



Overview and Key Findings

Performance-Based Research Fund

EVALUATING RESEARCH EXCELLENCE:

the 2003 assessment

The full report of the 2003 Quality Evaluation, *Evaluating Research Excellence: the 2003 Assessment*, is available at www.tec.govt.nz

Contents

Introduction	1
The Performance-Based Research Fund.....	3
Key facts	4
Assessment process	5
Results	6
Key findings	8
Funding allocations	12
Issues	13

ISBN 0-478-08750-0
Catalogue number TE 90

Published April 2004 by
Tertiary Education Commission
Te Amorangi Mātauranga Matua
National Office
44 The Terrace
Wellington New Zealand
PO Box 27-048
www.tec.govt.nz

This is an overview and summary of the key findings contained in the Performance-Based Research Fund (PBRF) report *Evaluating Research Excellence: the 2003 Assessment*.

The principal aim of the PBRF is to improve the quality of New Zealand's academic research, but it does not directly address the equally important issue of teaching quality.

The results of the 2003 Quality Evaluation are a comprehensive assessment, for the first time, of the quality of academic research in New Zealand. This provides a sound basis on which to improve quality, and furnishes a wealth of information for tertiary education organisations (TEOs) themselves and for their students and external stakeholders.

The 2003 Quality Evaluation shows that there are a substantial number of academics in TEOs undertaking research of a world-class standard. The PBRF results reveal significant research strength in most of the country's universities and in many subject areas — areas as diverse as philosophy, earth sciences, history, chemistry, and ecology.

The PBRF rewards research activities of national and international excellence. It therefore introduces a powerful new incentive for TEOs to concentrate their research around areas of excellence. They are encouraged to aim for depth rather than breadth in their research capacity. It is the TEC's intention that the particular areas of specialisation chosen by TEOs will be reflected in their future Profiles, and that a balance of research activity is maintained across the whole tertiary education system during a steady process of specialisation and quality improvement. This may require new collaborative arrangements wherever excellent research is required to support teaching, particularly at the postgraduate level. New arrangements are likely to be needed among universities, between other TEOs and universities, and between universities and Crown research institutes to improve collaboration.

Variations in scores among disciplines and between TEOs are to be expected, and reflect a healthy state of differentiation and specialisation within a tertiary education sector. The results of the 2003 Quality Evaluation process do, however, challenge some views held about the nature of tertiary education in New Zealand and pose some fundamental questions for policymakers, TEOs, stakeholders and the nation as a whole to consider.

Kaye Turner
(Acting Chair)
on behalf of the Tertiary Education Commission
Te Amorangi Mātauranga Matua

Tertiary Education Commission Te Amorangi Mātauranga Matua (TEC)

The TEC is responsible for funding all post-compulsory education and training offered by universities, polytechnics, colleges of education, wānanga, private training establishments, foundation education agencies, industry training organisations and adult and community education providers.

One of TEC's key roles is the implementation and monitoring of the Performance-Based Research Fund, the new system for funding research in our tertiary education organisations (TEOs). Assessing the quality of research being undertaken by academics and researchers in New Zealand's tertiary education sector is a fundamental step in being able to reward and encourage research excellence.

Tertiary education organisations

TEOs are public, private, or community-based organisations that offer tertiary education or tertiary related services. They include universities, polytechnics, wānanga, industry training organisations and private training establishments. Of the many TEOs in New Zealand, 45 are eligible for PBRF funding, although not all took part in the 2003 assessment.

The Performance-Based Research Fund

The purpose of conducting research in the tertiary education sector is twofold: to advance knowledge and understanding across all fields of human endeavour; and to ensure that learning, and especially research training at the postgraduate level, occurs in an environment characterised by vigorous and high-quality research activity.

The primary goal of the Performance-Based Research Fund (PBRF) is to ensure that excellent research in the tertiary education sector is encouraged and rewarded. This entails assessing the research performance of TEOs and then funding them on the basis of their performance.

