Performance-Based Research Fund
2012 Quality Evaluation

All Peer-Review Panel and Expert Advisory Group Reports

Performance-Based Research Fund
2012 Quality Evaluation

Biological Sciences Panel
Panel Report

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Executive Summary

- This report summarises the results of the assessment undertaken by the Biological Sciences Peer-Review Panel ("the Panel") during the Performance-Based Research Fund (PBRF) 2012 Quality Evaluation and confirmed at a meeting held in Auckland, New Zealand between 26 and 29 November 2012.

- The Panel assigned funded quality categories to 739[1] evidence portfolios (EPs). In accordance with the processes set out in the PBRF 2012 Quality Evaluation Guidelines ("the Guidelines"), the Panel assigned the following final funded quality categories:

Quality Category	EPs (numbers)	EPs (FTE weighted)
A	111	102.04
B	298	268.25
C	192	177.26
C(NE)	138	132.52
Total	739	680.07

Note: Full-time equivalent (FTE) weighted numbers have been included for informational purposes. In determining average quality scores and funding, the number of staff and evidence portfolios are both FTE weighted (see *Evaluating Research Excellence – the 2012 Assessment Interim Report* for more information).

- The Panel managed conflicts of interest in accordance with the processes set out in the Guidelines.

- The Panel effectively achieved calibration of preliminary scores and incorporated holistic judgements into the assignment of final quality categories.

- The Panel considered that some tertiary education organisations (TEOs) disadvantaged individual staff members by failing to ensure that they stated their eligibility for new and emerging status on the EP.

- In addition, the Panel highlighted to the Tertiary Education Commission (TEC) that some TEOs had inaccurately claimed individual staff members as new and emerging. As a result, several EPs had their new and emerging status changed after the auditors found that the staff in question did not meet the criteria.

- The Panel identified issues for consideration for future Quality Evaluations, including addressing standardisation and the size of EPs.

- The Panel considered that, within biological sciences, there would be continuing impact of the Canterbury Earthquakes and that this was likely to impact the next Quality Evaluation given the long lead-in times required within the discipline. The Panel therefore recommends that some provision be made for the next Quality Evaluation to recognise these impacts.

[1] Numbers and percentages provided in this report are not FTE weighted unless otherwise noted.

Recommendations

It is recommended that the Tertiary Education Commission's (TEC) Board of Commissioners ("the Board"):

- **note** the process Biological Sciences Peer-Review Panel ("the Panel") followed as part of the PBRF 2012 Quality Evaluation that are outlined in this report
- **note** that the Panel has assigned a total of 739[2] funded quality categories
- **approve** the funded quality categories listed in the table below.

Funded quality categories in each of the subject areas are displayed in Table 1. All other EPs assessed by the Panel were assigned an unfunded quality category, that is "R" or "R(NE)". In accordance with the reporting framework for the 2012 Quality Evaluation, the number of EPs assigned unfunded quality categories is not reported in this report.

Table 1: Final funded quality categories by subject area

Subject Area	A	B	C	C (NE)	Total
Agriculture and Other Applied Biological Sciences	22	62	51	15	150
Ecology, Evolution and Behaviour	57	119	37	53	266
Molecular, Cellular and Whole Organism Biology	32	117	104	70	323
Total	**111**	**298**	**192**	**138**	**739**

The Panel also recommended that the Board **consider** the following for future Quality Evaluations.

- Take further steps to clarify the requirements for the submission and assessment of nominated research outputs (NROs), particularly patents and commissioned reports, to support their assessment by the peer-review panels for the next Quality Evaluation.
- Provide greater clarity in guidance and better auditing of tertiary education organisations (TEOs) to determine when a research output is first "publicly" available given the significant increase in journal publishing online prior to print.
- Provide greater clarification on the evidence of research impact expected, such as the use of citation numbers and journal impact factors.
- Review the eligibility criteria for new and emerging researchers and the process to be followed to collect that information.

[2] Numbers and percentages provided in this report are not FTE weighted unless otherwise noted. See the *Evaluating Research Excellence – the 2012 Assessment Interim Report* for more information.

- Provide greater clarification on the approach for assessing individual contribution to multi-authored NROs.

- Strengthen the requirement for Expert Advisory Groups (EAGs) to provide contextual information around recommendations for preliminary scoring.
- Clarify the PBRF 2012 Quality Evaluation Guidelines ("the Guidelines") to specify how Panel Chairs should manage conflicts of interest when allocating EPs to panel pairs to ensure that the Chairs and Moderators operate from a common understanding.

- Consider the continuing impact of the Canterbury earthquakes in the next Quality Evaluation.

- Reduce the allowable size of EPs, particularly in the peer esteem and contribution to the research environment components, and provide clear advice on how to present such items including requiring the grouping of examples of research student supervision.

Purpose of this Report

This report provides information on the deliberations of the Panel in its meeting on 26 to 29 November 2012. It also sets out the Panel's recommendations to the Board.

Key Observations

Assessing different NRO types

The Panel noted that comparing the quality of different NRO types presented some issues, particularly where contextual information such as citations, relative ranking of the journal in its field, and impact factors were not presented consistently. The absence of such information was particularly an issue for some NROs types, such as commissioned reports and patents, particularly where there was insufficient commentary in the EP relating to the impact of the output.

With many journals adopting the "online first" practice, the Panel considered greater clarity in guidance and better auditing by TEOs is needed to determine when a research output is first publicly available.

The quality assurance status of NROs was also an area that the Panel felt required additional clarity, as there was some variation in how this was interpreted. In most cases, this was resolved through the audit process, but this did lengthen the overall assessment process. The Panel found that this was particularly an issue for the EPs of new and emerging researchers.

The Panel recommends greater guidance should be provided to TEOs on what information should be submitted in EPs and to panels on how they should compare and judge the quality of different NROs. The Panel also recommends that the Guidelines include a clearer definition of external quality assurance.

New and emerging researchers

In a number of cases, the EPs of staff members who appeared to be new and emerging were not reported as such by the submitting TEO. The Panel considered that more care should have been taken in this area and that the TEC could have provided additional support to TEOs. In some cases, the Panel identified instances through the audit process where the new and emerging status of the individual concerned had not been correctly declared.

While the declaration of the new and emerging status of a particular individual is at the discretion of the relevant TEO and the Panel did not necessarily have access to all of the information relevant to that determination, the Panel was concerned that, in some cases, staff who were eligible to be reported as new and emerging were not identified as such.

Assessing contribution in multi-authored publications

An important part of the review process was the assessment of an individual's contribution to a multi-authored publication. Some information was available in the "My Contribution" field of the relevant NRO, but it was noted that the commentary was often quite subjective. The order of authors was deemed to be important in the assessment and first-author, last (senior) author and/or corresponding author status was taken into account. It was noted, however, that this varies between subjects and journals. Accordingly, these were identified for discussion as part of the Panel meeting and the subjective commentaries became very important in assessing individual contributions to a NRO. The Panel recommends that greater clarity should be provided on how descriptions of contribution should be completed, while maintaining the current space limit.

EAG assessments

Recommended scores from EAG assessors were used and factored into the preliminary scores that were assigned to EPs. EAG assessments were also considered during the Panel meeting. The Panel, however, noted two issues that it recommended be addressed in the next Quality Evaluation.

- Panel Members considered that the scores assigned by the EAGs could have been more useful had they been supported by more comprehensive and specific commentary. This was particularly evident in cases where there were clear disparities between scores given by the EAG assessor and the Panel pairs, further comment on how the scores were arrived at would have been beneficial.

- In a few cases, EAG assessors did not provide their assessments to the Panel in a timely manner, to allow consideration in determining preliminary scores. In these instances they were considered at the Panel meeting when assigning calibrated panel component scores.

Cross-referrals

The Panel appreciated and agreed with the cross-referral of some EPs as part of the Quality Evaluation, particularly in cases of assessing interdisciplinary research and the engagement of the EAGs. In many cases, however, the Panel observed that some TEOs could be more considered when requesting cross-referrals. The Panel

recommends that for the next Quality Evaluation the Guidelines include more specific guidance for TEOs on requesting cross-referrals.

Input from international panellists

The contribution of international panellists was seen as highly valuable by the Panel and it was agreed that this should continue to be a feature of the process. The Panel agreed that this applied particularly where international panellists have some experience of similar processes in their own country.

Inter-panel calibration

The Panel agreed that greater clarity on the role of Moderators within the panel process would be useful and, in particular, greater support during meetings for addressing emerging challenges that other panels may have already addressed. Generally, the Panel agreed that they were satisfied with the inter-panel calibration process.

Conflicts of interest and EP assignments

The Panel noted that the Moderators requested that a further review of the assignment of EPs to panel pairs was undertaken near the end of the panel assignment phase. The request was made to all peer-review panels to minimise instances where lead assessors (or both assessors) were affiliated to the same TEO as the EPs they were assigned. The Panel considered that the timing of this request was unhelpful and the need for this kind of review should have been anticipated in advance.

Notwithstanding this issue, Panel Members considered that the Panel applied the guidelines relating to the management of conflicts of interest consistently.

Canterbury earthquakes – special circumstances

The Panel paid particular attention in reviewing and applying the Guidelines to EPs that claimed Canterbury earthquakes special circumstances. The Panel ensured that EPs with the alternative assessment period of 1 January 2005 to 31 December 2010 did not receive additional consideration for these special circumstances. The Panel did take care to take account of any other special circumstances claimed as part of these EPs.

There was also agreement within the Panel that, within biological sciences, for the assessment period for the next Quality Evaluation that there would be a continuing impact of the Canterbury earthquakes given the significant lead times required within the discipline. The Panel therefore recommends that some provision be made to recognise this impact for the next Quality Evaluation.

Other special circumstances

The Panel applied special circumstances in accordance with the processes set out in the Guidelines.

Size of EPs

The Panel noted that the increase in the permissible character lengths of some text fields in EPs had not necessarily assisted TEOs to prepare clear and concise

submissions and, in some cases, had made it harder to assess components, particularly peer esteem and contribution to the research environment. The Panel recommends that clearer guidance is developed about how to report common components, such as through the grouping of examples of student supervision. A significant proportion of submitted EPs tried to use all of the available "space" where this was not required.

Panel Process

Membership and process

The Panel was comprised of 19 members, of which one Panel Member was from outside New Zealand. The Panel included:

- Professor Paula Jameson (Chair)
- Professor Hamish Spencer (Deputy Chair)
- Professor Bruce Baguley
- Professor Hugh Blair
- Professor Greg Cook
- Professor Catherine Day
- Professor Katharine Dickinson
- Professor Richard Duncan
- Professor Peter Dunkley (Australia)
- Professor Philip Harris
- Professor Alison Mercer
- Professor John Montgomery
- Professor Derrick Moot
- Professor Hugh Morgan
- Professor David Norton
- Professor David Penny
- Professor Paul Rainey
- Professor David Schiel
- Professor Joseph Rupert Waas

Each EP was assigned to two Panel Members (lead and second) who individually scored each EP and then agreed preliminary component scoring (considering cross-referrals, EAG assessments and specialist advice where appropriate) prior to the Panel meeting.

The Panel set a goal of reviewing 100% of all NROs. In total, 97% of all NROs were recorded as accessed. The Panel agreed that in most cases the new PBRF IT system was a significant aid in working toward this goal.

The Panel met in Auckland from 26 to 29 November 2012. All 19 Panel Members were present and were involved throughout the meeting except when conflicts of interest dictated otherwise. Short absences of Panel Members were managed to ensure that they were present for relevant EPs.

The Panel assessed each EP in accordance with the Guidelines, with special attention to the tie-point descriptors. Panel Members restricted their assessment of the EPs to the evidence presented and any advice received from cross-referrals, EAG assessors, and Specialist Advisers.

Panel transactions

On average, each Panel Member was involved in the preliminary assessment of about 83 EPs.

Fifty-nine EPs were cross-referred to other panels for additional assessment advice, as set out in Table 2.

Table 2: Number of cross-referred EPs assessed by other panels

Subject Area	Cross-Referral Panel	Number of EPs
Agriculture and Other Applied Biological Sciences	Business and Economics	6
	Engineering Technology and Architecture	3
	Health	1
	Māori Knowledge and Development	2
	Physical Sciences	2
	Sub-total	14
Ecology, Evolution and Behaviour	Creative and Performing Arts	1
	Engineering Technology and Architecture	2
	Māori Knowledge and Development	4
	Mathematical and Information Sciences and Technology	3
	Medicine and Public Health	2
	Physical Sciences	2
	Sub-total	14
Molecular, Cellular and Whole Organism Biology	Education	2
	Health	4
	Māori Knowledge and Development	2
	Mathematical and Information Sciences and Technology	2
	Medicine and Public Health	16
	Physical Sciences	5
	Sub-total	31
	Total	**59**

The Panel received 49 cross-referrals from other panels. The number of cross-referral assessments that the Panel provided to other panels can be seen in Table 3, broken down by subject area.[3]

Table 3: Number of cross-referred EPs assessed by the Panel

Primary Panel	Subject Area	Number of EPs
Business and Economics	Management, Human Resources, Industrial Relations and Other Businesses	2
	Marketing and Tourism	3
Education	Education	1
Engineering Technology and Architecture	Architecture, Design, Planning, Surveying	1
	Engineering and Technology	2
Māori Knowledge and Development	Māori Knowledge and Development	1
Mathematical and Information Sciences and Technology	Computer Science, Information Technology, Information Sciences	1
	Statistics	4
Medicine and Public Health	Biomedical	11
Physical Sciences	Earth Sciences	5
	Chemistry	8
Social Sciences and Other Cultural/Social Sciences	Human Geography	1
	Psychology	4
	Anthropology and Archaeology	5
	Total	**49**

The number of EPs assessed by EAGs is seen in Table 4.

Table 4: Number of EPs assessed by EAGs by subject area

Subject Area	EPs Assessed by PAR EAG	EPs Assessed by Pacific Research EAG
Agriculture and Other Applied Biological Sciences	40	–
Ecology, Evolution and Behaviour	22	1
Molecular, Cellular and Whole Organism Biology	26	–
Total	**88**	**1**

The Panel did not use any Specialist Advisers.

[3] The Panel Chair declined requests for cross-referrals where the expertise required for assessing an EP was not available on the Panel.

Referral of EPs

The primary reasons for referral of EPs to other panels were:

- when a TEO submitting the EP requested a cross-referral to another panel
- when a significant proportion (but not a majority) of the research output component of an EP fell within the subject area that was covered by another panel
- when there was not enough expertise in the Panel to fairly assess an EP.

Conflicts of interest

The Panel, through a combination of approaches, managed conflicts of interest effectively.

Panel Members were able, at any point in the assessment process, to declare potential conflicts of interest in relation to any EP that was assigned to the Panel. Such conflicts guided the Panel Chair and Secretariat in ensuring that, for pre-meeting assessment, no Panel Member was assigned an EP against which they had declared a conflict of interest. Where an EP was assigned to a conflicted Panel Member in error, the EP was reassigned to someone else and the Panel Member concerned was asked to not contribute to the assessment of that EP.

The guidance regarding conflicts of interest, as presented by the Moderation Panel, was discussed at the beginning of the meeting. Those Panel Members who had recorded a conflict of interest, or who decided during the meeting that they had a potential conflict of interest, generally absented themselves from the room for the discussion on those EPs. In a small number of EPs where the conflict of interest was minor, the Panel Members remained silent in the room and did not participate in the discussion. All Panel Members were present during the holistic assessment at the end of the meeting. Care was taken, however, to ensure those Panel Members with a conflict of interest did not comment at this stage.

In all cases where the Chair had a conflict of interest, she left the room and the Deputy Chair led the meeting.

Calibration of Panel judgements

The Panel achieved effective calibration through a variety of means as noted below.

- Preliminary scoring involved Panel Members being paired to assess EPs. This involved reaching a preparatory score individually, before discussing each EP with the second Panel Member to come to a preliminary (or agreed) score for each of the three components of research output, peer esteem, and contribution to the research environment. Panel Members commented how preliminary scores were generally reached with ease. Though, in some cases, this discussion was required between the lead and second assessor when considering all preparatory input to agree on a preliminary score. Sometimes, these discussions resulted in EPs being flagged for discussion by the whole Panel.

- At the Panel meeting, the Panel Chair presented highlights from the first Moderation Panel meeting. The Moderation Panel had no specific requests for the Panel at the commencement of the meeting.

- Following the Chair's presentation, the Panel viewed and discussed examples of EPs that received preliminary weighted scores in the mid-range of the "A", "B", "C", "C(NE)", "R" and "R(NE)" quality categories. These EPs were used at the start of the meeting to provide a benchmark in each quality category along with tie-point descriptors for each of the three components.

- Having established benchmarks against which the substantive scoring calibration could be based, the Panel proceeded to review each EP. The relevant EP was presented by the lead Panel Member. Discussion occurred where there were concerns or disagreements about the preliminary component scores assigned to the EPs. The Panel moved through the EPs in order of preliminary score, lowest to highest, as agreed by the Moderation Panel, until the "B"/"A" border where the Panel then assessed clear "A"s before returning to the "B"/"A" border. Therefore, EPs in different subject areas were not assessed in groups, but EPs from all subject areas were addressed based on score. This approach ensured calibration across subject areas was taken into account.

- The Panel paid particular attention to EPs around tie-points to ensure calibration across the full Panel. Over time the Panel became familiar with the common dilemmas that faced assessors and developed standards and expectations for scores in each of the three components. As a result, the discussions towards the end of the calibration process were considerably faster and more efficient. The Panel felt that in most cases preparatory scores were close and that the calibration exercises gave a high level of confidence in the calibration of the Panel.

- During the calibration phase, a number of EPs were identified that required further attention. These were also reviewed before any holistic assessments of EPs commenced. In particular, the Panel reviewed EPs where EAGs or other Panel scores were significantly different.

Holistic assessment

Twelve EPs were marked for consideration in the holistic phase of assessment. In 10 cases, a change was made to the quality category. The Panel made reference to the quality category descriptors when making these changes.

Where changes were made as part of the holistic phase the weighted scores assigned to these EPs tended to be just below the border for a higher quality category. The Panel felt it was more appropriate to apply a holistic judgement to these particular EPs as opposed to adjusting the component scores.

Final quality category

In accordance with the process set out in the Guidelines, final quality categories were assigned to each EP submitted to the Panel. These were confirmed through the PBRF IT system by the Secretariat.

Panel Commentary

Relative strength of New Zealand research

Overall, Panel Members were impressed by the high standard of published output in each of the disciplines covered in the Panel. This might be expected in ecology, evolution and behaviour because of New Zealand's unique habitat; and in areas of agriculture, animal and marine science because of New Zealand's long-term investment in this area. Outputs in the more fundamental areas of bioscience also indicated the strength of New Zealand research. The Panel considered that the decrease in average quality score in molecular, cellular and whole organism biology reflected a number of EPs having been referred for assessment to the biomedical science subject within the Medical and Public Health Panel, as well as a shift within the Panel to agriculture and other applied sciences.

The Panel noted the relatively low number of new and emerging researchers from the 2006 Quality Evaluation for whom EPs were submitted for the 2012 Quality Evaluation. Anecdotally, Panel Members attributed these low numbers to post-doctoral researchers seeking employment overseas.

Māori research

The Panel had eight cross-referrals to the Māori Knowledge and Development Panel. These referrals were mainly in relation to EPs in the ecology, evolution, and behavior subject area. The Panel also provided additional advice to the Māori Knowledge and Development Panel for one EP in the form of a cross-referral.

Pacific research

The Panel received advice on one EP from the Pacific Research EAG. There was agreement that greater clarity on the role and scoring of this EAG would make its expertise more valuable.

Professional and applied research

Eight-eight EPs that were assigned a funded quality category from the Panel received input from the PAR EAG. There was agreement that the input received was, on the whole, valuable and that greater clarity on the role and scoring of this EAG would enhance the value of advice provided. The Panel considered that the scores recorded by EAG members could have been better calibrated, although the assignment of EPs to two EAG members helped to overcome this.

2012 Performance-Based Research Fund Quality Evaluation

Business and Economics Panel

Panel Report

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Executive Summary

- This report summarises the results of the assessment undertaken by the Business and Economics Peer-Review Panel ("the Panel") during the Performance-Based Research Fund (PBRF) 2012 Quality Evaluation and confirmed at a meeting held in Auckland, New Zealand between 3 and 7 December 2012.

- The Panel assigned funded quality categories to 716 evidence portfolios (EPs)[1]. In accordance with the processes set out in the PBRF 2012 Quality Evaluation Guidelines ("the Guidelines"), the Panel assigned the following final funded quality categories:

Quality Category	EPs (numbers)	EPs (FTE weighted)
A	62	58.18
B	270	259.62
C	288	275.21
C(NE)	96	95.54
Total	716	688.55

Note: Full-time equivalent (FTE) weighted numbers have been included for informational purposes. In determining average quality scores and funding, the number of staff and evidence portfolios are both FTE weighted (see *Evaluating Research Excellence – the 2012 Assessment Interim Report* for more information).

