

COUNCIL OF HEADS OF AUSTRALIAN HERBARIA (CHAH)

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Council of Heads of Australian Herbaria Submission to: Evaluation of the Knowledge and Innovation Reforms – Reviewing Australia’s Block Research Funding Schemes

SUMMARY

- The non-university sector (e.g. herbaria and museums) is becoming an increasingly important contributor to research training and research performance.
- The capacity for the non-university sector to fund research and training is extremely limited, and this is inhibiting the expansion of Australian science.
- Advancement of Australian knowledge and innovation requires greater equity in the distribution of block research funding.
- In particular, the non-university sector should be eligible for block research funding through DEST, or via an alternative scheme.
- DEST should initiate discussions between the Commonwealth and States/Territories to devise a scheme acceptable to all jurisdictions.
- While journal publication rates are a useful indicator of performance, inappropriate SI rankings and implicit bias towards journals published outside Australia, can unfairly and erroneously bias assessments.
- As a related issue, tertiary training in plant systematics is becoming increasingly dependent upon herbarium staff and other resources, without equitable compensation for these contributions. This too requires attention by DEST.

BACKGROUND

The Council of Heads of Australian Herbaria (CHAH) is the peak body in Australia for managers of Australian herbaria and their associated research programs. The combined collections of the Australian herbaria currently total over six million preserved plant specimens, and more than 100 scientists and technical officers are employed to curate and utilise these collections for research.

Herbaria are managed within a range of State, Territory and Commonwealth government departments, including CSIRO and the Department of Environment and Heritage in Canberra. For more information about CHAH see: www.chah.gov.au.

Note that some member herbaria are administered within the university system, but this submission focuses on issues relevant to those in the non-university sector.

ADDRESSING TERMS OF REFERENCE

Evaluation context

Linkage and collaboration: The non-university sector is making a major contribution to the outputs of the university sector, and that needs to be more transparent in the funding arrangements. Measurement of performance should take into account the contributions of partners and collaborators, including herbaria and museums. Linkages and collaboration with herbaria are critical for many areas of biological science but they are not being considered in terms of infrastructure implications (see below).

Overarching issues for Performance-based Funding

Modes of funding: Herbaria, through their parent organisations, may apply directly for ARC research funding but they are not eligible for RTS, IGS or RIBG funding. However if they apply through a university, there is an opportunity for some of this block funding to be reallocated to the herbarium. This is *ad hoc* and requires local arrangements between individual herbaria and universities. As yet there has been little 'sharing' of this infrastructure money even when a project clearly uses herbarium rather than university resources. Where sharing of funds does occur, it creates tensions within universities due to its impact on funding needed to support key staff. Even though DEST is primarily a university sector funding organisation, the choice is between black economy deals (with students used as bartering chips) or a transparent system that would encourage further expansion of this sector.

These arrangements are hardly satisfying and should be reviewed. Herbaria are powerful collaborators, providing high quality researchers and access to extensive scientific collections, facilities and data. If universities, and Australian science, are to benefit from herbarium expertise, the block infrastructure funding must extend to the non-university sector.

One possibility could be a Commonwealth-State/Territory arrangement to provide matching infrastructure support for State/Territory agencies. Such arrangements need to be negotiated at a high level and could be led by DEST.

I should stress that CHAH's preferred outcome is an expansion in Australian research outputs (both in quantity and quality), funded through additional resources into the whole sector rather than redistributing existing funds.

Role of publications: It is worth noting that SI rankings do not adequately assess performance in systematics research, the primary area of research in herbaria. They do not take into account the longer half-life of systematics papers and the differing patterns of citation compared with, for example, medical research.

Another issue of concern to CHAH members is the implicit downgrading of research published in 'Australian' journals. The appropriate journal for much systematics research is either a herbarium journal or a CSIRO Publishing/Australian Academy of Science scientific journal (such as *Australian Systematic Botany*). The publication process and refereeing of these journals is equivalent to that of similar scientific journals in this field published overseas. There is sometimes an incorrect distinction made between a journal published in Europe or North America and one in Australia: the first is sometimes described as 'international' when it is clearly not more so than an Australian journal. I therefore request that there be no explicit or implicit bias in the assessment of scientific journals based on spurious criteria such as 'internationalness'.

Also related to how publication outputs are assessed is a concern with what constitutes a research article. It has been the experience of our members that original contributions to 'Floras' are not considered to be research publications. Where these are referred, they should be assessed as equivalent to any other original research published as a book chapter.

Research Training Scheme

Organisations represented by CHAH co-supervise many research students, often providing the primary supervisory role. Staff at the Royal Botanic Gardens and Domain Trust, for example, co-supervised 55 honours and higher degree research (HDR) students in 2002-2003. Of these, about half spent more than 50% of their time working at the Trust (rather than at the university at which they were enrolled). In most cases, the Trust received only token support for infrastructure (in the order of \$1-2K per year per student) but covered all office, IT, laboratory and field work costs.

Negotiations have commenced with a number of universities to share their research infrastructure (particularly RTS) more equitably when a student is co-supervised. However the system would be improved if infrastructure costs could be paid directly to the non-university sector. The existing arrangements put a strong onus on herbaria to convince universities that it is in their interest to encourage the co-supervision of research students with herbarium scientists. Of course not only in the interest of their reputation and their contributions to science, but in their funding base. Clearly Australian science benefits from such arrangements but at present the funding arrangements are at best *ad hoc*, and at worst parasitic on the non-university sector. If this is not resolved, herbaria may have to curtail their contributions to research training, and/or target universities that give us the best compensation for our efforts (rather than choosing the best university for the research or the student).

Gaps in university training

Teaching positions: CHAH is extremely concerned about the dramatic reduction in university staffing for certain areas of undergraduate and research training. Although not explicitly part of this review, this trend is certainly related in part to the importance of grant success as a major component in the calculation of infrastructure funding (rather than focussing on a well-balanced, and quality, teaching portfolio).

Of concern to CHAH is the loss of what might be called 'whole organism' biology from many universities. The research field of systematics has suffered particularly in recent years and herbaria are being asked (and are feeling obliged) to fill these gaps.

In general, herbarium scientists provide small blocks of lectures at industry rates. There are also more substantial contributions, such as the University of New England/Royal Botanic Gardens and Domain Trust/Australian Museum Biosystematics course. However in general the herbaria are poorly recompensed for their teaching, and received none of the infrastructure benefits provided to the universities (whether directly for teaching or indirectly through research training funds). There also seem to be cultural impediments to providing a contract teaching course to a range of universities, but that may be beyond DEST's control.

High quality research training needs an expert academic in the university system, and access to the best available expertise and training (which may be in a herbarium or museum). As with student supervision, herbaria must soon evaluate the cost-benefit of propping up the university system in areas such as plant systematics. If herbaria are to continue in what is a mutually beneficial, but lop-sided, relationship, there must be a more equitable distribution of education and research funding.

Post-doctoral positions: Another related issue is the shortage of postdoctoral level positions in the university and non-university sector. It is now relatively easy to fund a higher degree research student, but extremely difficult to provide a career structure beyond this. DEST clearly has a responsibility in this area but it is presumably outside the scope of this review (although related to training in a general sense). I flag it as another issue of concern to CHAH, and one that may have implications if there are changes to the provision of block research funding.

Yours sincerely,

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