The PBRF has three components: a periodic Quality Evaluation using expert panels to assess research quality based on material contained in Evidence Portfolios; a measure for research degree completions; and a measure for external research income. In the PBRF funding formula, the three components are weighted 60/25/15 respectively.

The PBRF is managed by the Tertiary Education Commission Te Amorangi Mātauranga Matua (TEC), and the new funding arrangements are being phased in between 2004 and 2007.

The government's decision to implement the PBRF was the product of detailed analysis of the relevant policy issues and options by the Tertiary Education Advisory Commission (2000-01), the Ministry of Education, the Transition Tertiary Education Commission (2001-02), and the PBRF Working Group (2002).

Evaluating Research Excellence: the 2003 Assessment presents the results of the first Quality Evaluation, conducted during 2003, together with the first sets of results for research degree completions and external research income, based on 2002 data. It also includes data on the indicative 2004 funding allocations for TEOs that participated in the PBRF. The full report is available online at www.tec.govt.nz

It must be emphasised that there has been wide consultation with the tertiary education sector during the process of policy development and implementation, and this will continue during the future evaluation of the PBRF.

Key facts

Of the 45 PBRF-eligible TEOs, 22 participated in the 2003 Quality Evaluation. The 22 comprised eight universities, two polytechnics, four colleges of education, one wānanga, and seven private training establishments.

Under the agreed procedures, participating TEOs undertook an initial assessment of the Evidence Portfolios prepared by their PBRF-eligible staff and assigned each portfolio one of four possible Quality Categories (“A”, “B”, “C”, and “R”). Those assigned an “A”, “B” or “C” were submitted to the TEC for assessment by a peer review panel. Data were supplied to the TEC on the Evidence Portfolios that were assigned an “R”.

Of the 8,013 PBRF-eligible staff in the participating TEOs, 5,771 had their Evidence Portfolios assessed by a peer review panel. There were 12 such panels covering 41 designated subject areas. The work of these expert panels was overseen by a Moderation Panel comprising the 12 panel chairs and an independent chair (Professor Paul Callaghan). Altogether, there were 165 panel chairs and members, 33 from overseas.

One TEO that did not participate in the 2003 Quality Evaluation (International Pacific College) submitted returns in relation to research degree completions, another TEO (Te Wānanga o Raukawa) submitted a return for external research income. Altogether, therefore, 24 TEOs are currently participating in one or more of the three components of the PBRF.

The external research income generated by the 15 TEOs that lodged returns totalled about \$195 million for the 2002 year. All but about \$1 million was generated by the eight universities.

Research degree completions were notified by 13 TEOs. Roughly two-thirds of the completions were for masters courses, with the remainder being doctorates.

The TEC welcomes the fact that so many TEOs chose to participate in the PBRF, often in the knowledge that their results were unlikely to compare favourably with some other TEOs.

Confidence in the assessment process

The TEC, in consultation with the Ministry of Education, commissioned a series of audits in order to ensure that the Quality Evaluation was conducted in a robust, fair and consistent manner and that the data upon which the 12 peer review panels based their assessments were of the highest possible integrity.

An audit of nominated research outputs conducted by the National Library of New Zealand identified some ineligible entries in Evidence Portfolios, and a small number of staff were deemed to be ineligible based on a staff eligibility audit led by the Ministry of Education. Although the audit of the peer esteem and contribution to research environment components of Evidence Portfolios was unable to confirm any ineligible entries, it proved invaluable for identifying process improvements for subsequent Quality Evaluations.

The Office of the Controller and Auditor-General provided independent assurance over the processes for the TEC's evaluation of research proposals relating to the PBRF, and was satisfied that the processes were established and conducted in accordance with the guidelines issued by the TEC and generally conformed to good practice.