- The Panel managed conflicts of interest in accordance with the processes set out in the Guidelines.

- The Panel effectively achieved calibration of preliminary scores and incorporated holistic judgements into the assignment of final quality categories.

- In this report, the Panel has raised several issues and recommendations for consideration by the Tertiary Education Commission's (TEC) Board of Commissioners ("the Board") for future rounds of the PBRF.

Recommendations

It is recommended that the Tertiary Education Commission's (TEC) Board of Commissioners ("the Board"):

- **note** the process the Business and Economics Peer-Review Panel ("the Panel") followed as part of the PBRF 2012 Quality Evaluation that are outlined in this report

- **note** the Panel's suggestions for future Quality Evaluation rounds of the Performance-Based Research Fund (PBRF)

- **note** that the Panel has assigned a total of 716[2] funded quality categories

- **approve** the funded quality categories listed in the table below.

[1] Numbers and percentages provided in this report are not FTE weighted unless otherwise noted. See the *Evaluating Research Excellence – the 2012 Assessment Interim Report* for more information.
[2] Ibid.

Funded quality categories in each of the subject areas are displayed in Table 1. All other evidence portfolios (EPs) assessed by the Panel were assigned an unfunded quality category, that is "R" or "R(NE)". In accordance with the reporting framework for the 2012 Quality Evaluation, the number of EPs assigned unfunded quality categories is not reported in this report.

Table 1: Final funded quality categories by subject area

Subject Area	A	B	C	C(NE)	Total
Accounting and Finance	18	49	70	28	165
Economics	18	59	48	16	141
Management*	13	106	115	29	263
Marketing and Tourism	13	56	55	23	147
Total	**62**	**270**	**288**	**96**	**716**

* Management, Human Resources, Industrial Relations and Other Businesses

Purpose of this Report

This report provides information on the Panel's decisions following a meeting held between 3 and 7 December 2012 as part of the PBRF 2012 Quality Evaluation. This report:

- outlines the distribution of final quality categories
- describes the process used by the Panel to assess EPs submitted by tertiary education organisations (TEOs) on behalf of researchers
- provides, and invites the Board to consider recommendations for future Quality Evaluation rounds.

Key Observations

The Panel noted a number of minor issues with the processes followed and has provided recommendations to the Board for consideration in future Quality Evaluations.

Improvements to the PBRF IT system

The Panel endorsed the transition to the online PBRF IT system for dissemination, assessment and recording of scores assigned to EPs. It was noted that the PBRF IT system worked very well and was a great improvement on the paper-based 2003 and 2006 Quality Evaluations. There were, however, some aspects of the PBRF IT system that could be improved.

The Panel's recommendations for improvements to the PBRF IT system have been referred to the project manager for the 2012 Quality Evaluation for inclusion in the project closure report.

Assessment criteria and comments from Expert Advisory Groups (EAGs)

The Panel noted that additional supporting comments in some EAG assessments would have assisted Panel Members in interpreting the scores provided. In addition, the late provision of some EAG scores meant this advice was needed to be considered at Panel meetings rather than helping to determine preliminary scores. Panel-wide discussions at the Auckland meetings considered all EAG scores and advice in the context of Panel moderation and assigning calibrated quality categories. These discussions also incorporated Panel-wide experience and expertise in EP assessment.

The Panel recommends that in any future Quality Evaluation, the TEC mandate specific commentary for inclusion with EAG assessments that substantiate scores provided. Further, the Panel recommends that EAG assessors ensure that the specific aspects of EPs relevant to their assessments are included in their comments. The Panel also recommends that the TEC consider more closely aligning EAGs' assessment criteria with the main panels' criteria so the scores are more directly comparable. [3]

Process followed by Specialist Advisers

The Panel felt that some Specialist Advisers assessed aspects of researchers' outputs not stated in EPs. For example, some comments referred to individuals' lifelong contributions, but had less direct relevance to EPs themselves.

The Panel recommends that in future Quality Evaluations, the TEC provide Specialist Advisers with more explicit advice, including guidance on how to ensure that comments are of an appropriate length and address matters directly relevant to the assessment of each EP.

Guidance related to cross-referral of EPs

The Panel noted that the most helpful cross-referrals were ones that included additional commentary that explained the scores assigned to EPs. Cross-referrals without comments were less useful to Panel Members.

The Panel recommends that, in initiating a cross-referral, a primary panel should be required to specify the feedback sought, such as a particular focus on a research area (research output, peer esteem, and contribution to the research environment). Panellists receiving a cross-referral should also be required to provide comments.

Steps to ensure greater cross-panel calibration

The Panel noted some differences when comparing the component scores assigned by cross-referral panel members against those assigned by Panel Members. These differences suggested that cross-referral advice could have been better calibrated against the assessment standards employed by the Panel.

The Panel recommends that the TEC consider ways to improve cross-panel calibration in order to improve the usefulness of cross-referral advice.

[3] It is noted, however, that EAGs' assessment criteria are currently different to panels' assessment criteria to obtain a different perspective on certain aspects of the research outputs.

New and emerging researcher status clarified by TEOs

The Panel noted several EPs where researchers appeared, from the information provided, to meet the eligibility criteria for new and emerging status but had not been identified as such by the relevant TEOs. The Panel is concerned that some researchers may have been disadvantaged because their TEOs did not correctly identify them as new and emerging.

The Panel recommends that the TEC continue to highlight to TEOs the importance of correctly identifying new and emerging researchers.

Suggestions for improved presentation of EP information

The Panel believes that the number of items available for peer esteem and contribution to the research environment imposes a high compliance burden on researchers, when a smaller number is sufficient for the purpose of assessment. Panel Members also noted a tendency for some EPs to fill every available field by stretching material that could have been grouped.

The Panel recommends that TEOs be given more explicit instructions on how to display evidence (for example, the order of other research outputs (OROs) in terms of priority, grouping conference presentations together, grouping refereeing duties together, listing research grants together) as a greater degree of consistency would assist panellists in assessing EPs. The Panel also recommends that the TEC consider reducing the number of fields and/or characters available in parts of EPs.

Guidance related to special circumstances

In many cases, the Panel found that researchers did not describe in sufficient detail how the special circumstances claimed led to a diminished quantity of research outputs. This practice limited the ability of the Panel to assign higher scores to these EPs.

The Panel recommends that, in any future Quality Evaluation, the scope of special circumstances are more clearly defined, identifying the area(s) of research (research output, peer esteem, or contribution to the research environment) affected by the special circumstances. This may further clarify how special circumstances have reduced the quantity of research.

More guidance concerning holistic assessments

The Panel found the guidance in the PBRF 2012 Quality Evaluation Guidelines ("the Guidelines") on making holistic assessments difficult to follow. These difficulties arose because the relationship between the tie-point descriptors and the considerations relevant to the assignment of the quality category during holistic assessment were not always clear.

The Panel recommends that the TEC consider ways to give panels more detailed and explicit advice for changing quality category as a result of holistic assessment in future Quality Evaluations.

Panel Process

Membership and process

Information on the Panel Members is shown in Table 2.

Table 2: Panel Members for the 2012 Quality Evaluation

Panel Members	Participated in 2006 PBRF Quality Evaluation	International
Chair: Professor Ted Zorn	✓	
Deputy Chair: Professor Les Oxley	✓	
Professor John Brocklesby	✓	
Professor Roderick Brodie		
Professor Steven Cahan	✓	
Professor Catherine Casey	✓	✓
Dr Arthur Grimes		
Professor Jarrod Haar		
Professor Robert (Bob) Hamilton	✓	
Professor Nigel Hemmington		
Professor James Higham		
Professor Janet Hoek		
Professor Kate Kearins		
Professor Kim Langfield-Smith		✓
Professor Gael McDonald	✓	✓
Professor Deryl Northcott		
Professor Dorian Owen	✓	
Professor John Panzar	✓	
Associate Professor Jane Parker		
Professor Lawrence Rose	✓	✓

The processes followed by the Panel for assigning and assessing EPs, and awarding preparatory and preliminary scores to EPs, are outlined below.

- The Panel was established with the purpose of assessing the quality of EPs prepared by PBRF-eligible staff employed by New Zealand-based TEOs. The Panel's membership was comprised of New Zealand-based and international experts in the following four subject areas:

    a. accounting and finance

    b. economics

    c. management, human resources, industrial relations and other business

d. marketing and tourism.

- In April 2012, Panel Members were invited to Auckland to undertake a range of training and calibration activities over two days.

- In late July/early August 2012, the Panel's Chair assigned EPs to Panel pairs via the PBRF IT system. Panel Members were then tasked with individually determining preparatory scores for each EP.

- Once all preparatory scores had been assigned, and after any cross-referred advice from other panels or advice from one of several EAGs was received, lead Panel Members assigned preliminary scores to EPs after discussing with the second assessors.

- The Panel met in Auckland between 3 and 7 December 2012 to discuss and agree final quality categories for the EPs under consideration. Except for one Panel Member, who was unable to attend for reasons beyond their control, all Panel Members were in attendance during the four-day Panel meeting. The absent Panel Member was available to provide advice on an as-and-when needed basis. Sufficient expertise existed on the Panel to provide an appropriate level of input on the EPs that the absent Panel Member was an assessor on.

- The Panel assessed each EP in relation to the tie-point descriptors for each component and Panel Members restricted their assessment of the EPs to the evidence presented and any advice received from cross-referrals, EAG assessors, and Specialist Advisers.

Assignment of EPs to Panel Members

Each Panel Member was assigned around 80 EPs (each EP was assigned to a lead and second assessor on the Panel) to assess on the basis of subject-area expertise and to avoid actual or potential conflicts of interest. In addition to the EPs assessed by the Panel in its role as primary, 52 EPs were cross-referred to the Panel.

Canterbury earthquakes – special circumstances

The Panel paid particular attention in reviewing and applying the Guidelines to EPs that claimed Canterbury earthquakes special circumstances. The Panel ensured that EPs with the alternative assessment period of 1 January 2005 to 31 December 2010 did not receive additional consideration for these special circumstances. The Panel did take care to take account of any other special circumstances claimed as part of these EPs.

Other special circumstances

The Panel applied special circumstances in accordance with the processes set out in the Guidelines.

Cross-referral of EPs to other panels

Fifty-eight EPs assigned to the Panel were cross-referred and assessed by one or more panels due to these EPs containing content relevant to other subject areas.

Table 3: EPs cross-referred and assessed by other panels

Subject Area	Cross-Referral Panel	Number of EPs
Accounting and Finance	Education	2
	Humanities and Law	4
	Māori Knowledge and Development	2
	Mathematical and Information Sciences and Technology	1
	Sub-total	**9**
Economics	Engineering, Technology and Architecture	1
	Māori Knowledge and Development	1
	Mathematical and Information Sciences and Technology	1
	Medicine and Public Health	1
	Social Sciences and Other Cultural/Social Sciences	4
	Sub-total	**8**
Management, Human Resources, Industrial Relations and Other Businesses	Biological Sciences	2
	Education	9
	Engineering, Technology and Architecture	6
	Humanities and Law	1
	Māori Knowledge and Development	3
	Mathematical and Information Sciences and Technology	3
	Social Sciences and Other Cultural/Social Sciences	6
	Sub-total	**30**
Marketing and Tourism	Biological Sciences	3
	Education	3
	Māori Knowledge and Development	1
	Social Sciences and Other Cultural/Social Sciences	4
	Sub-total	**11**
Total		**58**

Table 4 lists the number of cross-referred EPs by subject area that the Panel assessed.[4]

Table 4: Cross-referred EPs assigned to and assessed by the Panel

Primary Panel	Subject Area	Number of EPs
Biological Sciences	Agriculture and Other Applied Biological Sciences	6
Creative and Performing Arts	Design	1
Education	Education	2
Engineering Technology and Architecture	Architecture, Design, Planning, Surveying	1
	Engineering and Technology	1
Humanities and Law	Law	5
Māori Knowledge and Development	Māori Knowledge and Development	2
Mathematical and Information Sciences and Technology	Computer Science, Information Technology, Information Sciences	9
	Pure and Applied Mathematics	1
Medicine and Public Health	Public Health	1
Social Sciences and Other Cultural/Social Sciences	Communications, Journalism and Media Studies	3
	Human Geography	4
	Political Science, International Relations and Public Policy	2
	Psychology	7
	Sociology, Social Policy, Social Work, Criminology & Gender Studies	7
	Total	**52**

Thirty EPs were referred to a Specialist Adviser nominated by the Panel either because expertise was not available within the Panel or because Panel Members with expertise in these areas had conflicts of interest.

Table 5: Number of EPs submitted to the Panel that were assigned to and assessed by a Specialist Adviser

Subject Area	Number of EPs
Accounting and Finance	8
Economics	8
Management*	14
Total	**30**

* Management, Human Resources, Industrial Relations and Other Businesses

[4]The Panel Chair declined requests for cross-referrals where the expertise required for assessing an EP was not available on the Panel.

Conflicts of interest

Panel Members were encouraged to declare any actual or potential conflicts of interest throughout the Quality Evaluation, including prior to being assigned EPs to assess and again during the Panel meeting. All actual or potential conflicts of interest were documented and recorded to ensure that they were managed in accordance with the Guidelines and panel procedures.

During the Panel's meeting, conflicts of interest were managed in the following ways:

- for discussion of the EPs of family members, personal friends, those in close relationships (personal and work related such as close colleagues and students working directly with the Panel Member), persons with whom Panel Members were in dispute, and for the discussion of a Panel Member's own EP, the Panel Member was required to leave the room

- for discussion of EPs of staff members within the Panel Member's own department or academic unit (other than close colleagues or students working directly with the Panel Member), the Panel Member either left the room or stayed, but did not contribute to discussion on the portfolio

- where the Chair was conflicted, the Deputy Chair led this part of the meeting.

At no stage did any Panel Member who had declared a conflict of interest participate in the assessment of the EP for which the conflict was declared.

Calibration of Panel judgements

The Panel placed considerable emphasis on achieving accurate intra-panel calibration of assessments during training in April 2012. During the individual assessment phase, Panel Members were able to request calibration advice from the Panel Chair and other Panel Members on an as-and-when needed basis. Panel pairs independently scored and assigned preparatory scores to EPs prior to discussing their assessments. Once consensus was reached, the lead Panel Member assigned a preliminary score to each EP.

In the first two weeks of the preparatory scoring phase, a further training and calibration exercise was conducted: a small number of EPs were assigned to new Panel Members who assigned preparatory scores and then discussed and assigned tentative preliminary scores with either the Chair or Deputy Chair.

Prior to the Panel meeting, Panel Members were sent four EPs to independently score in preparation for the Panel meeting. The four EPs were chosen based on their preliminary scores and ensured consideration of two EPs from each of the four overall provisional quality categories. This exercise allowed the Panel to review calibration prior to the allocation of final scores.

As part of the Panel meeting, all Panel Members had access to all EPs and the component scores assigned to these (with the exception of their own). This provided each Panel Member with an opportunity to participate in the assessment of each EP.

To enable more time for a detailed assessment of each EP than might otherwise have been the case given the constraints of time, the Chair assigned (with the agreement of the Moderators) EPs to groups of three or four Panel Members to review prior to the agreement of the final component scores and quality categories by the full Panel. Panel Members were asked to consider whether they agreed with the preliminary scores already assigned to EPs

by the lead and second assessor. More detailed scrutiny was given when a weighted score for a particular EP was near to the boundary between quality categories (such as, a high “C” or low “B”).

While Panel Members could at any stage request a review of the component scores or quality categories assigned to each EP, at a minimum those identified as potentially eligible for a change as part of the review by each sub-group were all referred back to the full Panel for further discussion. The key information about any EP considered by the full Panel was then displayed electronically on a screen at the front of the room. Following discussion, the Panel reached a consensus on scores. Discussion focused on:

- the results of pre-meeting assessment
- the presence of any special circumstances
- information included in nominated research outputs (NROs) and OROs.

Holistic assessment

After completion of calibrated panel component scores, the Panel addressed the process of holistic assessment. The Panel considered that five EPs (less than 1% of the total) should have their quality categories changed on the basis of this holistic assessment. Changes were made at this stage normally because the weighting of each component as part of the scoring system led to a calibrated panel quality category that did not recognise the quality of the research platform in an EP because of the relatively low scores in the peer esteem or contribution to the research environment components. In a small number of cases, special circumstances were a major consideration in a quality category increase.

Final quality category

In accordance with the process set out in the Guidelines, final quality categories were assigned to each EP submitted to the Panel. These were confirmed through the PBRF IT system by the Secretariat.

Panel Commentary

General feedback

A number of Panel Members who participated in previous Quality Evaluations noted the potential for expectations of the standard required for the assignment of a particular quality category to have increased over time. Panel Members agreed that the overall quality and quantity of research within the disciplines covered by the Panel had increased materially, and care should be taken when interpreting the average quality scores assigned at the various levels of the reporting framework. The Panel noted the relatively high proportion of staff whose EPs were assigned an “A” quality category in 2006 who were no longer PBRF-eligible and the impact that this could have had on the average quality scores.

The Panel encourages the undertaking of longitudinal analysis that would enable there to be a fuller understanding of the relationship between the length of tenure, the rate of turnover and the seniority of staff, and the average quality scores and quality categories that were assigned in each of the three Quality Evaluations.

The Panel noted the possibility that the EPs submitted on behalf of some PBRF-eligible staff may have been assigned a lower or the same Quality Category as in 2003 or 2006. Panel Members noted the potential motivational impacts on the individuals concerned particularly where they might have demonstrated a greater level of research interest and productivity.

The Panel noted the exacting standards required for the assignment of an "A" quality category, and the relatively demanding ones associated with a "B". The Panel recommended that the TEC should encourage TEOs to put in place careful policies to manage and avoid loss of faith in the system and maintain motivation to undertake high-quality work.

Relative strength of New Zealand research

The Panel assessed EPs covering four subject areas. These subject areas varied in terms of the final quality categories assigned. The subject area of economics had the highest ratio of "A"s (12.8%) to total funded quality categories followed by accounting and finance (11%). The Panel noted the high ratio of "A"s in economics and the significant improvement in this ratio for accounting and finance, a subject that has received the lowest proportion of "A"s from the Panel in the past.

The lowest percentage of "A"s was in management, human resources, industrial relations and other businesses (4.6%). This was partially explained by the high number of disciplines in this category with low numbers of researchers in New Zealand. It was noted that researchers in smaller disciplines may have fewer opportunities to publish nationally and internationally.

Māori research

The Panel referred a number of EPs to panellists with expertise in Māori research methodologies and cross-referred seven EPs to the Māori Knowledge and Development Panel. With the expertise available on the Panel and the advice received from the Māori Knowledge and Development Panel, the Panel considered that they were able to assess these EPs accurately.

Pacific research

The Panel received several EPs that included Pacific research that were considered by the Pacific Research EAG. With some exceptions, the Panel generally found that this advice from the Pacific Research EAG was useful in determining the quality categories for these EPs.

Professional and applied research

The Panel assessed 37 EPs that included considerations from the Professional and Applied Research EAG. The Panel generally found that the advice from the Professional and Applied Research EAG useful in determining the quality categories for these EP.

Performance-Based Research Fund
2012 Quality Evaluation

Creative and Performing Arts Panel
Panel Report

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Executive Summary

- This report summarises the results of the assessment undertaken by the Creative and Performing Arts Peer-Review Panel ("the Panel") during the Performance-Based Research Fund (PBRF) 2012 Quality Evaluation and confirmed at a meeting held in Auckland between 26 and 28 November 2012.

- The 14-member Panel assigned funded quality categories to 427[1] evidence portfolios (EPs). In accordance with the processes set out in the PBRF 2012 Quality Evaluation Guidelines ("the Guidelines"), the Panel assigned the following final funded quality categories:

Quality Category	EPs (numbers)	EPs (FTE weighted)
A	45	41.80
B	149	138.33
C	168	149.06
C(NE)	65	55.64
Total	427	384.83

Note: Full-time equivalent (FTE) weighted numbers have been included for informational purposes. In determining average quality scores and funding, the number of staff and evidence portfolios are both FTE weighted (see *Evaluating Research Excellence – the 2012 Assessment Interim Report* for more information).

- The Panel highlighted to the Tertiary Education Commission (TEC) that some TEOs had inaccurately claimed individual staff members as new and emerging. As a result, several EPs had their new and emerging status changed after the auditors found that the staff in question did not meet the criteria.

- The Panel managed conflicts of interest in accordance with the processes set out in the Guidelines.

- The Panel effectively achieved calibration of preliminary scores and incorporated holistic judgements into the assignment of final quality categories.

