



## MILITARY-UNIVERSITY COLLABORATIONS IN THE UK – AN UPDATE

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**From International Network of Engineers and Scientists Report, 13 April 2015**

There is a long history of military involvement with UK universities. This involvement began to change after the end of the Cold War – and especially in the early 2000s – as the government started to privatise its research laboratories, leading to a more commercial environment for military-university collaborations. During this time numerous new ‘partnerships’ were founded involving the universities and the Ministry of Defence (MoD) and/or major arms corporations, such as BAE Systems and Rolls-Royce. These schemes have evolved in the years since, but official enthusiasm for university-military collaboration continues, and some government advisors are actively pushing for it to be expanded.

### **Every university?**

There have been several studies of military involvement in UK universities over the past decade – the most detailed being led by Scientists for Global Responsibility (SGR), [1,2,3] Campaign Against Arms Trade (CAAT), [4,5] and the Nuclear Information Service (NIS). [6] These studies have examined a range of public- and private-funded research and teaching programmes involving military interests in 59 universities across the UK – nearly half the total number.

All but one of the universities examined have received at least some military funding since 2000 – be it from the UK Ministry of Defence (or one of its research laboratories), a UK arms company, or an overseas military source. Based on these studies, it is reasonable to conclude that the overwhelming majority of UK universities have at least some links to military interests – and some universities have extensive links.

### **How much military funding?**

Using the Freedom of Information Act, several of the studies listed above were able to obtain specific information on funding levels at individual universities, although the data has been patchy due to incomplete record-keeping or, in some cases, outright obstruction by university administrators.

Universities which have tended to receive the highest levels of military funding include Cambridge, Cranfield, Imperial College London, Oxford and Sheffield.

As an example of the levels of funding per university, a 2012 study [7] found that 17 of the UK’s leading research universities received a total of over £83 million (about \$140m) over the three years up until 2011. The amounts provided to each university varied from £15.2m for Imperial College London down to £67,000 for Durham University. Six other universities – Birmingham, Glasgow, Liverpool, University College London, Manchester and Warwick – refused or were unable to provide data on their military collaborations. This lack of transparency is especially poor for publicly-funded universities.

From this data, the average military funding per university per year for the period 2008-2011 can be estimated to be around £1.5m (\$2.4m). This level is somewhat lower than the £2.1-2.2m found in previous reports by SGR and CAAT, [8] but given variations in the methodologies of the different studies and uncertainties in the data, it is not too dissimilar.



A 2014 study [9] looked specifically at funding from the Atomic Weapons Establishment (AWE), which develops, manufactures and maintains the UK's nuclear warheads. Disturbingly, it found that over 50 UK universities received AWE funding during the period 2010-12. Furthermore, five of these universities – Bristol, Cambridge, Cranfield, Heriot-Watt and Imperial College London – had formed a 'strategic alliance' with AWE, receiving a total of £15m (about \$24m) over the period.

### **Where does the funding come from?**

Military funding for UK universities is provided by:

1. UK government military organisations – principally, the Defence Science and Technology Laboratories and the Atomic Weapons Establishment;
2. major arms companies, both UK and overseas – such as BAE Systems, Rolls-Royce, Boeing, and Lockheed Martin; and
3. other overseas organisations – such as the US Department of Defense.

The funding levels of the first two groups have been investigated more deeply than the third in the six studies listed earlier. Also of note is that academic funders – such as the Engineering and Physical Sciences Research Council (EPSRC) – co-fund numerous research projects with military funders.

### **What is the funding used for?**

Funding from military sources at UK universities tends to be concentrated in engineering departments – covering aerospace, civil, electrical, electronic, marine, mechanical and chemical – with computing, physics, maths and chemistry departments also receiving significant amounts. [10] The research funded tends to be mainly applied work, although basic research is also funded. It is claimed [11] that in general the work is not classified, as secret work is carried out in government or industry laboratories.

The SGR, CAAT and NIS studies provide numerous examples of the research funded by military interests. For instance, one large research programme was FLAVIIR, [12] jointly funded by BAE Systems and the EPSRC, to investigate the aerodynamics of unmanned aerial vehicles ('drones'). Total funding was over £6m and it involved ten universities including Cranfield, Cambridge, Imperial College London, Manchester and Southampton. Another example is the Institute of Shock Physics (ISP), a multi-million pound research centre at Imperial College London part-funded by AWE. [13] The ISP researches the physics of shock waves, high velocity collisions, and heat and pressure extremes. This can help improve the understanding of nuclear and conventional explosions, but it can also be useful in understanding earthquakes and extreme weather events.

### **Justifications?**

UK universities that receive funding from military sources generally justify their actions using one of more of the following arguments:

1. The funding is only a small percentage of the university's total funding, so it has little effect on its overall research agenda.
2. The military-funded projects benefit Britain's national security.
3. The funding is for research that has a number of applications, both military and civilian.

But do these arguments stand up to scrutiny? For claim (1), it has to be remembered that the military funding is targeted on particular departments, especially engineering and computer science. In some university departments, the military funding can represent a large proportion of the annual budget and so this can shape the research priorities of that department – gearing them towards a more militaristic agenda. It also important to bear in mind that even small amounts of funding can



be influential within a university department, creating sympathy for the funders' perspective – something which is especially important for companies with controversial ethical records.

Regarding claim (2), about Britain's national security, it should be remembered that the arms corporations that fund university R&D are generally major exporters. Official documents [14] have shown how UK military equipment has been exported to governments with poor human rights records – including those which brutally suppressed protests during the Arab uprisings in 2011, such as Libya, Bahrain and Saudi Arabia. It is therefore very suspect to claim that a given piece of military research will necessarily be good for Britain's security.

Regarding claim (3), concerning 'dual-use' technologies, it is certainly true that to say that research can lead to a number of applications. However, if key funding is provided by a military organisation, then it is much more likely that the application will be for military purposes.

### **UK funding for military R&D**

Of course, behind the military funding for universities is the much larger question of military funding for research and development as a whole. By far the biggest recipients of this funding are the R&D labs within industry. Most military science and technology funding in the UK comes from the Ministry of Defence, and most of this goes directly to arms companies, with much of the remainder going to the publicly-owned Defence Science and Technology Laboratory.

In the UK, the latest official statistics show that public funding for military R&D in 2012 amounted to approximately £1,460 million. [15] While this is a very large figure, the good news is that the level of this funding has been falling for much of the last 25 years. [16] In contrast, in the last decade, public funding for civilian R&D has grown significantly, meaning that military R&D funding has fallen to 16% of the total public spending on R&D rather than around 50% at the height of the Cold War.

However, there is still a lot to be concerned about. To begin with, recent government policy has been aiming to reverse at least some of the fall in post-Cold War spending. The first evidence of this is a rise of over £150m in government military R&D spending between 2011 and 2012, while public civilian R&D budgets were cut by a similar amount. [17] The second is the increase in spending on civilian R&D on 'security technologies' – which includes crowd control and surveillance, as well as cyber security. The military is in a strong position to make use of such technologies for supporting its own activities. The third concern is the increasing pressure on universities to take military funding. One particularly worrying development is the recent call from the Defence Scientific Advisory Council for the Ministry of Defence to fund more 'opportunity-led' research in universities. [18]

So the military influence on UK universities – and science and technology more broadly – remains powerful. Groups such as SGR and CAAT – especially through its universities network [19] – are very important in helping to keep up the resistance to this influence.

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