In summary, the TEC is confident that the peer review panels undertook their assessment of Evidence Portfolios in accordance with the assessment framework and that the results of the 2003 Quality Evaluation provide a fair reflection of the quality of research being undertaken across the tertiary education sector. The TEC is also confident that the data supplied by TEOs in relation to external research income and research degree completions are reliable.

Interpreting the results

The results of the 2003 Quality Evaluation are outlined in detail in Appendix A of the full report. They are also discussed and analysed in Chapter 5. The results include data on:

- the overall distribution of Quality Categories (“A”, “B”, “C”, and “R”) across the tertiary education sector, as well as for each of the 22 participating TEOs, 12 peer review panels, 41 subject areas, and 310 nominated academic units;
- the quality scores of the participating TEOs, peer review panels, subject areas, and nominated academic units (the method for calculating the quality scores is explained in Chapter 4);
- the number of PBRF-eligible staff for each of the participating TEOs, peer review panels, subject areas and nominated academic units; and
- the number of Evidence Portfolios assessed for each of the participating TEOs, peer review panels, subject areas and nominated academic units.

Because of the complexity of the assessment system, simple characterisations of “A”, “B”, “C” and “R” are difficult to make. In very broad terms:

- “A” signifies research of a world-class standard
- “B” signifies very good quality research
- “C” signifies good quality research
- “R” signifies that the Evidence Portfolio did not meet the requirements for a “C”.

It should be noted that not all staff who produced research outputs that were deemed to be of a world-class standard secured an “A”. In many cases, for instance, high-calibre researchers were assigned a lower Quality Category because they failed to demonstrate either the necessary level of peer esteem or a contribution to the research environment of the standard required.

It is important to recognise that “R” does not necessarily signify “research inactive” or indicate poor-quality research. The “R” category includes many new and emerging researchers of high potential. Being in the early stages of their research career, most had not yet been able to acquire a substantial measure of peer esteem or make a major contribution to the research environment.

The results of the 2003 Quality Evaluation, and especially the quality score data, reflect the nature of the assessment methodology that has been employed and the particular weightings applied to the four Quality Categories – ie “A” (10), “B” (6), “C” (2), and “R” (0). Had the methodology (or weighting regime) been different, so too would the results.

Under the approach adopted, the maximum quality score that can be achieved by a TEO (subject area or nominated academic unit) is 10. In order to obtain such a score, however, all the PBRF-eligible staff in the relevant TEO would have to receive an “A” Quality Category. With the exception of very small academic units, such an outcome is extremely unlikely (ie given the nature of the assessment methodology adopted and the very exacting standards required to secure an “A”). No sizable academic unit, let alone a large TEO, could reasonably be expected to secure a quality score even close to 10. Much the same applies to quality scores at the subject-area level. Likewise, there is no suggestion that a quality score of less than 5 constitutes a “fail”. These considerations are important to bear in mind when assessing the results of the 2003 Quality Evaluation.

Furthermore, the quality scores provide only one way of depicting the results and do not furnish a complete picture. For instance, the subject area of education achieved a relatively low quality score (1.02 FTE-weighted), yet it contains no less than 24.4 A-rated staff and 70.3 B-rated staff (FTE-weighted). The low quality score reflects the very large number of staff whose Evidence Portfolios were assigned an “R”.

Note that in determining the appropriate Quality Category to assign to an Evidence Portfolio, panels were required to consider the quality of the three components of each portfolio – research output, peer esteem, and contribution to the research environment.

For comparative purposes, data are presented using two measures of the number of PBRF-eligible staff: full-time-equivalent (FTE) and non-FTE.