- In this report, the Panel has raised several issues and recommendations for consideration by the TEC Board of Commissioners ("the Board") for any future Quality Evaluations.

[1] Numbers and percentages provided in this report are not FTE weighted unless otherwise noted.

Recommendations

It is recommended that the Tertiary Education Commission's (TEC) Board of Commissioners ("the Board"):

- **note** the process the Creative and Performing Arts Peer-Review Panel ("the Panel") followed as part of the Performance-Based Research Fund (PBRF) 2012 Quality Evaluation as outlined in this report

- **note** that the Panel has assigned a total of 427[2] funded quality categories

- **approve** the funded quality categories listed in the table below.

Funded quality categories in each of the subject areas are displayed in Table 1. All other evidence portfolios (EPs) assessed by the Panel were assigned an unfunded quality category, that is "R" or "R(NE)". In accordance with the reporting framework for the 2012 Quality Evaluation, the number of EPs assigned unfunded quality categories is not reported in this report.

Table 1: Final funded quality categories by subject area

Subject Area	A	B	C	C (NE)	Number of EPs
Design	8	28	32	20	88
Music, Literary Arts and Other Arts	12	49	42	18	121
Theatre and Dance, Film, Television and Multimedia	10	20	19	9	58
Visual Arts and Crafts	15	52	75	18	160
Total	**45**	**149**	**168**	**65**	**427**

The Panel also recommended that the Board **consider** the following for future Quality Evaluations.

- Review the PBRF 2012 Quality Evaluation Guidelines ("the Guidelines") in relation to both the eligibility criteria for new and emerging researchers and special circumstances.

- Take further steps to clarify the requirements for nominated research outputs (NROs) to ensure that these are accessible and reviewable by the panellists through the PBRF IT system. This should include, where appropriate, the uploading of sound files and quality visual images.

- Clarify the role and scoring criteria of the Expert Advisory Groups (EAGs) to assist panels to take account of the scores and advice received in relation to referred EPs.

[2]Numbers and percentages provided in this report are not FTE weighted unless otherwise noted. See the *Evaluating Research Excellence – the 2012 Assessment Interim Report* for more information.

- Revise the panel-specific guidelines to include more specific guidance on the difference between professional practice and research.

- Allow for a longer Panel meeting to ensure there is sufficient time available for assessment.

Purpose of this Report

This report provides an account of the deliberations of the Panel at its meeting between 26 and 28 November 2012. It also sets out the Panel's recommendations to the Board.

Key Observations

Quality and accessibility of NROs

The Panel had particular concerns about the accessibility of NROs through the PBRF IT system and the quality of the NROs provided. Given that much of the research considered by the Panel involved visual or audio outputs, the lack of a minimum quality standard sometimes impeded assessment.

The Panel considered it imperative that where a visual or audio file was not too large that this be made available as a URL link in the PBRF IT system. Some Panel Members experienced delays in assessing NROs because they were required to request, for example, the actual CD as opposed to being able to listen to the recording online.

Concerns were raised about the quality of NROs made available in the visual arts area through the PBRF IT system. Several Panel Members suggested that further advice be given to TEOs for future Quality Evaluations to ensure that a minimum standard is applied to all visual NROs.

It was not always clear that NROs were first exhibited during the assessment period. It is important that researchers be clear in their descriptions when an exhibition (held within the assessment period) included new works, as opposed to works that had been completed before the assessment period. While the auditors examined NROs where Panel Members raised concerns, and generally found that these were valid NROs within the assessment period, the Panel wished to emphasise the importance of researchers clearly articulating the "newness" of each NRO.

New and emerging researchers

The Panel questioned the validity of researchers claiming new and emerging status, who despite recent academic appointments, have been research active (often as practitioners in the field) for many years. Several of these concerns were raised prior to the Panel meeting. In a number of cases, the EPs of researchers who were initially reported as new and emerging had that status removed as a result of the audit process. Further concerns around the eligibility of staff for the new and emerging status were also raised during the Panel meeting.

This has been a continuous concern, raised in the Panel's 2006 report, and it was suggested that the Guidelines require further consideration. The Panel Members felt that better advice for TEOs was required to assist them in making these determinations. This was an issue outside the purview of the Panel meeting and did not impact on the final quality category assigned to any EP.

Cross-referrals

Preparatory scores from cross-referral panel members were considered and factored into the determination of preliminary scores. The Panel felt that it would have been beneficial to have commentary to accompany all scores provided by cross-referral panels. In cases where there were clear disparities between the cross-referral panel score and the Panel's scoring, comment on how the scores were arrived at would have been helpful.

The PBRF IT system seemed to eliminate many of the Panel's concerns raised in 2006, particularly around the delays in receiving cross-referral advice. The Panel would recommend, however, that further training and guidance be given to all panels in relation to providing commentary in the system explaining the rationale for component scores.

Input from Specialist Advisers

The Panel was reliant on specialist advice for quite a few EPs, particularly in the subject area of music, literary arts and other arts (see Table 4 for the breakdown). While the Panel was grateful for this input, it did not feel that advice was always consistent or sufficiently nuanced. Comments made by Specialist Advisers did not always align well with their suggested scores. In one instance, a Specialist Adviser provided such uniformly positive advice that its value in assisting the Panel to reach a calibrated judgement was limited.

Given the range and breadth of subject matter covered by the Panel, it was only determined late in the assignment phase that additional Specialist Advisers were required. In one case, advice was not able to be obtained from a Specialist Adviser because of timing and others issues. The Panel was, however, able to rely on expertise from within the Panel in assessing the relevant EPs.

The Panel suggested that clearer guidance for Specialist Advisers might be useful, particularly in the Guidelines and encouraging them to align their comments with the tie-point descriptors. It was also recommended that there be further functionality within the PBRF IT system to flag where a Specialist Adviser is needed, but is not currently in the system. The flag would remain until such time as the Panel Chair assigns a Specialist Adviser to the EPs concerned.

Some EPs cross-referred to the Panel related to subject areas where the Panel itself was reliant on Specialist Advisers. The PBRF IT system did not provide for cross-referred EPs to be then allocated to a Specialist Adviser.

Canterbury earthquakes – special circumstances

The Panel paid particular attention in reviewing and applying the Guidelines to EPs that claimed Canterbury earthquakes special circumstances. The Panel ensured that EPs with the alternative assessment period of 1 January 2005 to 31 December 2010 did not receive additional consideration for these special circumstances. The Panel

did take care to take account of any other special circumstances claimed as part of these EPs.

Other special circumstances

The Panel applied special circumstances in accordance with the processes set out in the Guidelines.

EAGs

This was the first Quality Evaluation round in which EAGs had been used. While the Panel found advice from EAG assessors useful, Panel Members noted the variability in the commentary provided by these assessors.

Given the quite high proportion of EPs that involved distinguishing professional practice from research, the Panel recognised that EAG assessors could be even more useful in the next Quality Evaluation if clearer guidance is provided about contextualising their recommended scores.

Professional practice

The Panel recognises that the distinction between professional practice and research needs to be nuanced in relation to the creative and performing arts where original, innovative work that extends the boundaries of the discipline may be generated by professional work. Such outputs may well be seen by the Professional and Applied Research EAG (PAR EAG) as having significant impact. The Panel recommends that more specific guidance be developed on how professional practice in the creative and performing arts meets the PBRF definition of research.

Panel Process

Membership and process

The 14-member Panel included:

- Professor Peter Walls (Panel Chair)
- Professor Robert Jahnke (Deputy Chair)
- Professor Christopher Baugh
- Professor Michael Byron
- Professor Terence Dennis
- Professor Annie Goldson
- Professor Paul Gough
- Associate Professor David Hawkins
- Associate Professor Martin Lodge
- Mr Bill Manhire
- Ms Stephanie McKellar-Smith
- Professor Anne Noble
- Dr Suzanne Woolfe
- Dr Suzette Worden

Six Panel Members were from outside New Zealand (though one of these had taught at a New Zealand university for a number of years).

Each EP was assigned to two Panel Members who provided agreed preliminary component scoring prior to the meeting, taking into account cross-referral, EAG assessor, and specialist advice where appropriate. There was only one instance of a Panel pair declining to score an EP at the preliminary stage. This EP was scored at the Panel meeting after discussion with the whole Panel.

The Panel met in Auckland from 26 to 28 November 2012. All 14 Panel Members were present, and the majority involved throughout the meeting. The Deputy Chair was not present on the morning of the second day due to circumstances outside of their control. The Chair asked that Professor Noble act in the role of Deputy Chair until Professor Jahnke was able to re-join the meeting at midday.

The Panel assessed each EP in relation to the tie-point descriptors for each component and Panel Members restricted their assessment of the EPs to the evidence presented and any advice received from cross-referrals, EAG assessors, and Specialist Advisers.

Panel transactions

On average, each Panel Member was involved in the preliminary assessment of 70 EPs, either as lead or secondary assessor, before meeting to discuss each as a Panel.

Thirteen EPs nominated by TEOs for assessment by the Panel were transferred to other panels for assessment and two EPs were transferred into the Panel.

There were 63 EPs cross-referred to nine panels for additional assessment advice, as set out in Table 2.

Table 2: EPs cross-referred to and assessed by other panels

Subject Area	Cross-Referral Panel	Number of EPs
Design	Business and Economics	1
	Education	3
	Engineering Technology and Architecture	6
	Humanities and Law	2
	Māori Knowledge and Development	2
	Mathematical and Information Sciences and Technology	3
	Social Sciences and Other Cultural/Social Sciences	2
	Sub-total	**19**
Music, Literary Arts and Other Arts	Education	1
	Engineering Technology and Architecture	1
	Health	2
	Humanities and Law	4
	Māori Knowledge and Development	3
	Medicine and Public Health	1
	Social Sciences and Other Cultural/Social Sciences	3
	Sub-total	**15**
Theatre and Dance, Film, Television and Multimedia	Education	2
	Humanities and Law	2
	Māori Knowledge and Development	2
	Social Sciences and Other Cultural/Social Sciences	2
	Sub-total	**8**
Visual Arts and Crafts	Education	2
	Engineering Technology and Architecture	1
	Humanities and Law	3
	Māori Knowledge and Development	13
	Social Sciences and Other Cultural/Social Sciences	2
	Sub-total	**21**
	Total	**63**

The Panel also received 63 cross-referrals from seven panels, where the other panel or a TEO had requested additional input from the Panel.[3] The number of cross-referral assessments that the Panel provided to other panels can be seen in Table 3.

Table 3: Cross-referred EPs assigned to and assessed by the Panel

Primary Panel	Subject Area	Number of EPs
Biological Sciences	Ecology, Evolution and Behaviour	1
Education	Education	15
Engineering Technology and Architecture	Architecture, Design, Planning, Surveying	4
Humanities and Law	English Language and Literature	11
	Foreign Languages and Linguistics	1
	History, History of Art, Classics and Curatorial Studies	9
Māori Knowledge and Development	Māori Knowledge and Development	11
Mathematical and Information Sciences and Technology	Computer Science, Information Technology, Information Sciences	1
Social Sciences and Other Cultural/Social Sciences	Anthropology and Archaeology	1
	Communications, Journalism and Media Studies	7
	Sociology, Social Policy, Social Work, Criminology & Gender Studies	2
	Total	**63**

The Panel enlisted the expertise of Specialist Advisers for 38 EPs. Table 4 below has the number of EPs that received specialist advice.

Table 4: Number of EPs assessed by Specialist Advisers by subject area

Subject Area	Number of EPs
Music, Literary Arts and Other Arts	26
Theatre and Dance, Film, Television and Multimedia	12
Total	**38**

[3] The Panel Chair declined requests for cross-referrals where the expertise required for assessing an EP was not available on the Panel.

Referral of EPs

The primary reasons for referral of EPs to other panels were:

- when a TEO submitting the EP requested a cross-referral to another panel
- when a significant proportion (but not a majority) of the research output component of an EP fell within the subject area that was covered by another panel
- when there was not enough expertise in the Panel to fairly assess an EP.

The primary reason for referral of EPs to Specialist Advisers was that either the Panel or one of the other panels required additional expertise to assess the EP or a specified NRO.

Conflicts of interest

The Panel effectively managed conflicts of interest throughout the Quality Evaluation.

As part of training and information provided, Panel Members were encouraged to declare conflicts of interest in the PBRF IT system prior to the EP assignment phase. This provided the initial basis upon which the Panel Chair could determine assignments while avoiding conflicts.

Panel Members were able to declare possible conflicts at any time during the process. There were several instances where this occurred after the assignment of EPs. Where a Panel Member raised a conflict with a particular EP with the Panel Chair and/or Secretariat, the EP was reassigned. Where a Panel Member only noted the conflict in the PBRF IT system, however, there were a few instances where these had to be dealt with after the deadline for preliminary scores and in one instance as part of the Panel meeting (see discussion below).

The Guidelines regarding conflicts of interest were discussed at the beginning of the meeting. The Panel adhered to the Guidelines. The Chair noted that the Guidelines had the potential to limit the expertise required to assess EPs and advised that – where the conflict of interest was minor – affected Panel Member(s) could answer direct, factual questions. Panel Members absented themselves from the room only where a spouse, partner, direct relation or their own EP was being assessed. In instances where the Chair had a conflict of interest, the Deputy Chair led the meeting.

As mentioned, there was one conflict of interest that arose as part of the Panel meeting as a result of the conflict being declared in the PBRF IT system after an EP had been assigned and subsequently scored by the Panel Member. The process for dealing with this was that the EP in question was reassigned to two Panel Members for their consideration overnight, with the calibrated scores being agreed by the whole Panel. The Panel Member with the conflict of interest left the room and the discussion of the EP was observed by a Moderator.

Calibration of Panel judgements

The Panel carried out its assessment in line with the Guidelines. The process the Panel followed is described below.

Preliminary scoring involved Panel Members being paired to assess EPs. This involved reaching a preparatory score individually, before discussing each EP with the second Panel Member to determine preliminary (or agreed) scores for each of the three components: research output, peer esteem, and contribution to the research environment.

At the Panel meeting, the Panel was advised of the themes from the first Moderation Panel meeting which had been attended by the Chair. The Moderation Panel requested that the Panel give particular consideration during its overall calibration, to three out of four subject areas: design; theatre and dance, film, television and multimedia; and visual arts and crafts. In comparison to the 2006 Quality Evaluation, these three subject areas had shown significant increases in average quality scores at the preliminary scoring phase. It was also advised that the Panel should have regard to the Guidelines in relation to special circumstances and how these should be applied given the tendency of EPs overall to be scored more generously (relative to other panels) when taking special circumstances into account.

The Panel then proceeded with a calibration exercise where a selection of EPs that received preliminary weighted scores in the mid-range of the “A”, “B”, “C”, “C(NE)”, “R” and “R(NE)” quality categories were discussed. These EPs were used at the start of the meeting to provide a benchmark for the quality categories relating them to the tie-point descriptors for each of the three components.

Having established benchmarks against which the substantive calibration scores could be based, the Panel proceeded to review each EP. The Panel began with those EPs assigned the lowest preliminary weighted score (“R(NE)” and “R”) and proceeded in ascending order. The relevant EP was presented by the lead assessor with additional comments from the secondary assessor. Discussion occurred where there were concerns or disagreements about the preliminary component scores assigned to the EPs or in situations where the special circumstances impacted on the score. Particular consideration was given to EPs that were 70 points (calculated using the weighted score for the three components of the EP) on either side of the boundary of quality category and where a change to a component score could impact on the funded quality category.

In line with the themes communicated by the Moderation Panel, the component scores were then calibrated by the Panel as necessary to ensure intra- and inter-panel consistency.

Holistic assessment

After completion of calibrated panel component scores, the Panel addressed the process of holistic assessment. The Panel determined that 15 EPs warranted further discussion in the holistic assessment phase. In eight cases, a change was made to the quality category assigned in the calibration phase. These particular EPs were selected for the holistic assessment process because of prolonged discussion during the calibration phase about the component scores relative to the overall quality category.

Where changes were made as part of the holistic discussion the EPs tended to be less than five or 10 points below the boundary of a quality category. The Panel felt it was more appropriate to apply a holistic judgement to these EPs rather than adjust the component scores.

Final quality category

In accordance with the process set out in the Guidelines, final quality categories were assigned for each EP submitted to the Panel. These were confirmed through the PBRF IT system by the Secretariat.

Panel Commentary

Relative strength of New Zealand research

Panel Members were impressed by the high standard of research for each of the disciplines covered in this Panel. The overseas Panel Members, whose specialist areas included design, visual arts, theatre, and creative writing, commented on the quality of research which they felt compared favourably with the highest level of achievement on an international platform.

The Panel made specific comments with regard to design, noting that this was a burgeoning area of research that had received significant government funding over the last six years. The growth in the field and the number of researchers involved has had a concomitant impact on the quality of the research and the health of the field as a whole. It was felt that these factors contributed to the increase in quality category scores compared to 2003 and 2006 Quality Evaluations.

Māori research

The Panel had 20 cross-referrals to the Māori Knowledge and Development Panel. This was mainly in relation to EPs in the visual arts and crafts subject area. The Panel also provided additional advice to the Māori Knowledge and Development Panel for 11 EPs in the form of cross-referrals.

Pacific research

While the Panel did find the advice from the Pacific Research EAG variable, there was agreement that making provision for the opportunity to access this expertise was valuable. The Pacific Research EAG provided assessment on six EPs for the Panel.

Professional and applied research

The PAR EAG provided assessment on seven EPs for the Panel. See comments in relation to PAR EAG on page 7.

Performance-Based Research Fund
2012 Quality Evaluation

Education Panel
Panel Report

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Executive Summary

- This report summarises the results of the assessment undertaken by the Education Peer-Review Panel ("the Panel") during the Performance-Based Research Fund (PBRF) 2012 Quality Evaluation and confirmed at a meeting held in Auckland between 3 and 6 December 2012.

- The Panel assigned funded quality categories to 546[1] evidence portfolios (EPs). In accordance with the processes set out in the PBRF 2012 Quality Evaluation Guidelines ("the Guidelines"), the Panel assigned the following final funded quality categories:

Quality Category	EPs (numbers)	EPs (FTE weighted)
A	53	49.02
B	191	180.43
C	262	249.46
C(NE)	40	36.63
Total	546	515.54

Note: Full-time equivalent (FTE) weighted numbers have been included for informational purposes. In determining average quality scores and funding, the number of staff and evidence portfolios are both FTE weighted (see *Evaluating Research Excellence – the 2012 Assessment Interim Report* for more information).

- The Panel adequately and appropriately managed possible conflicts of interest, despite further conflicts of varying degrees being declared throughout the assessment process.

- The Panel effectively achieved calibration of preliminary scores and incorporated holistic judgements into the assignment of final quality categories.

- The increase in the average quality score (AQS(N)) from 3.74 in 2006 to 4.16 in 2012 (FTE weighted) reflects the changing landscape of the discipline of education in the tertiary sector; in particular the considerable investment in staff upgrading qualifications and in supporting research by the tertiary education organisations (TEOs) concerned, particularly in the merged university-college of education settings.

- The increase in the number of EPs assigned a funding quality score in 2012 reflects the growth in research across the discipline, and includes an increasing number of EPs from outside the university-college of education settings; in other academic units within universities and other TEO settings.

- The Panel expressed some concern in relation to the variability of advice received from cross-referrals and the Expert Advisory Groups (EAGs).

- In this report, the Panel has raised several issues and suggestions for consideration by the Tertiary Education Commission's (TEC) Board of Commissioners ("the Board") for any future Quality Evaluation.

[1] Numbers and percentages provided in this report are not FTE weighted unless otherwise noted.

Recommendations

It is recommended that the Tertiary Education Commission's (TEC) Board of Commissioners ("the Board"):

- **note** the process the Education Peer-Review Panel ("the Panel") followed as part of the Performance-Based Research Fund (PBRF) 2012 Quality Evaluation as outlined in this report
- **note** that the Panel has assigned a total of 546[2] funded quality categories
- **approve** the funded quality categories listed in the table below.

Funded quality categories in each of the subject areas are displayed in Table 1. All other evidence portfolios (EPs) assessed by the Panel were assigned an unfunded quality category, that is "R" or "R(NE)". In accordance with the reporting framework for the 2012 Quality Evaluation, the number of EPs assigned unfunded quality categories is not reported in this report.

Table 1: Final funded quality categories by subject areas

Subject Area	A	B	C	C(NE)	Total
Education	53	191	262	40	**546**

The Panel also recommended that the Board **consider** the following for future Quality Evaluations.

- Clearly define the meaning of "minimal evidence" and the descriptors for research outputs of 1 and 2.
- Take further steps to clarify the difference between peer esteem and contribution to the research environment and to limit the number of entries.
- Clarify the role and scoring criteria of Expert Advisory Groups (EAGs) to ensure that all panels are aware of the context for the advice it receives in relation to referred EPs.
- Provide better guidance to tertiary education organisations (TEOs) and researchers in relation to the narrative and evidence of the impact of research within an EP's details. The Panel noted that there was considerable variability in the quality of EPs by TEO.
- Take steps to minimise the claiming of special circumstances, particularly in relation to senior management positions which currently do not constitute in the PBRF 2012 Quality Evaluation Guidelines ("the Guidelines") a leadership position substantial enough to justify special consideration.

