Funding for Biochemical Research: how Things have Changed

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I was on staff at the University of Adelaide for 30 years until 1992, so what I have to relate is essentially from that perspective. When I was a post-war research student in the University of Melbourne Biochemistry Department, I really had no idea where research money came from. For 20 years following the end of World War II, the bulk of monies for academic research came from Government sources under the control of Vice-Chancellors and their research committees plus some benefactions and foundations. If you were really top-notch in biochemistry, there was the possibility of large program grants such as from the USA National Institutes of Health, although that ceased in 1963 for some years. When I moved to Adelaide, I decided to undertake biochemical research on keratinisation using the sheep as the animal model and that had the advantage of access to funding from the Australian Wool Corporation.

The major shift in funding mechanisms for universities, (leaving out ANU as a special case) was the formation of the Australian Research Grants Committee (ARGC), now the Australian Research Council (ARC). The establishment of that new style for distributing research funds, similar to that of the US National Science Foundation, was the result of Bob Robertson (the late Sir Rutherford Robertson) being personally invited by John Gorton, the Minister in charge of Education and Research in 1965, to take on the task. At that time, Robertson was Professor of Botany in the University of Adelaide, and he saw the organisation through its difficult early days as Chairman. So research funding in universities from the mid-1960s underwent a major change, becoming nationally competitive based on qualities of project and investigator assessed through the peer review mechanism. There were early attempts by Government to change the priorities of the ARGC for more practical outcomes, but these were vigorously resisted.

On a personal note, I was moderately successful in obtaining ARGC and ARC funding, but one amusing instance stands out in my memory. In front of the panel reviewing my application on avian keratinisation and after a brief presentation, the opening gambit from one member was, "You've been flogging that horse for quite a while now"! That was true, and I could add that after some success behind me, I later returned to sheep follicles, but biologists continue using the avian system for studying cell signalling in development. So the flogged horse has stood the test of time.

The changes in funding saw the disappearance of universities providing each academic a laboratory assistant and a decrease in the provision of general infrastructure support. Team research for competitiveness on the global scale has become supreme in biochemistry and molecular biology and the role of the 'man and boy' approach has all but ended. Brilliant ideas can be generated, but their investigation increasingly needs resources of expensive equipment that would not be met under the old system, plus a critical mass of skilled investigators. Concentrated funding for special centres with one-line budgets can be enormously successful in boosting progress within a research theme, but sufficient funding must remain in the system to enable smaller groups to prosper so that good ideas can be tested. It is tough for the young academic who has to break into a funding system in which only some 20% of applicants are successful. Notwithstanding that, there is the strongly held view that it is important for a department teaching undergraduates to have sufficient involvement of staff in research to remain strong in teaching. So here is a conflict – academic life has become more demanding on time with increased teaching loads, the demands of post-graduate supervision and increased accountability through administrative mechanisms. There is more desk rather than bench work and with secretarial assistance all but gone – academics type their own papers, grant applications and correspondence. The fraction available for research is significantly less than the acknowledged allotment of 50% of an academic's time and there is therefore a decreased ability to achieve and maintain research excellence. One suspects that politicians just don't appreciate these problems and academia has a continuing task to defend its position.

A significant shift in the funding and research landscape is the involvement of academic researchers with practical outcomes and the biotechnology industry. An early player in this was Bresa (Biochemical Research Enterprises South Australia) established as a company in the University of Adelaide Department of Biochemistry in 1982 through the nucleotide and plant viral research of Professor Bob Symons. It was the first biotech company in Australia to supply radionucleotides and other reagents for molecular biologists. It later became Bresatec and then Bresagen and is now a public company with a different R&D function. The past 20 years has seen many more similar enterprises established in Australia and there is a greatly increased interaction with universities that indeed provide the feedstock of graduates and ideas for the companies in addition to the flow of postgraduates into research organisations. The advance of biotechnology is a good thing provided that the source of funds for fundamental research is not overwhelmingly traded for sources of funds for relatively short-term projects from industry. CSIRO appears to be increasingly moving to R&D and there can be only so much of available industry money to go round.

The funding of research is likely to undergo an even greater shift in the next year with the Government's recent Australian Research Quality initiative to rank the universities for the distribution of resources. The outcome is unclear but one possible option is a division into research concentration in a few universities and teaching-only in others. The universities will no doubt be doing their best to put themselves in the best rating position.

One great danger I think, for the future of scientific research as a career, is the prevalence of employment contracts that tend to become long-term. Unless this is redressed to provide greater security and opportunity to advance, the future seems to me to be somewhat bleak. The small group of the most brilliant of young biochemists aspiring to research careers will take up short term contracts before moving on but for the bulk of skilled and enthusiastic graduates, the lack of secure job opportunities could turn many away with the consequent impediment to the much canvassed aim of being a 'clever country'.

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