Key findings

The results of the 2003 Quality Evaluation show that:

- The FTE-weighted quality score for the 22 participating TEOs is 2.6 (out of a potential score of 10).
- There are a substantial number of staff in TEOs undertaking research of a world-class standard – of the 8,013 PBRF-eligible staff, 5.7% (FTE-weighted) were assigned an “A” Quality Category by a peer review panel.
- There are significant numbers of high-calibre researchers in a good range of the 41 subject areas. For instance, eight subject areas have more than 20 A-rated staff (FTE-weighted) and 13 subject areas have more than 50 B-rated staff (FTE-weighted). This can be seen in Figures 1 and 2
- A relatively high proportion of PBRF-eligible staff (39.9% FTE-weighted) were deemed to not yet meet the standard required for achieving a “C” Quality Category, and were assigned an “R”. It is important to stress that there is a large proportion of new and emerging researchers, many of high-calibre and potential, among these “R”s.

Figure 1:
Volume (≥ 20) of “A”s by Subject Area, FTE-Weighted

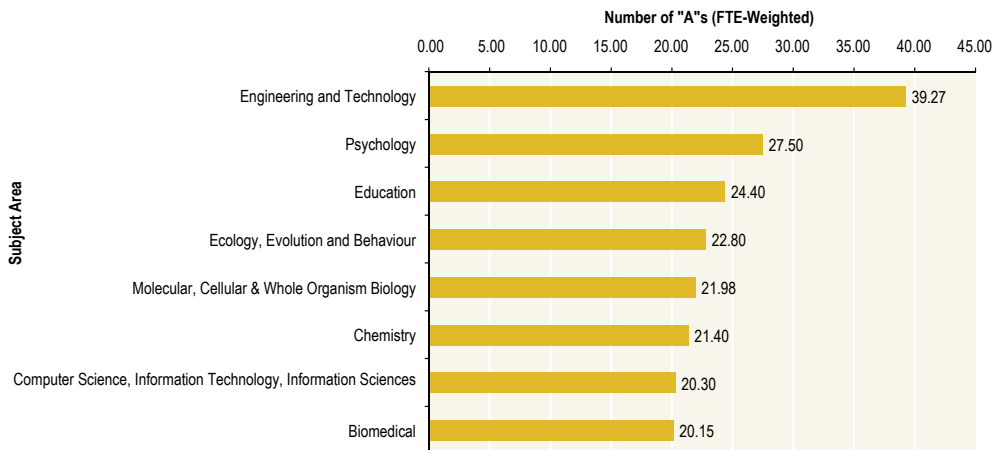
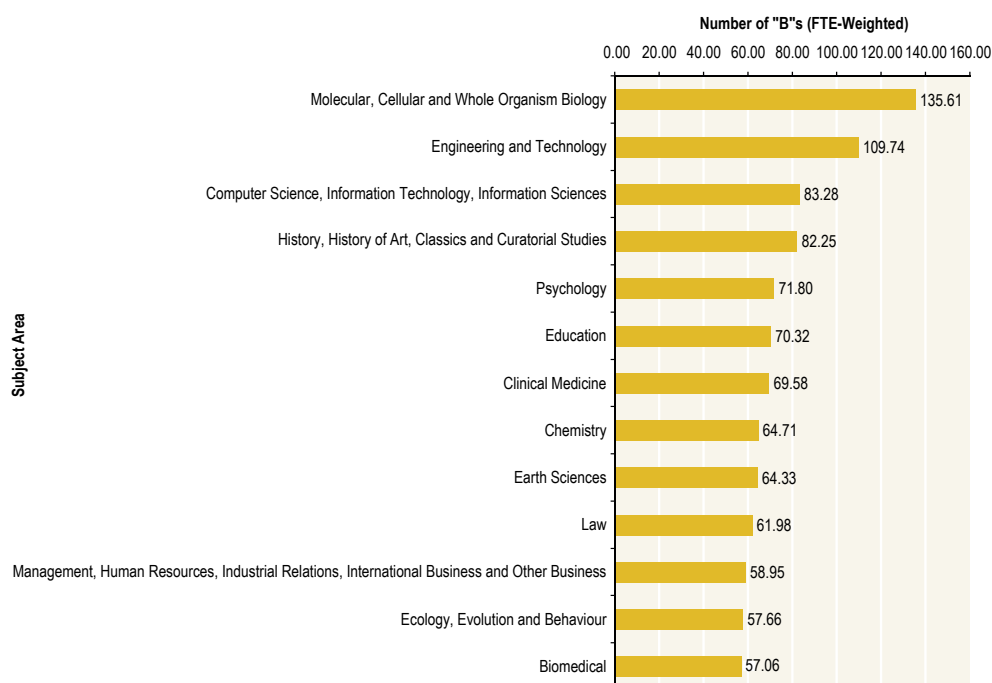