[2] Numbers and percentages provided in this report are not FTE weighted unless otherwise noted. See the *Evaluating Research Excellence – the 2012 Assessment Interim Report* for more information.

- Make further refinements to the PBRF IT system to make it more user-friendly and encourage all TEOs to provide PDF versions of nominated research outputs (NROs).

Purpose of this Report

This report provides information on the deliberations of the Panel in its meeting which was held from 3 to 6 December 2012 in Auckland. It also sets out the Panel's recommendations to the Board.

Key Observations

Quality and accessibility of EP components

The Panel expressed concerns about the quality of some EPs. Panel Members felt that TEOs and researchers would benefit from further advice in relation to the qualitative narrative and presentation of EPs, particularly around providing concise evidence on the impact of the research.

At times, the considerable variability between EPs required Panel Members to sift through a significant amount of evidence to try and identify the information needed to assess and score EPs.

Panel Members also found it frustrating that not all NROs were readily available online through the PBRF IT system. This was particularly salient for the international Panel Members, who in some instances had to request the research output and then wait for it to arrive, delaying their ability to score the associated EP.

New and emerging researchers

The Panel identified a few situations where it appeared the new and emerging status of staff had been reported incorrectly. The audit process removed new and emerging from four EPs and added it to one.

The Panel spent considerable time calibrating itself in terms of the component scores in the "R"/"R(NE)" and "C"/"C(NE)" quality categories. As part of this process, the Panel thoroughly reviewed those EPs that were "R(NE)" and "C(NE)". This aligned with the advice given to the Panel by the Moderation Panel prior to the meeting.

Cross-referrals

Overall, the cross-referral scores were higher than the preparatory scores of the Panel. In addition, in some cases, the absence and inconsistency in the commentary provided in cross-referral advice limited its usefulness to Panel Members in determining preliminary scores.

Input from Specialist Advisers

The Panel found the input from the Specialist Advisers useful, particularly in the area of foreign languages and linguistics. While there was a Panel Member with this expertise, due to a large number of these EPs coming from their own TEO, the

specialist advice proved necessary to assist other Panel Members in assessing these EPs.

Canterbury earthquakes – special circumstances

The Panel consistently applied the Guidelines to EPs that claimed Canterbury earthquakes special circumstances. Panels were asked to pay particular attention to the EPs that chose the alternative assessment period of 1 January 2005 to 31 December 2010.

As part of the Panel report discussion, Panel Members provided positive feedback about the introduction of the special Canterbury earthquakes category. It would have helped deliberations if EPs had included more specific evidence on how the quantity of material presented had been impacted by the earthquakes.

Other special circumstances

The Panel applied special circumstances in accordance with the processes set out in the Guidelines.

EAGs

Panel Members considered that some of the scores assigned by EAG Members could have been more useful had it been supported by more comprehensive and specific commentary. The Panel also noted that for any future Quality Evaluations more explicit advice in the Guidelines about how to take account of these scores in terms of the assessment of each EP would have be helpful.

Panel Process

Panel composition and subject coverage

In anticipation of a diverse range of EP subject matter, the Chair endeavoured to bring in expertise relating to ICT and distance learning, literacy, policy, history and sociology and increase the expertise around early childhood, science, technology and mathematics.

There was considerable pressure managing the amount of EPs in the area of linguistics, TESOL and teaching foreign languages, despite a Panel Member with this expertise. A Specialist Adviser was appointed to assist with this.

The other two main pressure points were in the field of ICT and distance learning, and sports and physical education. The former are both growth areas in the discipline and there were a number of cross-referrals from other panels. A growing field where the Panel did not have specific expertise was in the area of sports, physical education and coaching. There were, however, Panel Members with expertise in the particular disciplines underpinning the research, for example, gender and physical education or development and exercise.

The Panel recommends that for the next Quality Evaluation the Panel membership includes expertise the field of sports and physical education.

Membership and process

The 23-member Panel included:

- Professor Helen May (Panel Chair)
- Professor Susan Middleton (Deputy Chair)
- Professor Glenda Anthony
- Professor Carol Cardno
- Professor Margaret Carr
- Emeritus Professor Terry Crooks
- Professor Niki Davis
- Professor Rod Ellis
- Professor Garry Hornby
- Professor Alister Jones
- Professor Ruth Kane
- Professor Elizabeth McKinley
- Professor Stuart McNaughton
- Professor Luanna Meyer
- Professor Kay Morris Matthews
- Professor Patricia O'Brien
- Professor John O'Neill
- Distinguished Professor Viviane Robinson
- Professor Jeffrey Sigafoos
- Emeritus Professor Anne Smith
- Professor Jeffrey Smith
- Professor Helen Timperley
- Distinguished Professor William Tunmer

Two members came from academic institutions outside New Zealand.

Each EP was assigned to two Panel Members who provided agreed preliminary component scoring prior to the meeting, taking into account cross-referral, EAG assessor, and Specialist Adviser advice where appropriate. No Panel pairs declined to score an EP.

The Panel met between 3 and 6 December 2012. Twenty-two Panel Members were present. One Panel Member was unable to attend due to circumstances outside of their control. All of the Panel Members present were involved throughout the meeting. For those EPs where the absent Panel Member was the lead or second, their working notes had been distributed prior to the meeting and their Panel pair was able to speak to those notes.

The Panel assessed each EP in relation to the tie-point descriptors for each component and Panel Members restricted their assessment of the EPs to the evidence presented and any advice received from cross-referrals, EAG assessors, and Specialist Advisers.

Panel transactions

On average, each Panel Member was involved in the preliminary assessment of between 60 and 70 EPs, either as lead or secondary assessor, before meeting to discuss each as a Panel.

The Panel assessed all EPs it was assigned. In addition, the Panel assessed 86 EPs that were cross-referred to it from other panels.

One-hundred and one EPs were cross-referred to and assessed by another panel for additional assessment advice, as set out in Table 2 below. All 11 other panels received at least one cross-referral from the Panel. This relates to the multi-disciplinary nature of education and in particular the subjects that are covered in school curricula.

Table 2: Number of EPs cross-referred and assessed by other panels

Subject Area	Cross-Referral Panel	Number of EPs
Education	Biological Sciences	1
	Business and Economics	2
	Creative and Performing Arts	15
	Engineering Technology and Architecture	1
	Health	2
	Humanities and Law	22
	Māori Knowledge and Development	32
	Mathematical and Information Sciences and Technology	6
	Medicine and Public Health	2
	Physical Sciences	1
	Social Sciences and Other Cultural/Social Sciences	17
	Total	**101**

The Panel also received 86 cross-referrals from 10 other panels, where other panels or TEOs requested additional input from the Panel Members.[3] The number of cross-referral assessments that the Panel provided to other panels can be seen in Table 3.

Table 3: Number of EPs cross-referred to and assessed by the Panel

Primary Panel	Subject Area	Number of EPs
Biological Sciences	Molecular, Cellular and Whole Organism Biology	2
Business and Economics	Accounting and Finance	2
	Management, Human Resources, Industrial Relations and Other Businesses	9
	Marketing and Tourism	3
Creative and Performing Arts	Design	3
	Music, Literary Arts and Other Arts	1
	Theatre and Dance, Film, Television and Multimedia	2
	Visual Arts and Crafts	2
Engineering Technology and Architecture	Architecture, Design, Planning, Surveying	1
	Engineering and Technology	2
Humanities and Law	English Language and Literature	1
	Foreign Languages and Linguistics	10
Māori Knowledge and Development	Māori Knowledge and Development	15
Mathematical and Information Sciences and Technology	Computer Science, Information Technology, Information Sciences	6
Medicine and Public Health	Biomedical	1
	Clinical Medicine	2
	Public Health	2
Physical Sciences	Physics	1
Social Sciences and Other Cultural/Social Sciences	Anthropology and Archaeology	1
	Communications, Journalism and Media Studies	3
	Psychology	7
	Sociology, Social Policy, Social Work, Criminology & Gender Studies	10
	Total	**86**

The Panel also sought specialist advice for 17 EPs.

Referral of EPs

The primary reasons for referral of EPs to other panels were:

- when a TEO submitting the EP requested a cross-referral to another panel

[3] The Panel Chair declined requests for cross-referrals where the expertise required for assessing an EP was not available on the Panel.

- when at least one NRO of an EP fell within the subject area that was covered by another panel

- when the Panel considered additional specialist advice was necessary to fairly assess an EP.

The primary reason for referral of EPs to Specialist Advisers was that either the Panel or one of the other panels required additional expertise to assess the EP or a specified NRO.

Conflicts of interest

The Panel effectively managed conflicts of interest throughout the Quality Evaluation process.

As part of training and information provided, Panel Members were encouraged to declare conflicts of interest in the PBRF IT system prior to the EP assignment phase. This provided the initial basis upon which the Chair could determine assignments while avoiding conflicts.

Panel Members were able to declare conflicts at any time during the process and, as such, several arose after the assignment of EPs. In instances where a Panel Member raised a relevant conflict with a particular EP with the Chair and/or Secretariat, the EP was reassigned.

The Guidelines regarding conflicts of interest, as agreed by the Moderation Panel, were discussed at the beginning of the meeting. The Panel agreed to the Guidelines and sought to ensure that these were adhered to. Panel Members stayed in the room, but were not allowed to participate in discussion of EPs from their own TEOs.

Panel Members absented themselves from the meeting room in instances where a spouse, partner, direct relation or their own EP was being assessed. In instances where the Chair had a conflict of interest or where EPs from her own TEO were discussed, the Deputy Chair led the meeting.

Calibration of Panel judgements

The Panel achieved effective calibration in line with the Guidelines. The process the Panel followed to do this is described below.

Preliminary scoring involved Panel Members being paired to assess EPs. This involved reaching a preparatory score individually, before together discussing each EP to come to a preliminary (or agreed) score for each of the three components of research output, peer esteem, and contribution to the research environment.

At the Panel meeting, Panel Members were advised of the themes from the first Moderation Panel meeting which was attended by the Panel Chair. The Moderation Panel requested that the Panel give consideration to its overall calibration, as it was apparent after the preliminary scoring phase that there were significant increases in average quality scores from 2006. It was also advised that the Panel should have regard to the calibration of the “C(NE)”/“R(NE)” boundary and the lower average weighted scores assigned to EPs with “significant community responsibility” (noting the small number of EPs involved).

The Panel then proceeded with a calibration exercise with a selection of EPs that received preliminary weighted scores on the boundaries between “C”/“R”, “B”/“C” and “A”/“B”. These EPs were used at the start of the meeting to provide a benchmark for the quality categories and tie-point descriptors for each of the three components (research output, peer esteem, and contribution to the research environment).

Having established benchmarks against which the calibration scores could be based, the Panel calibrated its EPs in sets. The initial set applied a filter of 30 points (using the preliminary weighted scores) above and below the quality category boundaries. Once this had been completed for the “C”/“R”, “B”/“C” and “B”/“A” borders, the Panel extended the filter out to those within 70 points of these three boundaries. The Panel saved detailed consideration of EPs in the “A” quality category for the end of the calibration process.

The Panel then returned to the remaining EPs that did not fit into the categories above and reviewed these, beginning with the “R”s and working its way up to mid-range “B”s. The Panel then ended the calibration scoring with those in the “A” category. These were considered by moving backwards from the highest weighted component score to those EPs on the “A”/“B” boundary.

In line with the themes communicated by the Moderation Panel, the Panel worked well to achieve intra-panel consistency. It moved through the EPs methodically to ensure that each component score was being applied according to the Guidelines and consistently across EPs. The Panel was quite adept at calibration by the end of the first day and had developed robust calibration benchmarks for each of the three component scores. This helped to facilitate the review of every EP over the four days of the meeting.

Holistic assessment

After completion of calibrated panel component scores, the Panel addressed the process of holistic assessment. The Panel determined that eight EPs warranted further discussion in the holistic assessment phase. All of these EPs were within one component score change of the “A” quality category. After discussion of each, it was determined that the initial calibration of seven EPs was correct and that from a holistic perspective these EPs were high “B”s.

Further consideration of one EP, which had been lowered to a “B” during the calibration phase, led to it being considered to be an “A” in line with the quality category descriptors.

Final quality category

In accordance with the process set out in the Guidelines, final quality categories were assigned for each EP submitted to the Panel. These were confirmed through the PBRF IT system by the Secretariat.

Panel Commentary

Relative strength of New Zealand research

Overall, Panel Members were impressed by the increase in research performance from 2003 and 2006 to 2012 that coincided with the completion of the six mergers of colleges of education with university education departments. The Panel suggested that the results of the 2012 Quality Evaluation were reflective of several factors: an increase in research funding by TEOs into the education discipline, strategic mentoring of staff and support to upgrade their qualifications, and having systems in place to ensure that research was a priority. Several college-university settings had appointed professorial staff to support research development during these years.

Noted as evidence of research development in the discipline by Panel Members was the number of doctorates submitted as an NRO or a research output for many "C" and some "B" quality scored EPs. Also noted (anecdotally) was the increasing extent of doctoral supervision within the discipline. Several Panel Members nearing retirement contrasted this situation with their own experience as late as the 1980s, where it was not always possible to get supervision for doctorates in departments of education at universities.

Also to note is that research development takes time, with the University of Waikato's Faculty of Education having been merged for 30 years versus the universities of Canterbury and Otago where the merged entities were established one year into the assessment period for the current Quality Evaluation. The Panel noted that this investment will need to continue to address the still significant number of EPs submitted that did not meet the standard for a funded quality category (whether through the deliberations of the Panel or the decision of the TEO not to submit an EP). By comparison with other panels, the Panel also had a higher percentage of EPs assigned a "C" quality category and TEOs will need to take care to ensure that these staff receive further support to develop their research profile and expertise.

The 2012 Quality Evaluation has coincided with considerable restructuring and programme development across the college-university education settings, as well as some severe cost cutting exercises that have put pressure on the delivery of teacher education programmes. A number of professional academic staff have departed from their former positions in teacher education with some loss in expertise. The balancing act of delivering professional programmes, supporting research development, and maintaining high-quality research has been a challenge.

Considering only the EPs that received a funded quality category, the 9.7% of EPs assigned an "A" grade indicates that there is world-class research in education sited in this country and considerable evidence of international interest in New Zealand's education research. The combined percentage of "A"s and "B"s (FTE-weighted) was 44.5% compared to 35.9% in 2006.

Even with the considerable level of staff turnover in the sector over the last six years, TEOs have actively recruited high-performing staff members and given time and consideration to systemic changes aimed at increasing the quality of research within the discipline. The Panel felt that the sector was to be congratulated for its commitment to supporting and investing in research.

The Panel noted advice to the Moderation Panel that the percentage of staff on whose behalf EPs were submitted as part of the 2006 Quality Evaluation and were

no longer PBRF-eligible in 2012 is lower on average than most panels probably reflecting the emphasis by TEOs to support and keep their research active staff.

One Panel Member commented that PBRF has explicitly defined what research is and set clear standards in terms of how the research system as a whole should perform which has provided a useful reference point for individuals.

Māori research

There is a growing range of research with the broad field of Māori research. It is not possible, except through known contacts, to estimate how many EP's were submitted by Māori researchers in the field of Education.

The Panel cross-referred 32 EPs that were assessed by the Māori Knowledge and Development Panel. The Panel provided advice to the Māori Knowledge and Development Panel for 15 EPs in the form of a cross-referral. There was considerable cross-over between panels.

Pacific research

The Panel noted the emergence of both fledgling, but also ground-breaking research by Pacifica researchers in terms of both theorising and pedagogy. The loss of a Pacifica Panel Member from the Panel to chair the Pacific Research EAG was noted as a loss of expertise available on the Panel.

While the Panel found the advice from the Pacific Research EAG variable, there was agreement that making provision for the opportunity to access this expertise was valuable. The Pacific Research EAG provided assessment on 28 EPs for the Panel.

Generally, the Panel felt that there had been substantial development in both Māori and Pacific research in the field of education over the last six years and this should be acknowledged. The Panel also recommended that analysis be undertaken to examine the inter-temporal changes in Māori and Pacific research since the 2003 Quality Evaluation.

Professional and applied research

The Professional and Applied Research EAG provided assessment on 23 EPs for the panel. See comments in relation to EAGs on page 6.

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Engineering, Technology and Architecture Panel
Panel Report

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Executive Summary

- This report summarises the results of the assessment undertaken by the Engineering, Technology and Architecture Peer-Review Panel ("the Panel") during the Performance-Based Research Fund (PBRF) 2012 Quality Evaluation and confirmed at a meeting held in Auckland, New Zealand between 4 and 7 December 2012.

- The 21-member Panel assigned funded quality categories to 587[1] evidence portfolios (EPs). In accordance with the processes set out in the PBRF 2012 Quality Evaluation Guidelines ("the Guidelines"), the Panel assigned the following final funded quality categories:

Quality Category	EPs (numbers)	EPs (FTE weighted)
A	76	76.00
B	237	231.71
C	168	161.07
C(NE)	106	101.73
Total	587	570.51

Note: Full-time equivalent (FTE) weighted numbers have been included for informational purposes. In determining average quality scores and funding, the number of staff and evidence portfolios are both FTE weighted (see *Evaluating Research Excellence – the 2012 Assessment Interim Report* for more information).

- The Panel examined 93.0% of all nominated research outputs (NROs), just under the 100% target originally set.

- Key issues identified during the PBRF 2012 Quality Evaluation exercise included the need for greater consistency and calibration across panels and Expert Advisory Groups (EAGs) with particular reference to cross-referral advice.

- Final quality categories assigned by the Panel in 2012 reconfirmed the strengths in the engineering and technology, and architecture, design, planning and surveying subject areas.

- The Panel effectively achieved calibration of preliminary scores and incorporated holistic judgements into the assignment of final quality categories.

Recommendations

It is recommended that the Tertiary Education Commission's (TEC) Board of Commissioners ("the Board"):

- **note** that the Engineering, Technology and Architecture Panel ("the Panel") has assigned a total of 587[2] funded quality categories

[1] Numbers and percentages provided in this report are not FTE weighted unless otherwise noted. See the *Evaluating Research Excellence – the 2012 Assessment Interim Report* for more information.
[2] Ibid.

- **approve** the funded quality categories listed in the table below.

Funded quality categories in each of the subject areas are displayed in Table 1. All other evidence portfolios (EPs) assessed by the Panel were assigned an unfunded quality category, that is "R" or "R(NE)". In accordance with the reporting framework for the 2012 Quality Evaluation, the number of EPs assigned unfunded quality categories is not reported in this report.

Table 1: Final funded quality categories by subject area

Subject Area	A	B	C	C(NE)	Total
Architecture, Design, Planning, Surveying	10	51	54	23	138
Engineering and Technology	66	186	114	83	449
Total	**76**	**237**	**168**	**106**	**587**

The Panel also recommended that the Board **consider** the following.

- Review the contribution of the Professional and Applied Research Expert Advisory Group (PAR EAG), in particular the effectiveness of the assessments provided and the comparison with panel scoring.

- Although the PBRF IT system provided a reliable and effective system to conduct the quality assessment, enhancements to the system should be considered for the next Quality Evaluation, including consistent EP and nominated research output (NRO) identification formats and general improvements in usability.

- Review the component structure of the EP evidence submitted, with some scaling back of the volume of reviewable content in the peer esteem and contribution to the research environment components.

- Take further steps to clarify the requirements for the submission of non-print NROs (such as patents and design outputs) to ensure that these are accessible and reviewable by the panellists for the next Quality Evaluation.

- Revise the PBRF 2012 Quality Evaluation Guidelines ("the Guidelines") to include more specific and concise guidance to panellists, with particular reference to providing an overview of the architecture of the PBRF IT system and user views of it in the various modes that panellists will encounter rather than providing a comprehensive and lengthy user guide.

Purpose of this Report

This report provides information on the Panel's decisions following a meeting held between 4 and 7 December 2012 as part of the PBRF 2012 Quality Evaluation. This report:

- outlines the distribution of final quality categories

- describes the process used by the Panel to assess EPs submitted by tertiary education organisations (TEOs) on behalf of researchers

- provides, and invites the Board to consider, a series of issues and recommendations for the next Quality Evaluation.

