manifested as a human health problem in the form of vCJD (variant Creutzfeldt–Jakob disease), it became an economic problem too. This contrasts with Germany where, from the outset, BSE was considered a human health problem as well as an animal health one. The cross-departmental ownership of the issues and resultant policies to prevent contamination of the food chain prevented such high levels of vCJD in the German population. Following the BSE crisis, one of the issues identified by policy academics was the time lag between the need for and the availability of scientific expertise, as the severity of the BSE and vCJD crisis was exacerbated by policy not being reformed when knowledge had progressed. The role of the crisis in promoting the value of science in government policy has been apparent in other times; more recently pandemic flu, the MMR (measles–mumps–rubella) vaccine and the volcanic ash cloud from Eyjafjallajökull are all high-profile examples.

Working with the social sciences

One of the key elements of science advice in government is the need to integrate the natural and social sciences and keep an open mind about public opinion and government priorities. Although most of the science carried out within government is social science (such as in the Department for Education, where from April 2010 to March 2011 £24.7m was spent on social research and evaluation projects, and 145 reports and briefs published), having a background in the natural sciences shouldn’t put anyone off science in government. A scientific mind with a keenness for enquiry, combined with openness to social science approaches brings valuable new perspectives to problem-solving. Furthermore, there are many cross-departmental policy issues that directly have natural and social science components. For example, the development of low-carbon technologies is of no use if society does not accept them and create a market for them, and for all our understanding of the genetic and biochemical basis of diabetes, arguably we need strong input from social scientists if we are to reduce the 10% of the NHS budget that is currently spent on managing and treating the disease.

C.P. Snow famously described the concept of the ‘two cultures’, where the sciences and humanities existed as separate disciplines. However, it is not just for the ‘two cultures’ idea that he should be remembered, for at a Harvard University Godkin lecture, delivered in 1960, he advocated that scientists should be active not just at the top, but in all levels of government. My internship in GO-Science has been an excellent bridge across the gap between bench science and policy, and I feel confident that my background in natural sciences will enable me to apply myself effectively to a policy-related career. Perhaps as time goes on, C.P. Snow’s idea for scientists in government will have greater longevity and impact than that of the ‘two cultures’, as evidence-based policy becomes embedded across the whole of government and the natural and social sciences integrate to solve cross-departmental issues. If we are to reach this point, we need people with scientific training to make their mark now.

References
1. www.bis.gov.uk/go-science/about
5. www.education.gov.uk/researchandstatistics/research

Further reading


Career tip: I found my internship on the Graduate Talent Pool website: http://graduatetalentpool.bis.gov.uk