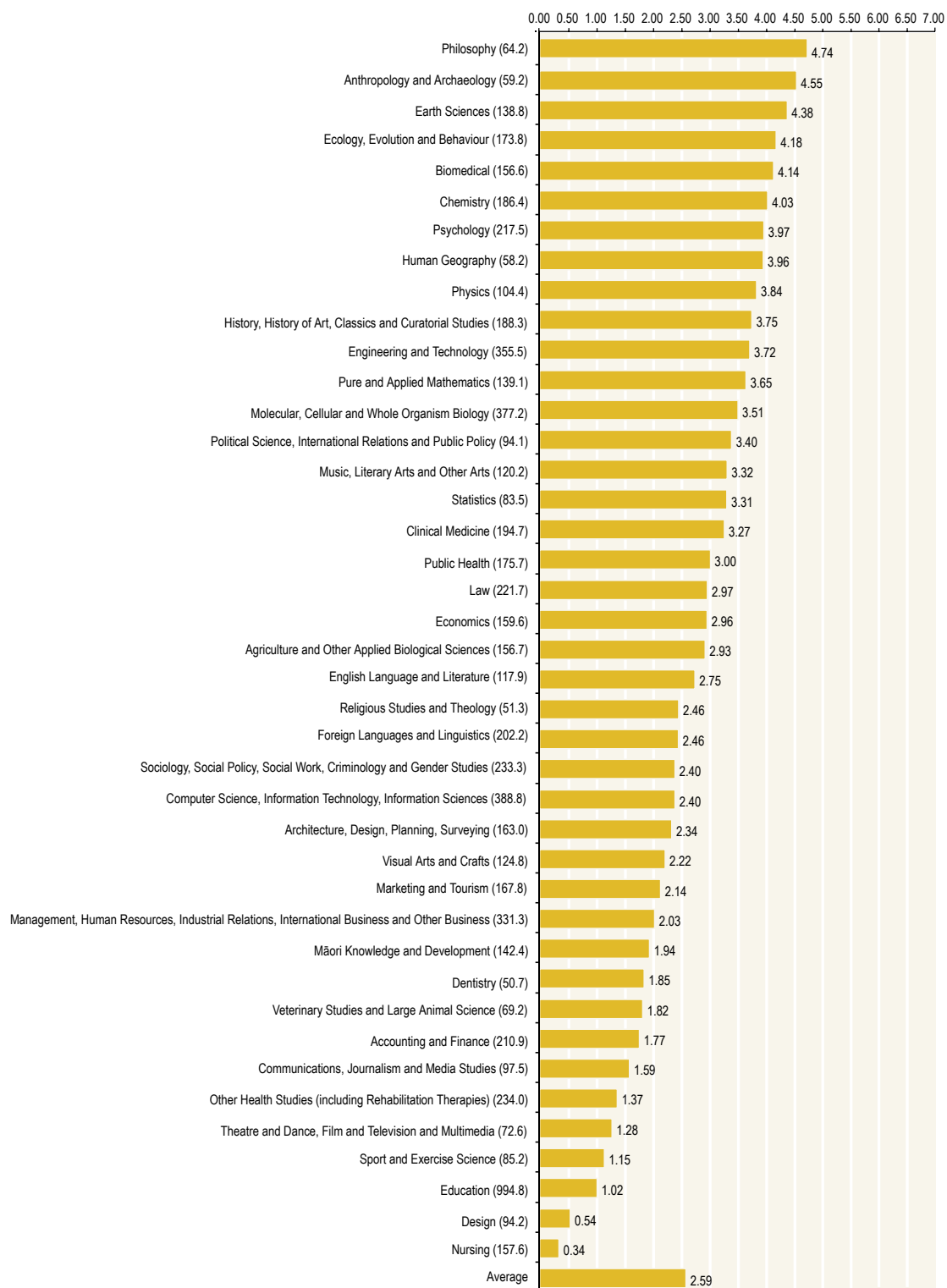
Figure 2:
Volume (≥ 50) of “B”s by Subject Area, FTE-Weighted