Key Observations

Review of NROs

The PBRF IT system meant that almost all NROs could be accessed by the Panel without the need for physical evidence to be provided. The Panel highlighted the following:

- the vast improvement in the process for accessing NROs from the 2006 Quality Evaluation

- Panel Members endeavoured to sight as many of the NROs as possible, with a final total of 93% NROs recorded as assessed – the actual proportion of NROs reviewed may have been higher than 93% as Panel Members familiarity with the PBRF IT system increased over time, and the number may have been under-recorded

- the need for design-based outputs to have a greater level of narrative to clearly explain the research component in the output – the Panel noted the difficulty in some cases of identifying the actual research output from evidence provided in the form of extensive unexplained images or design drawings

- the need to add greater clarity to the requirements for the submission of NROs, including:

    - a need to ensure that the breadth and depth of the research impact are clearly outlined, whilst also in a standardised manner across TEOs – this is needed in particular for patents and other forms of intellectual property

    - greater consistency needed in how and what information is provided, for example, whether the provision of impact factor and citation rates within each NRO should be encouraged

    - more thorough TEO checks prior to submission of the accuracy of the NROs that cannot be submitted electronically.

New and emerging researchers

The Panel noted the effectiveness of the Guidelines in assessing new and emerging researchers.

The Panel would be supportive of further investigation being undertaken of the results of 2006 and 2012 PBRF Quality Evaluations to determine the progression of new and emerging researchers from 2006 into senior research positions. This is with particular reference to assessing future academic staffing requirements to meet

national social and economic development objectives given there were a number of skilled researchers assessed in the 2012 Quality Evaluation who are nearing retirement.

Cross-referrals and EAGs

The Panel welcomed the greater detail within the Guidelines, noting the points below:

- a need for greater consistency and calibration across panels and EAGs
- recommended scores from the various forms of cross-referrals were used and factored where possible into the preliminary scores
- in some cases there were clear disparities between scores given by the cross-referral assessment and the Panel
- in some instances the Panel felt that it would have been beneficial to have further contextual information around the scoring than was provided by cross-referral panels and EAG assessors
- greater consistency and calibration between EAG members would have enhanced the value of their assessments, in particular assisting Panel Members in understanding that the EAG assessment was of the full EP or one or more NROs only.

The Panel also specifically noted the following with regards to EAGs and the assessment of commercial and applied research.

- Sixty-three of the EPs assigned to the Panel required EAG assessment.
- Based on this significant number of EAG assessments, the Panel acknowledged the value of several assessments, although reconfirmed concerns related to the consistency of EAG assessments as a whole.
- Factoring in the consistency concerns, the Panel believes the EAG assessment process was under-used in relation to its potential value. A possible explanation for the level of use was that there could have been more time allowed for TEOs to prepare EPs aligned to the EAG criteria had the decision to establish the EAGs been taken earlier.
- The range of specialist expertise to be tapped through the EAG process should be more fully representative of the range of assessments to be made.
- EAG scoring could have been better calibrated to that of panels had some joint training taken place.
- There remains a far higher burden of proof of quality expected for applied commercial research outputs. This appears to be because there are well-defined guidelines to assess core research EPs, but inadequate guidelines for the assessment of EPs with applied and commercial work.
- The assessment period of six years is quite a short time for significant commercial outcomes to be achieved from research done in the period.

- The Panel remains in support of the EAG assessment process, but acknowledges the need for further refinement of these processes, and that the issues need to be addressed openly, and early in the next assessment period for there to be an impact.

Input from Specialist Advisers

The Panel welcomed the advice provided by Specialist Advisers, with the recommendations requested being used in determining the preliminary scoring of five EPs.

Canterbury earthquakes – special circumstances

The Panel paid particular attention in reviewing and applying the Guidelines to EPs that claimed Canterbury earthquakes special circumstances. The Panel ensured that EPs with the alternative assessment period of 1 January 2005 to 31 December 2010 did not receive additional consideration for these special circumstances. The Panel did take care to take account of any other special circumstances claimed as part of these EPs.

Other special circumstances

The Panel applied special circumstances in accordance with the processes set out in the Guidelines. The Panel, however, noted the following for consideration.

- The various options available and the varying effects of each circumstance in applying special circumstances (both “Canterbury earthquakes” and “Other”) to the scoring of some EPs meant that the process was not always straightforward.

- Proposed that specific examples be developed from the 2012 Quality Evaluation to facilitate a consistent application across all panels in future Guidelines.

Conflicts of interest

The Panel felt that they had effectively managed conflicts of interest in line with the recommendations within the Guidelines.

Preparatory scoring

The Panel noted there had been some data entry errors in the initial stage of the assessment, which in some cases led to preparatory scores being revised following preliminary discussion by Panel pairs. These errors we corrected and did not impact assessment at the Panel meeting. The Panel recommended for the next Quality Evaluation that preparatory scoring should be locked after entry.

Training and guidelines

The Panel emphasised the need for the training guidance to be more concise, with key data being clearly highlighted.

The Panel also noted the training process could be better targeted for the next Quality Evaluation with a greater emphasis of hands-on training (problem-based

learning). This recommendation would aid familiarity with and permit more efficient use of the PBRF IT system. The Panel also suggested that increasing the number of calibration exercises prior to the Panel meeting would be of value.

The Guidelines should also be produced as early as practicable in the assessment period, with particular reference to the assessment criteria; ensuring researchers are able to develop their EPs (in line with the Guidelines) throughout most of that period.

Panel assessment

The Panel noted several issues for consideration in future exercises.

- A general need to reduce the volume of assessment materials, in particular the volume of other research outputs (ORO), peer esteem, and contribution to the research environment entries. It is recommended that number of peer esteem and contribution to the research environment entries could be at least halved from 30 to 15, with a more stringent audit/review of the content.

- The number of NROs could be increased to six, and the number of OROs reduced to 12, noting the importance of the physical evidence to determine final quality categories. This would provide a total of 18 research outputs, to a maximum on average of one NRO and two OROs for each of the six years between Quality Evaluations.

- The individual's contribution to jointly authored research outputs was a significant issue to the Panel given the variability in the descriptions provided in EPs. The Panel suggests that alternative assessment at a departmental or academic unit approach would go some way to diminishing this issue. Alternatively, an approach similar to the United Kingdom would limit the submission of any particular NRO to one EP only, meaning all NROs submitted by each researcher would be truly unique (whilst also clearly establishing the individual as the significant contributor).

- Need to review and clarify the criteria against which assessment is undertaken, with the Panel noting significant reliance upon external ratings, research impact factors and academic criteria when assessing a range of EPs.

- The Panel was impacted substantially by several post-Panel meeting EP changes, generally as a result of audit findings. This led to significant challenges in re-assessing particular EPs and potentially changes to the EPs final quality category. The Panel recommends that in future rulings regarding the eligibility of evidence should be made as early as possible in the process, and in any event in advance of the Panel meeting.

Panel Process

Membership and process

The Panel was comprised of 21 members:

- Professor Allan Williamson (Chair)
- Associate Professor Keith Alexander
- Professor Dale Carnegie
- Associate Professor Rajesh Dhakal
- Professor Robert Freestone
- Professor Eileen Harkin-Jones
- Professor Gini Lee
- Professor Bruce Melville
- Professor Andy Shilton
- Professor Brenda Vale
- Professor Laurence Weatherley
- Professor Donald Cleland (Deputy Chair)
- Doctor Alastair Barnett
- Professor Tim David
- Professor Olaf Diegel
- Professor Stephen Frith
- Professor Richard Harris
- Professor Gordon Mallinson
- Associate Professor Robyn Phipps
- Professor Mark Taylor
- Professor Neville Watson

The Panel demographics are summarised below:

- Five (23.8%) were international representatives
- Eleven (52.4%) were first-time panellists
- Eight (38.1%) have been involved since the 2003 PBRF
- Five specialised in architecture, design, and planning and the remainder in engineering and technology.

The Panel followed the Guidelines in a consistent manner, with the following points noted.

- Each EP was assigned to two Panel Members who provided agreed preliminary component scoring prior to the meeting, involving panel cross-referral, EAG assessment or specialist advice where appropriate.

- The Panel met for four days in Auckland, from 4 to 7 December 2012. Twenty Panel Members were present and were involved throughout the meeting.

- One Panel Member was unable to attend the meeting due to circumstances outside of their control. The Panel Member provided detailed working notes in advance of the Panel meeting to the Chair/Deputy Chair to assist in determining calibrated Panel scoring.

- During the Panel meeting, two members were each absent for about two hours on two separate occasions due to circumstances outside of their control. During their absences no EPs which they had assessed were considered.

- In all cases, judgements by the Panel were based entirely on the evidence presented in the EPs, any cross-referral from the other panels and EAGs, and any specialist advice.

Panel transactions

On average, each Panel Member was involved in the preliminary assessment of about 60 EPs (as either lead or second assessor) before meeting to discuss each as a Panel.

There were no EPs nominated by TEOs for assessment by the Panel that required a transfer to other panels for assessment. Two EPs were transferred to the Panel for assessment (design). Those transfers were the result of ensuring the content of EPs was appropriately aligned with the assessing panel.

Of the EPs assessed by the Panel, 46 had been cross-referred to other panels for additional assessment advice. Details are set out in Table 2 below.

Table 2: Number of cross-referred EPs assessed by other panels

Subject Area	Cross-Referral Panel	Total
Architecture, Design, Planning, Surveying	Biological Sciences	1
	Business and Economics	1
	Creative and Performing Arts	4
	Education	1
	Humanities and Law	2
	Māori Knowledge and Development	1
	Social Sciences and Other Cultural/Social Sciences	2
	Sub-total	12
Engineering and Technology	Biological Sciences	2
	Business and Economics	1
	Education	2
	Humanities and Law	1
	Mathematical and Information Sciences and Technology	12
	Medicine and Public Health	8
	Physical Sciences	7
	Social Sciences and Other Cultural/Social Sciences	1
	Sub-total	34
	Total	**46**

A further five EPs were assigned to Specialist Advisers to assist EP assessment. Further details can be found in Table 3.

Table 3: Number of EPs submitted to the Panel that were assigned to a Specialist Adviser

Subject Area	Number of EPs
Architecture, Design, Planning, Surveying	4
Engineering and Technology	1
Total	**5**

Sixty-one EPs were assessed by EAGs. Further details can be found in Table 4.

Table 4: EPs assessed by subject area and EAG

Subject Area	EAG					
	Pacific Research EAG	Commercial Subgroup PAR EAG	Environmental Subgroup PAR EAG	Professional Practice Subgroup PAR EAG	Social Subgroup PAR EAG	Total
Architecture, Design, Planning, Surveying	2	–	10	12	–	**24**
Engineering and Technology	–	17	7	13	–	**37**
Total	**2**	**17**	**17**	**25**	**–**	**61**

The Panel assessed 42 cross-referred EPs. Further details can be seen in Table 5.[3]

Table 5: Number of cross-referred EPs assessed by the Panel

Primary Panel	Subject Area	Number of EPs
Biological Sciences	Agriculture and Other Applied Biological Sciences	3
	Ecology, Evolution and Behaviour	2
Business and Economics	Economics	1
	Management, Human Resources, Industrial Relations and Other Businesses	6
Creative and Performing Arts	Design	6
	Music, Literary Arts and Other Arts	1
	Visual Arts and Crafts	1
Education	Education	1
Māori Knowledge and Development	Māori Knowledge and Development	2
Mathematical and Information Sciences and Technology	Computer Science, Information Technology, Information Sciences	4
	Pure and Applied Mathematics	1
Medicine and Public Health	Biomedical	5
	Clinical Medicine	1
Physical Sciences	Chemistry	7
	Earth Sciences	1
	Total	**42**

Referral of EPs

The primary reasons for referral of EPs to other panels were:

- when a TEO submitting the EP requested a cross-referral to another panel
- where at least one NRO of an EP fell within a subject area covered by another panel
- when there was no specialist subject area expertise in the Panel to fairly assess an EP.

The primary reason for referral of EPs to Specialist Advisers was that the Panel required specialist expertise in the surveying field. The Panel notes all five requests were submitted to the same Specialist Adviser.

Conflicts of interest

The Panel through a combination of approaches, managed conflicts of interest effectively.

- Panel Members were at any point in the assessment process able to declare potential conflicts of interest against any EP that was assigned to the Panel.

[3] The Panel Chair declined requests for cross-referrals where the expertise required for assessing an EP was not available on the Panel.

Such conflicts guided the Secretariat and Chair ensuring that for pre-meeting assessment, no Panel Member was assigned an EP against which they had declared a significant conflict of interest.

- Where an EP was assigned to a conflicted Panel Member in error, the EP was reassigned to someone else and the Panel Member concerned was asked to destroy the EP evidence and not contribute to the assessment of that EP.

- The guidance regarding conflicts of interest were discussed at the beginning of the meeting. Panel Members were asked to use due discretion along with the guidance provided, as to the action that should be taken with regards to conflicts of interest of varying degrees.

- Where conflicts were tenuous, Panel Members were permitted to remain in the room and not participate in the discussion. Where the potential conflict was more obvious (for example, departmental colleagues), Panel Members left the room for the duration of the discussion of the EP.

- The Chair, Deputy Chair and Secretariat continually monitored conflicts of interest declarations throughout the course of the meeting, both during calibrated Panel scoring and holistic assessment to ensure conflicted Panel Members left the room when appropriate.

- When the Chair was required to leave the room for a significant conflict of interest, the Deputy Chair led the meeting.

Calibration of Panel judgements

The Panel achieved effective calibration through application of the Guidelines.

Pre-Panel activities

- Preliminary scoring involved Panel Members being paired to assess EPs. This involved reaching a preparatory score individually, before discussing each EP with the second Panel Member to come to a preliminary (or agreed) score for each of the three components of the EP. Panel Members commented how, in most cases, preliminary scores were generally reached with reasonable ease.

- The Panel noted data entry errors in the initial stage of the assessment, which in some cases led to preparatory scores being revised following preliminary discussion (point noted in Key Issues). These errors were corrected and did not impact assessment at the Panel meeting.

Panel activities

- The Panel was presented with themes from the first Moderation Panel meeting which the Panel Chair attended. It was noted that the Moderation Panel had no specific requests of the Panel.

- The Panel viewed and discussed examples of EPs that received preliminary weighted scores in the mid-range of the “A”, “B” and “C” quality categories, whilst also reviewing EPs from the “A”/”B”, “B”/“C” and “C”/“R” quality category

boundaries. These EPs were used at the start of the meeting to provide a benchmark in each quality category along with tie-point descriptors for each of the three components (research output, peer esteem, and contribution to the research environment).

- Having established benchmarks against which the substantive scoring calibration could be based, EPs were then presented in turn by the lead assessor with further comment provided where necessary by the secondary assessor. Discussion occurred where there were concerns or disagreements about the preliminary component scores assigned to the EP.

- In line with themes communicated by the Moderation Panel, the component scores were then calibrated by the Panel as necessary to ensure consistency in scoring across all Panel Members.

- The Panel moved through the EPs from lowest preliminary score to highest, with no subject area clustering deemed necessary. This ensured the full Panel remained involved in discussion (with discussion moving from one subject to another regularly) and enabled a more enhanced Panel calibration. Panel Members' EPs were discussed last after holistic assessment of all other EPs and in accordance with the conflict of interest protocols.

- All EPs were discussed in the Panel meeting.

- No specific Moderation Panel requests were made during the calibration process, although further guidance was provided on the consideration for holistic assessment.

Holistic assessment

- After completion of calibrated panel component scores, the Panel addressed the process of holistic assessment.

- Thirty-six EPs were considered in detail as part of the holistic phase of assessment.

- The quality category assigned to 10 of these EPs was changed as a result of this holistic assessment. It is noted that all of these changes were made to EPs from the engineering and technology subject area.

- These holistic assessment changes followed Panel agreement that they had appropriately scored each of the calibrated panel component scores, but felt that the quality category derived from those scores did not accurately reflect the summation of the researcher's work.

- In each of these cases, the holistic quality category that was assigned was higher than the calibrated panel quality category.

The Panel worked in accordance with the Guidelines, although the Panel noted that the quality category descriptors were more general in nature than the tie-point descriptors used to guide the assignment of component scores. As a result, the Panel took care to apply a consistent standard when considering whether to assign either an "A" or "B" quality category at this stage.

Final quality category

In accordance with the process set out in the Guidelines, final quality categories were assigned for each EP submitted to the Panel. There were no further changes to those noted in the holistic assessment above.

Panel Commentary

Relative strength of New Zealand research

The final quality categories assigned by the Panel in 2012 reconfirmed the strengths in the engineering and technology, and architecture, design, planning and surveying subject areas.

The final average quality scoring (AQS) has not increased significantly and in the case of architecture, design, planning and surveying has marginally decreased. The assessment does indicate significant overall growth in the sector based on the increase in the number of EPs assessed by the Panel compared to 2006. A total of 587 EPs were awarded a funded quality category as part of the 2012 Quality Evaluation which is an increase of 23.8% from the 475 EPs in 2006.

There were excellent examples of world-class research being done in New Zealand in both of the subject areas covered by the Panel. The numbers of “A”s and “B”s awarded increased in all subject areas (in addition to the overall increases in the number of funded quality categories). These results illustrate the impact of the higher research expectations of researchers in New Zealand, which to some extent has led to greater published work in internationally recognised media such as journals.

The significant growth in researchers in conjunction with the modest increase in the AQS across the Panel compared to the results from the 2006 Quality Evaluation is seen as a positive outcome by the Panel and is consistent with the Government’s economic objectives as they relate to the fields of engineering, technology and architecture.

The 2012 Quality Evaluation results also highlighted significant depth in new and emerging researchers in the Panel’s subject areas. Of the 126 new and emerging researchers assigned a funded quality category, 15.9% were assigned an “A” or “B” quality category. These researchers will be critical to replacing the large number of experienced researchers who are now nearing retirement.

Māori research

The Panel sought cross-referral advice from the Māori Knowledge and Development Panel for a single EP. The cross-referral advice was of significant importance in determining the final score and grade for the EP.

The Panel did not receive any cross-referral requests from the Māori Knowledge and Development Panel.

Pacific research

The Panel sought advice from the Pacific Research EAG for two EPs in the architecture and design subject area. The advice was of significant importance in determining the final score and grade for the EPs, with particular reference to the unique research areas.

Professional and applied research

The Panel welcomed the introduction of the PAR EAG, following on from its recommendations in the 2006 Quality Evaluation. The PAR EAG provided assessment on 59 EPs for the Panel and assessment for a number of EPs benefited from the additional advice provided.

There were concerns, however, with the consistency and general calibration of the PAR EAG assessments. Greater emphasis on these components in future Quality Evaluations will enhance value of the EAG assessments provided to the Panel.

The Panel remains in support of the PAR EAG assessment process, acknowledging the benefits it adds to those researchers in less traditional academic research areas. The Panel though emphasises the need for greater consistency in EAG assessments.

The Panel recommends an enhanced EAG training arrangement (potentially with primary panels) to ensure a consistent approach to scoring and comments.

TEO subject area strengths

With EPs spread over a wide range of discipline areas and across 13 TEOs of varying sizes, it was difficult for the Panel to undertake any in-depth analysis of relative TEO strengths or to fairly highlight particular areas and/or TEOs as having research strength in any particular area although this could be undertaken by further analysis of the output of this process.

Performance-Based Research Fund
2012 Quality Evaluation

Health Panel
Panel Report

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Executive Summary

- This report summarises the results of the assessment undertaken by the Health Peer-Review Panel ("the Panel") during the Performance-Based Research Fund (PBRF) 2012 Quality Evaluation and confirmed at a meeting held in Auckland between 26 and 29 November 2012.

- The 15-member Panel assigned funded quality categories to 412[1] evidence portfolios (EPs). In accordance with the processes set out in the PBRF 2012 Quality Evaluation Guidelines ("the Guidelines"), the Panel assigned the following final funded quality categories:

Quality Category	EPs (numbers)	EPs (FTE weighted)
A	40	37.72
B	131	123.45
C	169	151.44
C(NE)	72	66.67
Total	412	379.28

Note: Full-time equivalent (FTE) weighted numbers have been included for informational purposes. In determining average quality scores and funding, the number of staff and evidence portfolios are both FTE weighted (see *Evaluating Research Excellence – the 2012 Assessment Interim Report* for more information).

- The Panel effectively achieved calibration of preliminary scores and incorporated holistic judgements into the assignment of final quality categories.

- The Panel considered that some tertiary education organisations (TEOs) had inaccurately reported individual staff members as new and emerging because the researcher was new to the academic environment or recently appointed. As a result, the Tertiary Education Commission changed the new and emerging status of these evidence portfolios (EPs) after the external auditors found they did not meet the criteria.

- The Panel appropriately managed possible conflicts of interest.

- The Panel made a number of recommendations for the TEC Board of Commissioners ("the Board") to consider for future Quality Evaluations.

[1] Numbers and percentages provided in this report are not FTE weighted unless otherwise noted.