- There are marked differences in the research performance of the 41 subject areas (see Figure 3). While some subject areas have a substantial proportion of researchers in the “A” and “B” Quality Categories, others have hardly any. Altogether, 11 of the 41 subject areas have a quality score of less than 2.0 and thus an average score within the “R” range (0 to 1.99).
- In general, the best results were achieved by long-established disciplines with strong research cultures, such as philosophy, chemistry and psychology. Many of the subject areas with low quality scores are newer disciplines in New Zealand’s tertiary education sector, such as design; nursing; sport and exercise science; and theatre and dance, film and television and multimedia.
- Relatively high quality scores were achieved by subject areas within the biological and physical sciences, the humanities, and the social sciences. Against this, with only a few exceptions, subject areas in the fields of business and the creative and performing arts had below-average quality scores.

Figure 3: Subject-Area Ranking – All Subject Areas

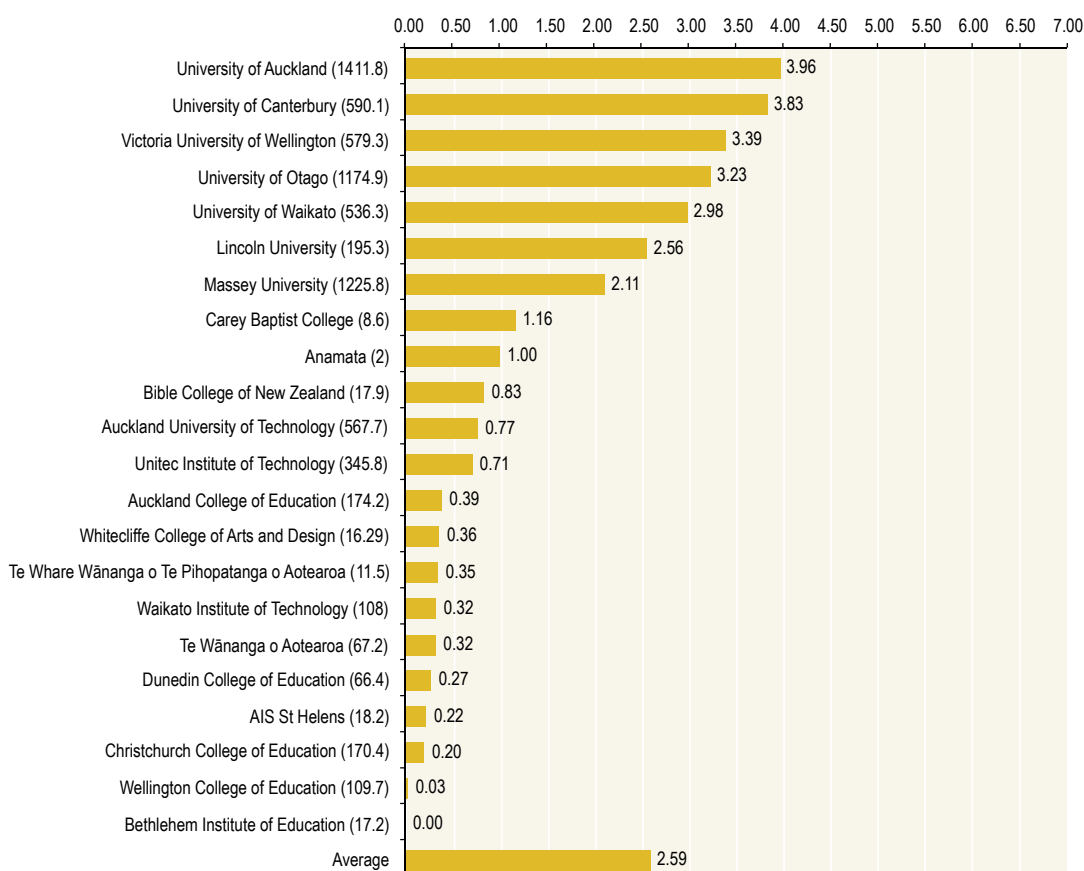
Numbers alongside bars indicate FTE-weighted quality scores
Numbers in parentheses indicate total number of PBRF-eligible FTE-weighted staff



- As with subject areas, there are marked differences in the research performance of the 310 academic units nominated for reporting purposes by participating TEOs. On the one hand, there are 21 nominated academic units with a quality score of at least 5.0. On the other hand, there are 80 units with a quality score of less than 1.0.
- There are major differences in the research performance of the participating TEOs (see Figure 4). Seven of the eight universities achieved higher quality scores than the other 14 TEOs. Relatively few researchers outside the university sector secured an “A” or “B” Quality Category, and some TEOs have very few researchers rated “C” or above.

**Figure 4:
TEO Ranking – All TEOs**

Numbers alongside bars indicate FTE-weighted quality scores
Numbers in parentheses indicate total number of PBRF-eligible FTE-weighted staff



- On virtually any measure, the University of Auckland is the country's leading research university. Not only did it achieve the highest quality score of any TEO, but it also has by far the largest share of A-rated researchers in the country (35.9%, FTE-weighted).
- Research performance within the university sector is very uneven. For instance, 31.7% of PBRF-eligible staff (FTE-weighted) in the university sector were assigned an "A" or "B" Quality Category. The range, however, extended from 47.5% for the highest-scoring university to 6.3% for the lowest-scoring university. Likewise, those assigned an "R" Quality Category varied between 15.7% and 76.2%.

Funding allocations

Funding allocations through the PBRF will not be fully implemented until 2007. In the meantime, the bulk of the research funding will continue to be allocated through degree "top up" funding arrangements (ie on the basis of student enrolments). These will be phased out gradually and replaced by funding based on the PBRF funding formula. The funding rates for the "top up" component of undergraduate degree and research postgraduate degrees will reduce to 90% of the 2003 rates in 2004, to 80% in 2005, and to 50% in 2006; and the "top ups" will be completely phased out in 2007.

In the 2004 funding year, the funding allocated by means of the three PBRF performance measures is \$18.2 million (based on current forecasts) and is derived from 10% of the degree "top up" funding, together with additional funding from the government (through the 2002 and 2003 Budgets).

Issues and implications

While the results of the 2003 Quality Evaluation reveal significant research strength in a substantial number of subject areas and in most of the country's universities, there is undoubtedly room for improvement.

In other countries where periodic evaluations of research performance are conducted, such as Britain and Hong Kong, significant improvements have occurred in the quality of research since the commencement of the assessment regimes. If this experience is replicated in New Zealand, then the outcome of the proposed 2006 Quality Evaluation should show an improvement on the 2003 results.

In the meantime, the results of the 2003 Quality Evaluation raise a number of important policy questions. One of these is the extent to which all degree providers are meeting their current statutory obligations: under section 254(3)(a) of the Education Act 1989, degrees must be "taught mainly by people engaged in research". Further, there is the question of whether specific government action may be required to help TEOs build research capacity in areas of strategic importance and in areas of demonstrated research weakness.