Recommendations

It is recommended that the Tertiary Education Commission's (TEC) Board of Commissioners ("the Board"):

- **note** the process the Health Peer-Review Panel ("the Panel") followed as part of the Performance-Based Research Fund (PBRF) 2012 Quality Evaluation as outlined in this report
- **note** that the Panel has assigned a total of 412[2] funded quality categories
- **approve** the funded quality categories listed below.

The 15-member Panel assigned funded quality categories to 412 evidence portfolios (EPs). Funded quality categories in each of subject area are displayed in Table 1. All other evidence portfolios (EPs) assessed by the Panel were assigned an unfunded quality category, that is "R" or "R(NE)". In accordance with the reporting framework for the 2012 Quality Evaluation, the number of EPs assigned unfunded quality categories is not reported in this report.

Table 1: Final funded quality categories by subject area

Subject Area	A	B	C	C (NE)	Number of EPs
Dentistry	9	15	12	5	41
Nursing	3	16	46	6	71
Other Health Studies (including Rehabilitation Therapies)	12	46	65	28	151
Pharmacy	7	18	6	7	38
Sport and Exercise Science	2	15	20	20	57
Veterinary Studies and Large Animal Science	7	21	20	6	54
Total	**40**	**131**	**169**	**72**	**412**

The Panel also recommended that the Board **consider** the following for future Quality Evaluations.

- Give a stronger message to tertiary education organisations (TEOs) about the need to provide assistance to staff members in preparation of their EPs. The Panel noted the absence of basic and essential information in a number of EPs received for assessment.
- Review the eligibility criteria for new and emerging researchers and the process to be followed to collect that information.
- Take further steps to clarify the requirements for the submission of nominated research outputs (NROs), such as patents, to ensure that these are accessible and reviewable by the peer-review panels for the next Quality

[2] Numbers and percentages provided in this report are not FTE weighted unless otherwise noted. See the *Evaluating Research Excellence – the 2012 Assessment Interim Report* for more information.

Evaluation.

- Revisit the requirements for cross-referral panels to provide contextual information around recommendations for preliminary scoring.

Purpose of this Report

This report provides information on the deliberations of the Panel in its meeting between 26 and 29 November 2012. It also sets out the Panel's recommendations to the Board.

Key Observations

Reviewing NROs

The Panel set a goal of reviewing 50% of all NROs. The Panel surpassed this goal and reviewed 74% of all NROs.

To facilitate the review of NROs, documents were requested from TEOs in electronic format. TEOs in general complied with this request. The majority of NROs were accessed electronically. Panel Members requested NROs in hard-copy format when they were not available in electronic format.

The Panel noted that the Guidelines were clear about "expecting" at least four journal articles per EP. Not all EPs adhered to the Guidelines or provided reasons why the advice was not followed. While care was taken to ensure that all EPs were assessed consistently, the Panel noted that the quality categories assigned to these EPs may have been negatively impacted on by not following this advice.

The Panel noted that the process for supplying NROs was, overall, smooth and efficient. For the next Quality Evaluation, the Panel would recommend adding a function to the PBRF IT system that would prompt the assessor to confirm "Record as Accessed" once the NRO link was clicked on. This would solve the issue of panellists needing to remember to go back into NROs to click this button.

Although, intellectual property may not be a major component of research submitted to the Panel, the Panel was encouraged that nine patents were submitted as NROs and 19 as other research outputs (OROs). These were reviewed and taken into consideration by the Panel Members.

Assessing contribution in multi-authored publications

An important part of the review process was the assessment of the contribution of an individual to a multi-authored publication.

Some information on multi-authored publications was available in the respective NRO, but it was noted that the commentary was often quite subjective. The order of authors was deemed to be important in the assessment and first-author or last (senior) author status was taken into account.

Another key issue was that EPs did not provide the author's contribution to the work consistently in the relevant commentary section. Because of this omission, the Panel

had to infer the individual's contribution, especially if they were not first author, or in the case of senior staff, last author.

During the Panel meeting the question was raised as to how collaborative work could be better recognised as part of the Quality Evaluation process. For the next Quality Evaluation, it will be important to consider this issue as research often requires collaboration across a range of disciplines.

Preparation of EPs

TEOs and their staff members need to take more care in the preparation of EPs so that no information is omitted that might assist panellists in carrying out their assessment.

Panel Members are required to assess EPs based only on the content. In many cases, the NRO commentaries were poorly written and omitted information specifically requested in the panel-specific guidelines, such as:

- why the NRO was chosen as one of the best (up to) four research outputs
- how it met the definition of research
- what form of quality assurance was undertaken in producing the research output.

New and emerging researchers

The Panel was concerned that TEOs and staff may not have fully appreciated the implications of not being reported as a new and emerging researcher. In a number of cases, there were EPs that appeared to be new and emerging researchers, but were not reported as such by the TEO. As a result, in these cases the Panel was unable to award the “C(NE)” quality category and therefore the EP did not meet the standard for a funded quality.

Furthermore, it appeared that some staff who met the eligibility criteria for new and emerging researchers set out in the PBRF 2012 Quality Evaluation Guidelines (“the Guidelines”) had a record of previous research experience.

As TEOs are responsible for the submission of the relevant census data, the Panel recommends that more care should be taken in this area and that TEC should provide more support to TEOs.

Cross-referrals

The Panel assessed 47 EPs cross-referred from other panels.

The Panel appreciated the importance for primary and cross-referral panels to collaborate closely where the content of EPs that cross disciplines. The Panel does, however, recommend the inclusion of further guidance on the assessment of such EPs for the next Quality Evaluation.

Canterbury earthquakes – special circumstances

The Panel paid particular attention in reviewing and applying the Guidelines to EPs that claimed Canterbury earthquakes special circumstances. The Panel ensured that EPs with the alternative assessment period of 1 January 2005 to 31 December 2010 did not receive additional consideration for these special circumstances. The Panel did take care to take account of any other special circumstances claimed as part of these EPs.

Other special circumstances

The Panel applied special circumstances in accordance with the processes set out in the Guidelines.

Expert Advisory Groups (EAGs)

Eleven EPs were referred to the Professional and Applied Expert Advisory Group (PAR EAG).[3] Overall, the advice provided by the PAR EAG was considered and factored into the assessment.

Only one EP was referred to the Pacific Research EAG. The advice provided was considered and factored into the assessment.

Panel Process

Membership and process

The 15-member Panel included:

- Chair: Professor Peter Joyce
- Deputy Chair: Professor John Shaw
- Professor David Baxter
- Professor Stephen Challacombe
- Dr John Craven
- Associate Professor Marie Crowe
- Dr Pauline Ford
- Professor Margaret Horsburgh
- Professor Leo Jeffcott
- Professor Marlena Kruger
- Professor Karen Luker
- Professor Bob Marshall
- Professor Kathryn McPherson
- Professor Michael Robb
- Professor Peter Stewart

Four members were new to the Quality Evaluation process and 11 members had participated in the 2006 Quality Evaluation. The Deputy Chair was newly appointed to the position.

[3] The PAR EAG declined to score one EP because it did not meet the PAR EAG criteria.

Eight of the members are based at New Zealand universities, one at a polytechnic, and the remaining six members are based overseas.

Each EP was assigned to two Panel Members who provided agreed preliminary component scoring prior to the meeting, taking into account any cross-referred, EAG assessor and Specialist Adviser advice.

In all cases, judgements by the Panel were based entirely on the evidence presented in the EPs, along with any advice from cross-referrals, EAG assessors, and Specialist Advisers.

The Panel met for a four-day meeting in Auckland from 26 to 29 November 2012. All 15 Panel Members were present throughout the meeting.

The Panel referred to both the panel-specific guidelines and the Guidelines in their assessments.

EP assessments

On average, each Panel Member was involved in the preliminary assessment of 66 EPs before meeting to discuss each EP as a Panel.

Forty-seven EPs were cross-referred to and assessed by the Panel.[4]

Table 2: Cross-referred EPs assigned to and assessed by the Panel

Primary Panel	Subject Area	Number of EPs
Biological Sciences	Agriculture and Other Applied Biological Sciences	1
	Molecular, Cellular and Whole Organism Biology	4
Creative and Performing Arts	Music, Literary Arts and Other Arts	2
Education	Education	2
Māori Knowledge and Development	Māori Knowledge and Development	1
Medicine and Public Health	Biomedical	5
	Clinical Medicine	2
	Public Health	11
Social Sciences and Other Cultural/Social Sciences	Psychology	17
	Sociology, Social Policy, Social Work, Criminology & Gender Studies	2
	Total	**47**

[4] The Panel Chair declined requests for cross-referrals where the expertise required for assessing an EP was not available on the Panel.

The Panel received cross-referral advice on four EPs.

Table 3: Cross-referrals to other panels by subject area

Subject Area	Cross-Referral Panel	Number of EPs
Nursing	Māori Knowledge and Development	1
Other Health Studies (including Rehabilitation Therapies)	Māori Knowledge and Development	1
	Medicine and Public Health	1
Sport and Exercise Science	Mathematical and Information Sciences and Technology	1
	Total	**4**

Referral of EPs

The primary reasons for cross-referral of EPs to other panels were:

- when a TEO submitting the EP requested a cross-referral to another panel
- when a significant proportion (but not a majority) of the research output component of an EP fell within the subject area that was covered by another panel
- when additional expertise was required to fairly assess an EP.

Conflicts of interest

The Panel managed the conflicts of interest process well, with early declarations, the Chair and Secretariat notified, and EPs assigned accordingly.

Panel Members were able, at any point in the assessment process, to declare potential conflicts of interest in relation to any EP that was assigned to the Panel.

Such conflicts guided the Secretariat and Panel Chair in ensuring that, for pre-meeting assessment, no Panel Member was assigned an EP against which they had declared a conflict of interest.

The guidance regarding conflicts of interest, as presented by the Moderation Panel, was discussed at the beginning of the Panel meeting.

Those Panel Members who had recorded a conflict of interest, or who decided during the meeting that they had a potential conflict of interest, absented themselves from the room for the discussion on relevant EPs during the calibration process.

This happened in most cases, except with a small number of EPs where the conflict of interest was a result of a link so tenuous that it was deemed appropriate by the Chair for the Panel Member to remain silent in the room and not participate in the discussion.

When the Panel Chair had a conflict of interest, the Deputy Chair led the meeting.

The EPs of seven Panel Members were considered by the Panel. While their EP was being considered by the Panel, the Panel Member was excused from the meeting and played no role in the assessment of their EP.

All Panel Members were present during the holistic assessment at the end of the meeting, however, care was taken to ensure those Panel Members with a conflict of interest did not comment.

Calibration of Panel judgements

The Panel achieved effective calibration through following the panel-specific guidelines and adhering to guidance from the Moderation Panel.

Preliminary scoring involved Panel Members being paired to assess EPs. This involved reaching a preparatory score individually, before discussing each EP with the second Panel Member to come to a preliminary (or agreed) score for each of the three components (research output, peer esteem, and contribution to the research environment).

At the Panel meeting, the Chair and Secretariat presented the Panel with themes from the first Moderation Panel meeting.

The Moderation Panel asked that the Panel pay particular regard to the following issues:

- the calibration of scoring in relation to the subject areas of nursing and other health studies in light of the variation between lead Panel Members in the average preliminary weighted scores assigned

- the significant increase in the average quality score for dentistry, nursing and veterinary studies

- the significant change in the proportions of each quality category assigned on an individual basis including dentistry and pharmacy.

Following the Panel Chair and Secretariat's presentation, the Panel undertook a calibration exercise. The Panel viewed and discussed examples of EPs that received preliminary weighted scores in the mid-range of the "A", "B", "C", "C(NE)" and "R" quality categories. These EPs were used at the start of the meeting to provide a benchmark in each quality category along with tie-point descriptors for each of the three components in an EP (research output, peer esteem, and contribution to the research environment).

Having established these benchmarks, the Panel proceeded to review each EP.

The relevant EP was presented by the lead Panel Member. Discussion occurred where there were concerns or disagreements about the preliminary component scores assigned to the EPs. In line with themes communicated by the Moderation Panel, the component scores were then calibrated by the Panel as necessary to ensure consistency in scoring across the Panel. The Panel moved through each EP, regularly swapping between subject areas.

During this exercise, the Panel became familiar with the common dilemmas that faced assessors and ensured appropriate calibration occurred for scores in each of the three components.

During the calibration phase, a number of EPs were identified that required detailed Panel discussion. These were also reviewed prior to commencing holistic assessments.

The Panel noted that the PBRF IT system was helpful in ensuring an efficient process.

Holistic assessment

After completion of calibrated panel component scores, the Panel addressed the process of holistic assessment. The Panel determined that five EPs warranted further discussion in the holistic assessment phase. The quality category assigned to one of these EPs was changed during this phase.

During the calibration process, the Panel calculated the quality category based on the component scores for each EP. The Panel made holistic judgements about the quality category that each particular EP would be assigned. Where adjustments were considered, component scores were normally revisited and adjusted as appropriate.

Final quality category

In accordance with the process set out in the Guidelines, final quality categories were assigned to each EP submitted to the Panel. These were confirmed through the PBRF IT system by the Secretariat.

Panel Commentary

Relative strength of New Zealand research

Panel members noted the high standard of published output in each of the disciplines covered in this Panel.

Māori research

The Panel received additional advice on two EPs from the Māori Knowledge and Development Panel. This advice was considered and factored into the preliminary scores.

Members of the Panel provided additional advice to the Māori Knowledge and Development Panel on one EP.

Pacific research

Advice provided by the Pacific Research EAG (one EP) was considered and factored into the assessment of the EP that was referred to it.

Professional and applied research

Advice provided by the PAR EAG was considered and factored into the assessment of EPs as appropriate.

General feedback

- The Chair was confident that the Panel applied a very robust process in assessment and the scores are defensible, particularly at the margins.

- The Panel asked whether a workable definition of a “research platform” could be developed.

- The Panel recommended that further analysis be undertaken to assess the effect of the PBRF on the quality of research and the behaviour of researchers.

- The Panel suggested that for the next Quality Evaluation advice be provided to researchers and TEOs to reconsider submitting conference or seminar papers as on the whole these research outputs were scored lower by the Panel.

- The Panel recommended that more care should be taken in selecting research outputs and that the TEC should continue to provide more specific support to TEOs.

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Humanities and Law Panel
Panel Report

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Executive Summary

- This report summarises the results of the assessment undertaken by the Humanities and Law Peer-Review Panel ("the Panel") during the Performance-Based Research Fund (PBRF) 2012 Quality Evaluation and confirmed at a meeting held in Auckland between 26 and 30 November 2012.

- The Panel assigned funded quality categories to 671[1] evidence portfolios (EPs). In accordance with the processes set out in the PBRF 2012 Quality Evaluation Guidelines ("the Guidelines"), the Panel assigned the following final funded quality categories:

Quality Category	EPs (numbers)	EPs (FTE weighted)
A	82	80.32
B	324	315.11
C	201	193.54
C(NE)	64	60.13
Total	671	649.10

Note: Full-time equivalent (FTE) weighted numbers have been included for informational purposes. In determining average quality scores and funding, the number of staff and evidence portfolios are both FTE weighted (see *Evaluating Research Excellence – the 2012 Assessment Interim Report* for more information).

- The Panel appropriately managed possible conflicts of interest.

- In this report, the Panel has raised several issues and suggestions for consideration by the Tertiary Education Commission's (TEC) Board of Commissioners ("the Board") for the next Quality Evaluation.

Recommendations

It is recommended that the Tertiary Education Commission's (TEC) Board of Commissioners ("the Board"):

- **note** the process Humanities and Law Peer-Review Panel ("the Panel") followed as part of the Performance-Based Research Fund (PBRF) 2012 Quality Evaluation as outlined in this report

- **note** that the Panel assigned a total of 671[2] funded quality categories

- **approve** the funded quality categories listed in the table below.

Funded quality categories in each of the subject areas are displayed in Table 1. All other evidence portfolios (EPs) assessed by the Panel were assigned an unfunded quality category, that is "R" or "R(NE)". In accordance with the reporting framework for the 2012 Quality Evaluation, the number of EPs assigned unfunded quality categories is not reported in this report.

[1] Numbers and percentages provided in this report are not FTE weighted unless otherwise noted. See the *Evaluating Research Excellence – the 2012 Assessment Interim Report* for more information.
[2] Ibid.

A total of 671 EPs submitted to the Panel in 2012 were assigned a funded quality category.

Table 1: Final funded quality categories by subject areas

Subject Area	A	B	C	C(NE)	Number of EPs
English Language and Literature	8	36	24	9	77
Foreign Languages and Linguistics	11	60	64	14	149
History, History of Art, Classics and Curatorial Studies	18	83	50	11	162
Law	30	93	37	20	180
Philosophy	12	32	13	6	63
Religious Studies and Theology	3	20	13	4	40
Total	**82**	**324**	**201**	**64**	**671**

The Panel also recommended that the Board **consider** the following for the next Quality Evaluation.

- Require panellists carrying out cross-referrals to provide contextual information supporting their preparatory scores.
- Revise the PBRF 2012 Quality Evaluation Guidelines ("the Guidelines") to require researchers claiming special circumstances to provide specific information on the impact of their circumstances on the quantity of evidence of research outputs, peer esteem, or contribution to the research environment.
- Provide further guidance on the appropriate categorisation of research outputs.
- Clarify the requirements for uploaded PDF documents to ensure tertiary education organisations (TEOs) provide research output material more consistently.
- Review the use of the terminology "preparatory" and "preliminary" in the EP scoring system to indicate more clearly the stages in the assessment process.
- Require that no researcher be submitted with new and emerging status for more than one Quality Evaluation.
- Provide more explicit directions as to the timing of the holistic assessment in the process.

Purpose of this Report

This report provides information on the deliberations of the Panel at its meeting that was held in Auckland between 26 and 30 November 2012. It also sets out the Panel's recommendations to the Board.

Key Observations

Introduction of the PBRF IT system

The Panel noted that the PBRF IT system used for the assessment of EPs had been robust and user-friendly. The ability to access nominated research outputs (NROs) online facilitated the assessment task, although there was inconsistency in the material provided by TEOs (for example, incomplete PDFs or broken links).

New and emerging researchers

The Panel noted that it was possible for researchers to be submitted as new and emerging in both the 2006 and 2012 Quality Evaluations. This happened if a researcher had taken up their first PBRF-eligible position between January and June 2006. The Panel considered that no researcher should be eligible to be submitted as new and emerging more than once.

Cross-referrals and Expert Advisory Groups (EAGs)

The Panel considered that there are still too many cross-referral requests being made by TEOs. The Panel appreciated the opportunity for Chairs and Panel Members to decline to assess EPs that were inappropriately cross-referred. It does not believe that when an EP has been transferred from one panel to another that it should be automatically cross-referred back to the original primary panel.

Recommended scores from the various forms of advice were used and factored into preliminary scores. In some instances, the Panel felt that it would have been beneficial to have further contextual information about the scoring provided by cross-referral panels and EAG assessors. This could be more explicitly recommended in the Guidelines, although this ability will be tempered by time constraints.

Some cross-referral and EAG advice was received late in the process. The late EAG scores were taken into account during later Panel-wide discussions and before assigning final quality categories.

The Panel also considered that, in initiating a cross-referral, it would be beneficial to have a greater understanding of what the primary panel is seeking, such as an assessment or advice on research output, peer esteem or contribution to the research environment.

Input from Specialist Advisers

The Panel had a significant number of Specialist Advisers (see further comment under Subject Areas below). As with cross-referral and expert advice, there was inconsistency in the contextual information provided by Specialist Advisers as to how they had derived their advised scores. Although some Specialist Advisers were prompt in providing advice, others were late in doing so and this added an element of anxiety to the process.

Table 2: Number of EPs assessed by Specialist Advisers

Subject Area	Number of EPs
Foreign Languages and Linguistics	26
History, History of Art, Classics and Curatorial Studies	4
Philosophy	2
Total	**32**

Special circumstances

Panel Members took account of special circumstances when assigning preliminary and preparatory component scores. Special circumstances were discussed and taken into account when assigning calibrated Panel scores. The Panel noted that where special circumstances were specific and linked to a specific research output or other factor, the effect or impact on the researcher was more easily understood. The Panel recommends that, in future, the scope of special circumstances be more clearly defined, such as by identifying the area(s) (research outputs, peer esteem, or contribution to the research environment) affected by the special circumstances.

Special circumstances for Canterbury earthquakes

The Panel noted that when a researcher claiming special circumstances for Canterbury earthquakes selected the earlier assessment phase (2005-2010), they were also able to provide additional details.

The Panel noted that the Guidelines stated that as well as optional commentary, "a researcher claiming Canterbury Earthquakes Special Circumstances ***may also*** choose an alternate assessment period of 1 January 2005 to 31 December 2010" (emphasis added).

This led to some confusion as some comments of researchers who had opted for the alternative assessment period related to events after the February 2011 earthquake, and therefore were outside the research period selected.

On identifying this issue, the Panel again reviewed the EPs where special circumstances for Canterbury earthquakes and the earlier assessment period were selected to ensure that no immaterial considerations had been taken into account.

Subject areas

The Panel experienced some difficulty in the subject area of foreign languages and linguistics. Six researchers with specialist expertise in foreign language and linguistics were appointed to the Panel, and other Panel Members also indicated their capacity and willingness to assess research in and about foreign languages and cultures.

The Panel required a significant number of Specialist Advisers to cover the range of subject areas. The Panel received EPs from researchers working in five modern European languages, three modern Asian languages, and a number of Pacific languages. The number of EP submissions from researchers working in Pacific languages is increasing. Classical languages were also covered. To provide Panel coverage of all languages proved to be impossible. When NROs published in English were submitted for EPs in foreign languages, Panel Members from another subject area with expertise in cultural, literary, linguistic and/or philosophical studies could sometimes be involved in the assessment. In some cases, Panel Members from other subject areas with expertise in a foreign language assessed EPs in foreign languages.

A number of EPs in this subject area were submitted by researchers working in the area of English as a second language. This was noted in 2006 and with an increased number of EPs in 2012 represents a trend. While some of this research is clearly linguistic research, much is in the area of research on learning methods and may be more appropriately submitted to the Education Panel. Some EPs in this category were cross-referred or transferred between panels.

The Panel considers that the subject area of foreign languages and linguistics may require clearer guidance on coverage and distribution between panels.

Panel Process

Membership and process

The 24-member Panel included:

- Professor Raewyn Dalziel (Panel Chair)
- Professor Mark Henaghan (Deputy Chair)
- Professor Peter Anstey
- Professor Belinda Bennett
- Professor Jenny Cheshire
- Professor Paul Clark
- Professor Ivor Davidson
- Professor Alistair Fox
- Professor Vivienne Gray
- Professor Robert Hannah
- Ms Jenny Harper
- Professor Margaret Harris
- Professor Diane Kirkby
- Associate Professor Peter Lineham
- Professor Stuart MacIntyre
- Professor Edwin Mares

- Professor Timothy Mehigan
- Associate Professor Edwina Palmer
- Professor Raylene Ramsay
- Professor Paul Rishworth
- Professor Anthony Smith
- Professor Stephen Todd
- Professor Lydia Wevers
- Professor Cynthia White

Of the 24 Panellists, 11 had been on the Panel in a previous Quality Evaluation.

There were six international Panel Members, employed by overseas universities, who participated fully in the pre-meeting assessment of EPs and travelled to New Zealand for the Panel meeting.

Each EP was assigned to two Panel Members who provided preparatory scores, which were discussed between the pair. These, along with comments and/or scores from cross-referral panel members, EAG members, or Specialist Advisers, where appropriate, formed the preliminary scoring agreed to prior to the Panel meeting.

The Panel met for four and half days between 26 and 30 November 2012. All Panel Members were present for the majority of the Panel meeting and were involved throughout the meeting discussions.[3] EPs of Panel Members were assessed at the end of the fourth day of the meeting. For this part of the meeting, all Panel Members with an EP being assessed left the room. The seven remaining Panel Members covered all broad subject fields except philosophy. Advice was received from the appropriate philosophy Panel Member in the relevant cases.

In all cases, judgements by the Panel were based entirely on the evidence presented in the EPs, any cross-referral advice received from other panels, EAG assessors, and any advice from Specialist Advisers.

Referrals of EPs

Where a NRO warranted specific expertise that was not present within the Panel, a cross-referral or specialist advice was sought.

The primary reasons for referral of EPs to other panels were:

- when a TEO submitting the EP requested a cross-referral to another panel

- when a significant proportion (but not a majority) of the research output component of an EP fell within the subject area that was covered by another panel

- when the assessment of an EP required expertise that a Specialist Adviser could provide – this was most often required where a NRO was written in a foreign language other than one of those in which a Panel Member had expertise.

[3] Over the four days of substantive assessment, one Panel Member was unavailable on the afternoon of Monday 26 November and one was not available on Thursday, 29 November due to circumstances outside of their control.

Seventy-three EPs were cross-referred to and assessed by other panels for additional assessment advice, as set out in Table 3 below.

Table 3: EPs cross-referred to and assessed by other panels

Subject Area	Cross-Referral Panel	Number of EPs
English Language and Literature	Creative and Performing Arts	11
	Education	1
	Māori Knowledge and Development	1
	Social Sciences and Other Cultural/Social Sciences	1
	Sub-total	**14**
Foreign Languages and Linguistics	Creative and Performing Arts	1
	Education	10
	Māori Knowledge and Development	2
	Social Sciences and Other Cultural/Social Sciences	4
	Sub-total	**17**
History, History of Art, Classics and Curatorial Studies	Creative and Performing Arts	9
	Māori Knowledge and Development	4
	Social Sciences and Other Cultural/Social Sciences	3
	Sub-total	**16**
Law	Business and Economics	5
	Māori Knowledge and Development	10
	Medicine and Public Health	2
	Social Sciences and Other Cultural/Social Sciences	4
	Sub-total	**21**
Philosophy	Māori Knowledge and Development	1
	Mathematical and Information Sciences and Technology	2
	Social Sciences and Other Cultural/Social Sciences	2
	Sub-total	**5**
	Total	**73**

The Panel also received 93 cross-referrals from other panels, where other panels were able to use additional input from Panel Members.[4] The number of cross-referral assessments that the Panel provided to other panels can be seen in Table 4, broken down by subject area.

Table 4: Cross-referred EPs assigned to and assessed by the Panel

Primary Panel	Subject Area	Number of EPs
Business and Economics	Accounting and Finance	4
	Management, Human Resources, Industrial Relations and Other Businesses	1
Creative and Performing Arts	Design	2
	Music, Literary Arts and Other Arts	4
	Theatre and Dance, Film, Television and Multimedia	2
	Visual Arts and Crafts	3
Education	Education	22
Engineering Technology and Architecture	Architecture, Design, Planning, Surveying	2
	Engineering and Technology	1
Māori Knowledge and Development	Māori Knowledge and Development	5
Mathematical and Information Sciences and Technology	Computer Science, Information Technology, Information Sciences	2
	Pure and Applied Mathematics	1
Medicine and Public Health	Biomedical	3
	Public Health	1
Social Sciences and Other Cultural/Social Sciences	Anthropology and Archaeology	11
	Communications, Journalism and Media Studies	14
	Political Science, International Relations and Public Policy	7
	Psychology	1
	Sociology, Social Policy, Social Work, Criminology & Gender Studies	7
	Total	**93**

Conflicts of interest

The Panel, in accordance with the Guidelines, managed conflicts of interest effectively.

Management of conflicts of interest was first discussed at the Panel's training in April 2012. Panel Members were able, at any point in the assessment process, to declare potential conflicts of interest in relation to any researcher or EP that was assigned to the Panel. Such conflicts guided the Panel Chair in ensuring that, for pre-meeting assessment, no Panel Member was assigned an EP against which they had declared a conflict of interest, or where a conflict of interest notification had been received from a TEO or researcher.

[4]The Panel Chair declined requests for cross-referrals where the expertise required for assessing an EP was not available on the Panel.

Two late potential conflicts of interest were notified and were discussed with the Panel Chair. These were not deemed to be conflicts that would be, or would be seen to be, significant.

The Guidelines regarding conflicts of interest were discussed at the beginning of the meeting. The Panel noted that the presence of a Panel Member from the same department as the researcher whose EP was being assessed could be construed as being influential even if the Panel Member was silent during the discussion. Accordingly, those Panel Members who had recorded a conflict of interest, who decided during the meeting that they had a potential conflict of interest, or who were a member of the same department at the same TEO as the researcher, absented themselves from the room for the discussion on such EPs during the calibration of component scores. This happened in all cases, except in a small number of EPs where the conflict of interest was a result of a link so tenuous that it was deemed appropriate by the Panel Chair for the Panel Member to remain in the room and not participate in the discussion.

For the purposes of thorough record-keeping, a note was made when a Panel Member declared a conflict and left the room, and the time of exit and return was formally noted.

When the Panel Chair had a conflict of interest and left the room, the Deputy Chair led the meeting.

Calibration of Panel judgements

The Panel calibrated EP scores in accordance with advice from the Moderation Panel and the process in the Guidelines.

Assessment phase

At the initial stage of assessment, two Panel Members were assigned to each EP, one as a lead and the other as a second. Each Panel Member was asked to come to a preparatory score based on their assessment of the EP. Each EP was then discussed between the pair to come to a preliminary (or agreed) score for each of the three components of research output, peer esteem, and contribution to the research environment.

To assist in this process, the PBRF IT system required entry of confirmed preparatory scores before both the Panel Members' scores became visible to the pair. After discussions, the lead Panel Member entered the agreed preliminary score into the PBRF IT system.

Preparatory component scoring

The Panel noted there had been some data entry errors in the initial stage of the assessment, which led to the intended preparatory scores being re-entered following discussion. As these errors we corrected they did not impact assessment at the Panel meeting. The Panel recommended that in future Quality Evaluations preparatory scoring be locked after entry.

Panel meeting

At the Panel meeting, the Panel was advised of discussions at the Moderation Panel meeting, attended by the Chair, and the ranking of the Panel's preliminary scoring relative to other panels.

The Panel as a whole undertook calibration of six EPs that spanned a variety of subject areas, TEOs, preliminary scores and quality categories. The Panel Members reviewed each of the six and noted their suggested scoring for each, acknowledging that this was done without the assessment of the NROs. These EPs, along with tie-point descriptors, were used at the start of the meeting to provide a benchmark in each quality category for each of the three EP components (research output, peer esteem, and contribution to the research environment).

Having established benchmarks against which the substantive scoring calibration could be based, the Panel proceeded to review the EPs, with special attention and a significant amount of time being given to EPs on both sides of the cusp of each quality category, EPs with special circumstances, including Canterbury earthquakes special circumstances, and EPs with significantly different scores for component factors. The relevant EP was presented by the lead Panel Member. The component scores were then calibrated by the Panel to ensure consistency in scoring across the Panel.

The Panel moved through the EPs in a systematic way, grouped by quality category, then by score and subject matter. This provided a good comparison across similar areas of research and assisted in managing conflicts of interest where Panel Members from a particular TEO and department were able to excuse themselves from the discussions.

Holistic assessment

After completion of calibrated panel component scores, the Panel addressed the process of holistic assessment. The Panel was of the view that it had applied holistic judgements as it had proceeded through the process and decided not to make any changes to final quality categories as a result of a holistic evaluation.

Final quality category

In accordance with the process set out in the Guidelines, final quality categories were assigned for each EP submitted to the Panel. These were confirmed through the PBRF IT system by the Secretariat.

Panel Commentary

Relative strength of New Zealand research

Research in the subject areas covered by the Panel is strong at the top end. Panel Members noted that some of the researchers evaluated are among the top scholars in the world in their fields. There is a large body of researchers with excellent national reputations.

The Panel noted that the only subject areas that are experiencing growth among younger scholars are law and foreign languages and linguistics. A number of top scholars were no longer PBRF eligible since the 2006 Quality Evaluation and others are likely to no longer be PBRF eligible in the next Quality Evaluation. It is important to ensure that there is continuing recruitment into all subject areas.

Panel Members also noted that the assessment process is an important measure of research strength for humanities and law subjects as these areas are less well placed to win external research grants than are science, engineering, medicine and technology.

Māori research

A small number of EPs submitted to the Panel requested cross-referral advice from the Māori Knowledge and Development Panel. The Panel took into account the cross-referral advice and scores and this was reflected in most final quality categories.

In a very small number of instances there were significant differences between the preparatory component scores assigned by the Panel Members and the Māori Knowledge and Development Panel Members.

Having carefully reviewed these instances of disparate scoring, applying the assessment criteria and benchmarking with other EPs, the Panel confirmed the preliminary scores awarded by the primary Panel Members. Panel selection should be carefully considered by researchers and TEOs in future Quality Evaluations.

Pacific research and professional and applied research

Fewer than expected researchers requested advice from the Pacific Research and Professional and Applied Research EAGs. Both groups declined to provide advice on some EPs which they considered did not meet their criteria. The Pacific Research EAG provided assessment on 16 EPs for the Panel. The Professional and Applied Research EAG provided assessment on six EPs for the Panel.

Where advice was received from an EAG, it was taken into consideration in preliminary scoring and impacted on a small number of preliminary scores and the final quality categories.

Comments on the future shape of the Quality Evaluation

The Panel noted that the current format for the assessment process generally works well, but acknowledged that it was time consuming and expensive to run. One Panel Member commented that this was a “world-class” system and that New Zealand was fortunate to be able to carry out an evaluation on an individual basis. Other Panel Members considered that it was time for New Zealand to consider a different unit for evaluation.

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Māori Knowledge and Development Panel
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Executive Summary

- This report summarises the results of the assessment undertaken by the Māori Knowledge and Development Peer-Review Panel ("the Panel") during the Performance-Based Research Fund (PBRF) 2012 Quality Evaluation and confirmed at a meeting held in Auckland, New Zealand between 3 and 5 December 2012.

- The 10-member Panel assigned funded quality categories to 136[1] evidence portfolios (EPs). In accordance with the processes set out in the PBRF 2012 Quality Evaluation Guidelines ("the Guidelines"), the Panel assigned the following final funded quality categories:

Quality Category	EPs (numbers)	EPs (FTE weighted)
A	14	12.96
B	45	41.89
C	52	47.73
C(NE)	25	23.25
Total	136	125.83

Note: Full-time equivalent (FTE) weighted numbers have been included for informational purposes. In determining average quality scores and funding, the number of staff and evidence portfolios are both FTE weighted (see *Evaluating Research Excellence – the 2012 Assessment Interim Report* for more information).

- The Panel considered that some tertiary education organisations (TEOs) had inaccurately reported individual staff members as new and emerging because the researcher was new to the academic environment or recently appointed. As a result of the Panel drawing the Tertiary Education Commission's (TEC) attention to this concern, several EPs had their new and emerging status changed after the external auditors found these EPs did not meet the criteria.

- The Panel adequately and appropriately managed conflicts of interest in accordance with the processes set out in the Guidelines.

- The Panel effectively achieved calibration of preliminary scores and incorporated holistic judgements into the assignment of final quality categories.

- The Panel has made a number of recommendations for the Tertiary Education Commission's (TEC) Board of Commissioners ("the Board") to consider for future Quality Evaluations.

Recommendations

It is recommended that the Tertiary Education Commission's (TEC) Board of Commissioners ("the Board"):

- **note** the process the Māori Knowledge and Development Peer-Review Panel ("the Panel") followed as part of the Performance-Based Research Fund (PBRF) 2012 Quality Evaluation as outlined in this report

[1]Numbers and percentages provided in this report are not FTE weighted unless otherwise noted.

- **note** that the Panel has assigned a total of 136[2] funded quality categories
- **approve** the funded quality categories listed in the table below.

Funded quality categories for the subject area covered by the Panel are displayed in Table 1. All other evidence portfolios (EPs) assessed by the Panel were assigned an unfunded quality category, that is "R" or "R(NE)". In accordance with the reporting framework for the 2012 Quality Evaluation, the number of EPs assigned unfunded quality categories is not reported in this report.

Table 1: Final funded quality categories

Subject Area	A	B	C	C(NE)	Total
Māori Knowledge and Development	14	45	52	25	**136**

The Panel also recommends that the Board **consider** the following for future Quality Evaluations.

- Give a stronger message to tertiary education organisations (TEOs) about the need to provide assistance to staff members in preparation of their EPs. The Panel noted the absence of basic and essential information in a number of EPs received.
- Review the eligibility criteria for new and emerging researchers and the process to be followed to collect that information.
- Review the process for obtaining nominated research outputs (NROs) for panellists to review.
- Take further steps to clarify the requirements for the submission of NROs (such as patents) to ensure that these are accessible and reviewable by the peer-review panels.
- Revisit the requirements for cross-referral panels to provide contextual information around recommendations for preliminary scoring.
- Revise the PBRF 2012 Quality Evaluation Guidelines ("the Guidelines") to include more specific guidance on assessing EPs covering disparate disciplines.

Purpose of this Report

This report provides information on the deliberations of the Panel in its meeting from 3 to 5 December 2012. The report also sets out the Panel's recommendations to the Board.

[2] Numbers and percentages provided in this report are not FTE weighted unless otherwise noted. See the *Evaluating Research Excellence – the 2012 Assessment Interim Report* for more information.

Key Observations

The Panel

The Panel had particular regard to Māori research and generally characterised that research as follows:

- Māori research is a broad descriptor that includes various Māori approaches to research such as kaupapa Māori research, Māori-centred research, or mātauranga Māori research
- research is based on Māori world-views (Māori ways of being, knowing and doing)
- research practices and processes are consistent with Māori ethical standards
- methods, analysis and measurements recognise Māori philosophy and experience
- the potential outcomes of research contribute to Māori knowledge and development.

Review of NROs

The Panel set a goal of reviewing and accessing 100% of all NROs. The Panel was able to review 91% of the NROs submitted as part of EPs. The majority of NROs were accessed electronically.

The Panel noted that the process for supplying NROs was smooth and efficient, however, the automation of the mechanism by which Panel Members confirmed the sighting of EPs would have been desirable.

Assessing contribution in multi-authored publications

An important part of the review process was the assessment of the contribution of an individual to a multi-authored publication.

The question was raised as to how collaborative work could be recognised as part of the assessment process. It was noted that it not only makes sense in a Māori context, but could go towards recognition of multi-authorship, group or collaborative work, which is common across a range disciplines. This would also be relevant to other panels.

While some information was available regarding multi-authors within individual research outputs, it was noted that the commentary was often quite subjective. The order of authors was deemed to be important in the assessment and first-author or last (senior) author status was taken into account.

Preparation of EPs

TEOs and their staff members need to take more care in the preparation of EPs so that no information is omitted that might assist panellists in carrying out their assessment.

Panellists are required to assess EPs based only on their content. In many cases, the NRO commentaries could have been better written as they sometimes omitted information specifically requested in the panel-specific guidelines, such as:

- why the NRO was chosen as one of the best (up to) four research outputs
- how it meets the definition of research
- what form of quality assurance was undertaken in producing the research output.

New and emerging researchers

In a number of cases, there were EPs that appeared to be new and emerging researchers, but were not reported as such by the TEO. As a result, in these cases the Panel was unable to assign the "C(NE)" quality category and the EP was not able to be assigned a funded quality category.

The Panel was concerned that TEOs and staff may not have fully appreciated the implications of not being reported as a new and emerging researcher.

Furthermore, it appeared that some staff who met the eligibility criteria for new and emerging researchers set out in the Guidelines had a record of previous research experience.

As TEOs are responsible for the submission of the relevant census data, the Panel recommends that more care should be taken in this area and that the TEC should continue to provide more support to TEOs.

Cross-referrals

The Panel assessed 117 EPs cross-referred from other Panels. This number is significant as it represents approximately 47% of the total assessable EPs for this Panel.

The multi-disciplinary mandate of the Panel meant that the Panel received a broad range of subject and research fields to assess. With this in mind, the Panel felt that it would have been beneficial to have further contextual information accompanying the scoring that was provided by some of the cross-referral panels. For the next Quality Evaluation, the Panel recommends the inclusion of further guidance on the assessment of such EPs.

Input from Specialist Advisers

Specialist Advisers were used to supplement the relevant subject-area expertise within the Panel. Also, Specialist Advisers were used where conflicts of interest prevented Panel Members from participating in the assessment of an EP.

Three EPs were referred to Specialist Advisers. Advice provided by Specialist Advisers was considered and factored into the preliminary scores.

The Panel provided positive feedback on the role of Specialist Advisers. For the Panel, this advice was especially useful as many assessors were asked to look at a broad variety of topics and research areas.

Canterbury earthquakes – special circumstances

Thirteen EPs claimed the Canterbury earthquakes special circumstances. The Panel ensured that EPs with the alternative assessment period of 1 January 2005 to 31 December 2010 did not receive additional consideration for these special circumstances. The Panel did take care to take account of any other special circumstances claimed as part of these EPs.

The Panel felt some EPs had understated the impact of the earthquakes, or had made rather general statements about how research outputs might have been affected.

Other special circumstances

The Panel applied special circumstances in accordance with the processes set out in the Guidelines.

Expert Advisory Groups (EAGs)

The advice provided by the Professional and Applied EAG and Pacific Research EAG was considered and factored into the arrival at the preliminary scores.

Panel Process

Membership and process

The 10-member Panel included:

- Chair: Professor Chris Cunningham
- Deputy Chair: Dr Shane Edwards
- Dr Aroha Harris
- Professor Ross Hemera
- Professor Brendan Hokowhitu
- Professor Roger Maaka
- Professor Angus Macfarlane
- Professor Walter Penetito
- Dr Poia Rewi
- Professor Khyla Russell

Five Panel Members were new to the Quality Evaluation process and five had served as panellists in 2006, with three having been part of the process since 2003.

The current Chair and Deputy Chair were newly appointed to their positions although each had been involved in the 2003 and 2006 Quality Evaluations.

Six of the members are based at New Zealand universities, two at polytechnics, one at a wānanga and one of the members is currently on sabbatical at an overseas university.

Each EP was assigned to two Panel Members who provided agreed preliminary component scoring prior to the meeting, taking into account cross-referral scores where appropriate.

In all cases, judgements by the Panel were based entirely on the evidence presented in the EPs, and any advice from cross-referrals, EAG assessors, and Specialist Advisers.

A unique aspect to the work of the Panel was the range of EPs assessed. Because of the multi-disciplinary mandate of the Panel, it was common for Panel Members to assess EPs which fell outside of their specialist areas. This made the dynamic between lead, second and other (for example, EAG Members or Specialist Advisers) assessors that much more important. The combination of this advice led to a comprehensive assessment of EPs.

The Panel met for three days between 3 and 5 December 2012. All 10 Panel Members were present, and were involved throughout the meeting. The Panel felt that the meeting was particularly important so that cross-disciplinary relativities could be assessed.

The Guidelines provide for EPs submitted to the Panel to be assigned funding weightings that reflect the cost category of the underlying subject, as determined by the Moderators on advice from the Panel.

The Chair of the Panel formed a sub-group of Panel Members to review the EPs referred to the Panel taking care to ensure an appropriate degree of disciplinary coverage and that conflicts were managed. The sub-group considered recommendations from the TEC Secretariat and these informed the decisions made by the sub-group. The Moderators received and agreed the recommendations of the Panel.

The Panel referred to both the panel-specific guidelines and the Guidelines in their assessments.

EP assessments

On average, each Panel Member was involved in the preliminary assessment of 15 EPs.

The Panel assessed 117 EPs as cross-referrals.[3] Of these, approximately 45% of EPs referred to the Panel were from the Education and Creative and Performing Arts panels.

[3] The Panel Chair declined requests for cross-referrals where the expertise required for assessing an EP was not available on the Panel.

Table 2: Cross-referred EPs assigned to and assessed by the Panel

Primary Panel	Subject Area	Number of EPs
Biological Sciences	Agriculture and Other Applied Biological Sciences	2
	Ecology, Evolution and Behaviour	4
	Molecular, Cellular and Whole Organism Biology	2
Business and Economics	Accounting and Finance	2
	Economics	1
	Management, Human Resources, Industrial Relations and Other Businesses	3
	Marketing and Tourism	1
Creative and Performing Arts	Design	2
	Music, Literary Arts and Other Arts	3
	Theatre and Dance, Film, Television and Multimedia	2
	Visual Arts and Crafts	13
Education	Education	32
Engineering Technology and Architecture	Architecture, Design, Planning, Surveying	1
Health	Nursing	1
	Other Health Studies (including Rehabilitation Therapies)	1
Humanities and Law	English Language and Literature	1
	Foreign Languages and Linguistics	2
	History, History of Art, Classics and Curatorial Studies	4
	Law	10
	Philosophy	1
Mathematical and Information Sciences and Technology	Computer Science, Information Technology, Information Sciences	1
Medicine and Public Health	Clinical Medicine	1
	Public Health	7
Social Sciences and Other Cultural/Social Sciences	Anthropology and Archaeology	3
	Communications, Journalism and Media Studies	1
	Human Geography	1
	Political Science, International Relations and Public Policy	2
	Psychology	8
	Sociology, Social Policy, Social Work, Criminology and Gender Studies	5
	Total	**117**

Fifty-four EPs nominated by TEOs for assessment by the Panel were cross-referred to other panels for assessment.

Table 3: EPs cross-referred to and assessed by other panels

Primary Panel	Number of EPs
Biological Sciences	1
Business and Economics	2
Creative and Performing Arts	11
Education	15
Engineering, Technology and Architecture	2
Health	1
Humanities and Law	5
Medicine and Public Health	3
Social Sciences and Other Cultural/ Social Studies	14
Total	**54**

Referral of EPs

The primary reasons for cross-referring EPs to other panels were:

- when a TEO submitting the EP requested a cross-referral to another panel
- when a significant proportion (but not a majority) of the research output component of an EP fell within the subject area that was covered by another panel
- when additional expertise was required to fairly assess an EP.

In the Panel, EPs were referred to Specialist Advisers where it found that the cross-referral panel lacked the relevant expertise required to assess the EP.

EPs would also be referred to Specialist Advisers because of conflicts of interest within the Panel.

Conflicts of interest

Overall, the Panel managed conflicts of interest well and conservatively, with early declarations, the Chair and Secretariat notified, and EPs assigned and/or reassigned accordingly.

Panel Members were able, at any point in the assessment process, to declare potential conflicts of interest in relation to any EP that was assigned to the Panel.

Such conflicts guided the Secretariat and Panel Chair in ensuring that, for pre-meeting assessment, no Panel Member was assigned an EP against which they had declared a conflict of interest.

Where an EP was assigned to a conflicted Panel Member in error, the EP was reassigned to someone else and the Panel Member concerned did not contribute to the assessment of that EP.

The guidance regarding conflicts of interest, as agreed by the Moderation Panel, was discussed at the beginning of the meeting.

Those members who had recorded a conflict of interest, or who decided during the meeting that they had a potential conflict of interest, absented themselves from the room for the discussion on such EPs during the calibration of component scores.

When the Panel Chair had a conflict of interest, the Deputy Chair led the meeting.

The EPs of seven Panel Members were considered by the Panel. When their EP was being considered the Panel Member was excused from the Panel meeting and played no role in the assessment.

All Panel Members were present during the holistic phase of assessment, however, care was taken to ensure those Panel Members with a conflict of interest did not comment at this stage. Panel Members did not participate in holistic discussion of any EPs from their own TEO.

Conflicts of interest were handled appropriately. There were, however, two issues that the Panel noted should be considered in the next Quality Evaluation.

- Issue 1: In a small number of cases, four Panel Members were unable to participate in the assessment of a number of EPs. The reason for this was kept confidential in line with an agreement made by the TEC and agreed by the Moderators. Considerable care was taken by the Panel with the assessment of these EPs and a Moderator was in attendance while the remaining Panel Members discussed the EPs in question. The remaining Panel Members were able to assess and score these EPs in a manner entirely consistent with the other assessments made by the Panel. The Panel considers that should such a circumstance arise in the future, it may be preferable for alternative assessment arrangements to be made.

- Issue 2: There were instances where cross-referred EPs needed to be reassigned multiple times due to conflicts of interest. While the use of Specialist Advisers, EAGs, and cross-referrals mitigated this issue, the fact remains that the pool of Māori researchers (regardless of panel, subject or discipline) is still small enough for there to be potential conflicts of interest. Some consideration may need to be given to refining the Guidelines governing the management of conflicts of interest to take account of this.

The Panel noted that the early discussions between chairs of panels to resolve such issues were productive and vital to the success of the process.

Calibration of Panel judgements

The Panel achieved effective calibration through following the Guidelines and receiving feedback and guidance from the Moderation Panel.

Preliminary scoring involved Panel Members being paired to assess EPs. This included reaching a preparatory score individually, before discussing each EP with the second Panel Member to determine a preliminary (or agreed) score for each of the three components of the EP (research output, peer esteem, and contribution to the research environment).

At the Panel meeting, the Chair and Secretariat presented the Panel with themes from the first Moderation Panel meeting.

The Moderation Panel had the following requests for the Panel at the commencement of the meeting:

- to note the decrease in the average quality score for the subject and Panel
- to note the relatively high proportion of outstanding preliminary component scores
- to note the relatively high increase in percentage terms of "C" and "C(NE)" quality categories assigned
- to note the modest variations in the preliminary weighted scores assigned to EPs by subject area when comparing lead Panel Members
- the tendency for EPs claiming other special circumstances to be scored lower than the average for all panels for some types of special circumstance (noting the small numbers of EPs in question).

Following this presentation, the Panel undertook a calibration exercise. The Panel viewed and discussed examples of EPs that received preliminary weighted scores in the mid-range of the "A", "B", "C", "C(NE)" and "R" quality categories. These EPs were used at the start of the meeting to provide a benchmark in each quality category along with tie-point descriptors for each of the three components (research output, peer esteem and contribution to the research environment).

Having established these benchmarks, the Panel proceeded to review each EP.

The relevant EP was presented by the lead Panel Member. Discussion occurred where there were concerns or disagreements about the preliminary component scores assigned to the EPs. In line with themes communicated by the Moderation Panel, the component scores were then calibrated by the Panel as necessary to ensure consistency in scoring across the Panel. The Panel reviewed through each EP in turn.

During the calibration phase, a number of EPs were identified that required further assessment. These were also reviewed before any holistic assessments of EPs commenced.

Overall, the Panel noted that the PBRF IT system was helpful in ensuring an efficient process.

Holistic assessment

After completion of calibrated panel component scores, the Panel addressed the process of holistic assessment. The Panel determined that five EPs warranted further discussion in the holistic assessment phase. Changes were made to the Quality Categories of four EPs.

For other EPs, the Panel opted to incorporate holistic judgements as they assigned calibrated panel component scores. This involved the Panel making holistic judgements about the quality category that each particular EP would be assigned. Where adjustments were considered, component scores were normally revisited and adjusted as appropriate.

Following the completion of this phase, the Moderators invited the Panel to reflect on the distribution of quality categories assigned in light of the relatively high number of "A" quality categories assigned.

The Panel elected to review those EPs assigned an "A" quality category to ensure that they had calibrated assessment standards appropriately. This task was performed with a Moderator in attendance and no quality categories were changed as a result.

Final quality category

In accordance with the process set out in the Guidelines, final quality categories were assigned for each EP submitted to the Panel. These were confirmed through the PBRF IT system by the Secretariat.

Panel Commentary

Relative strength of New Zealand research

Panel Members were impressed by the high standard of published output in each of the disciplines covered in this Panel and the generally well-presented EPs.

Māori research

The relatively high number of cross-referrals to and from other panels shows the extent to which Māori research continues to work in cross-cultural and cross-disciplinary contexts.

As in 2003 and 2006, any conclusions relating to the 2012 Quality Evaluation do not take into account those EPs that Māori staff may have chosen to submit to other panels.

Pacific research

One EP was referred to the Pacific Research EAG.

Professional and applied research

Five EPs were referred to the PAR EAG. Scores were assigned to two of these EPs by the EAG. Three were declined because they fell outside PAR EAG's criteria.

General feedback

- The Panel was strong in its praise of the Secretariat for his support of the Panel and Panel Members. The early appointment of the Secretariat coupled with the experience of TEC staff was greatly appreciated by the Chair and Panel. Their involvement in supporting the Panel at all stages of the assessment process was seen as vital.

- The Panel was pleased in the way in which te reo Māori was easily integrated into the Quality Evaluation processes and systems, and noted a strong improvement over earlier rounds.

- The Panel suggests that the TEC provide a stronger message to TEOs about the need to provide assistance to staff members in preparation of their EPs. The Panel noted the absence of some basic and essential information in a number of EPs received for assessment.

- The TEC should review the eligibility criteria for new and emerging researchers and the process to be followed to collect that information.

- The TEC should take further steps to clarify the requirements for the submission of NROs (such as patents) to ensure that these are accessible and reviewable by the peer-review panels for the next Quality Evaluation.

- The TEC should improve the guidance for cross-referral panellists/assessors to provide contextual information around recommendations for preliminary scoring.

- The TEC should revise the Guidelines to include more specific guidance on calibrating EPs across disparate disciplines.

- The Panel recommend adding a function to the PBRF IT system that would prompt the assessor to click “Record as Accessed” once the NRO link was clicked. This would solve the problem of panellists having to go back into NROs to carry out this action.

- The PBRF IT system greatly enhanced the calibration. The responsiveness of the technology added to the efficiency of the process.

- The Panel Chair was confident that the Panel applied a very robust process in assessment and the scores are defensible, particularly at the margins.

- Overall, although the average quality score (AQS) remains at the low end of all the panels, there was an increase in the AQS for the EPs assigned to the Panel between 2006 and 2012.

- Also, there was an increase in the proportion of EPs assigned an “A” or “B” quality category from 34% to 43%. The Panel believes this shift fairly reflected the quality of EPs submitted to the Panel.

- The Panel noted that in the 2006 Quality Evaluation, that there had been a clear migration of EPs away from the Panel, when compared with 2003.

- Since 2006, measures such as comparable funding for the Panel were addressed. The Panel, however, raised concerns that the message had yet to get through to some TEOs and that submission to the Panel appeared unevenly distributed by TEO.

- With the growth and development of Māori research over the period, the expectation was that there would have been more submitted to the Panel. This raises the following questions: Where have these EPs gone and why? What guidance can be provided to the sector, to encourage the submitting of these EPs to the Panel?

- The Panel noted that there may still be a perception that the Panel is a hard assessor.

Assessment processes

The following questions arose from the Panel meeting.

- Are there other ways of considering peer esteem? For example, what does peer esteem look like in a mātauranga Māori context?

- Can an invitation (for example, to be a keynote speaker) to an event that has yet to occur still be considered as peer esteem? During the Panel process, it was decided that this type of invitation would be recognised under peer esteem, but clearer guidance for the next Quality Evaluation would be helpful.

- In a Māori context, it would be useful to discuss what counts as a citation. For example, a haka performed on many occasions at various events (such as, “Kapa o Pango” the All Black haka). In a Māori context this could be considered a citation, but again, additional guidance would be helpful.

Performance-Based Research Fund
2012 Quality Evaluation

Mathematics and Information Sciences and Technology Panel
Panel Report

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Executive Summary

- This report summarises the results of the assessment undertaken by the Mathematics and Information Sciences and Technology Peer-Review Panel ("the Panel") during the Performance-Based Research Fund (PBRF) 2012 Quality Evaluation and confirmed at a meeting held in Auckland between 26 and 29 November 2012.

- The 18-member Panel assigned funded quality categories to 478[1] evidence portfolios (EPs). In accordance with the processes set out in the PBRF 2012 Quality Evaluation Guidelines ("the Guidelines"), the Panel assigned the following final funded quality categories:

Quality Category	EPs (numbers)	EPs (FTE weighted)
A	69	66.51
B	197	191.93
C	161	155.26
C(NE)	51	48.43
Total	478	462.13

Note: Full-time equivalent (FTE) weighted numbers have been included for informational purposes. In determining average quality scores and funding, the number of staff and evidence portfolios are both FTE weighted (see *Evaluating Research Excellence – the 2012 Assessment Interim Report* for more information).

- The Panel managed conflicts of interest in accordance with the processes set out in the Guidelines.

- As part of its assessment of EPs, the Panel surpassed its goal of reviewing 50% of all nominated research outputs (NROs), with a final figure of 84.5% of all NROs recorded in the PBRF IT system as reviewed.

- The Panel noted a requirement for greater consistency and calibration across panels when Expert Advisory Groups (EAGs) were consulted, and/or other panels were cross-referred an EP.

- The Panel effectively achieved calibration of preliminary scores and incorporated holistic judgements into the assignment of final quality categories.

- The Panel noted excellent examples of world-class research being done in New Zealand are evident, building on the strong base that was confirmed during the 2006 Quality Evaluation. The number of "A"s awarded increased in all three subject areas assessed by the Panel in the 2012 Quality Evaluation compared to the 2006 Quality Evaluation.

- In this report, the Panel has raised several issues and suggestions for consideration by the Tertiary Education Commission's (TEC) Board of Commissioners ("the Board") for the next Quality Evaluation.

[1] Numbers and percentages provided in this report are not FTE weighted unless otherwise noted.

Recommendations

It is recommended that the Tertiary Education Commission's (TEC) Board of Commissioners ("the Board"):

- **note** the process the Mathematics and Information Sciences and Technology Peer-Review Panel ("the Panel") followed as part of the Performance-Based Research Fund (PBRF) 2012 Quality Evaluation as outlined in this report
- **note** that the Panel has assigned a total of 478[2] funded quality categories
- **approve** the funded quality categories listed in the table below.

A total of 478 EPs received funded quality categories. Funded quality categories in each of the subject areas are displayed in Table 1. All other evidence portfolios (EPs) assessed by the Panel were assigned an unfunded quality category, that is "R" or "R(NE)". In accordance with the reporting framework for the 2012 Quality Evaluation, the number of EPs assigned unfunded quality categories is not reported in this report.

Table 1: Final funded quality categories by subject area

Subject Area	A	B	C	C(NE)	Total
Computer Science, Information Technology, Information Sciences	24	115	108	31	278
Pure and Applied Mathematics	32	53	30	9	124
Statistics	13	29	23	11	76
Total	**69**	**197**	**161**	**51**	**478**

The Panel also recommends that the TEC **consider** the following.

- Provide clear guidance to appear along with the published final results, to ensure results are clearly understood and not misinterpreted in regard to calculation changes from 2006 to 2012.
- Review the composition of the Panel, with particular reference to the need for educational-based assessors in this and other panels. Alternatively, greater focus must be given to the significant number of researchers whose outputs fall between the Panel, for example, and the Education Panel.
- Combine the peer esteem and contribution to the research environment components or reduce entries to a maximum of 15, thereby reducing the

[2] Numbers and percentages provided in this report are not FTE weighted unless otherwise noted. See the *Evaluating Research Excellence – the 2012 Assessment Interim Report* for more information.

volume of information requiring assessment. If this is unacceptable, then greater clarity is necessary in regard to the placement of indicators (types) of peer esteem and contribution to the research environment.

- Review the impact of the Professional and Applied Research Expert Advisory Group (PAR EAG), in particular the effectiveness and usefulness of the assessments provided, including comments and the relationship to panel scoring.

- Consider the advantages of providing feedback to cross-referral assessors, as to the final quality category of those EPs they assessed.

- Whilst the PBRF IT system provided a reliable and effective system to conduct the quality assessment, an end-user work group should be considered to develop and enhance the system (including processes) for the next Quality Evaluation. Enhancements might include:

    - consistent and logical EP/NRO identification formats

    - always-visible search by EP identifier and name

    - support for multi-window or multi-pane operations

    - ability for users to set persistent preferences including: choice and ordering of columns, page length, row ordering, and initial tab.

- Revise the PBRF 2012 Quality Evaluation Guidelines ("the Guidelines") to include more specific guidance and examples to assist the assessment of EPs with special circumstances.

- Develop a number of short statements outlining subject/discipline norms to further enhance the panel-specific guidelines. This would better equip future assessors, in particular those from other subject areas. It is suggested this work could be undertaken by academic groups.

- Undertake a review of the overall Quality Evaluation, especially in the context of value for money and the overall resources required to support the assessment processes including those met by the participating tertiary education organisations (TEOs).

Purpose of this Report

This report provides information on the deliberations of the Panel at its meeting between 26 and 29 November 2012. It also sets out the Panel's recommendations to the Board.

Key Observations

Review of NROs

The PBRF IT system allowed almost all NROs to be accessed by the Panel without the provision of physical documents. The Panel highlighted the following points.

- The vast improvement in the process for accessing NRO evidence compared with the 2006 Quality Evaluation.
- Panel Members endeavoured to examine as many of the NROs as possible, with a final total of 84.5% NROs recorded in the PBRF IT system as reviewed. This easily surpassed the Panel's original goal of reviewing 50% of all NROs.
- The need for more stringent requirements to be placed on NRO evidence provided electronically, specifically with regards to the type of document uploaded, external website links, and the need for a consistent naming/reference system for each NRO. The use of stable formats such as PDFs that can be handled by freely available software on all standard computer systems should be encouraged.

New and emerging researchers

The Panel noted the effectiveness of the Guidelines in providing guidance on assessing new and emerging researchers.

Cross-referrals and EAGs

The Panel welcomed the greater detail within the Guidelines, noting that there is a need for greater consistency and calibration across panels and EAGs.

Advice and recommended scores from the various forms of cross-referrals were used and factored into the preliminary scores where practicable, but there were cases where there were clear disparities between scores given by the cross-referral assessors and the Panel.

In several instances, the Panel felt that it would have been beneficial to have further contextual information around the scoring that was provided by cross-referral panels and EAG assessors, particularly when scores were given with no supporting text or when a single (holistic) overall score was assigned by the other panel. Accordingly, the Panel recommends that for any future Quality Evaluation the provision of contextual information be made mandatory for panel cross-referral and EAG assessments. This will ensure greater context is available to the primary panel, especially when the cross-referral panel and EAG scores differ.

Concerns were raised regarding the consistency in approach from EAG assessors. Panel Members, in many cases, were unclear if the EAG assessor had assessed the NROs only or the full EP. Greater consistency and calibration between EAG members would have enhanced the value of their assessments. Only a small number of EPs assigned to the Panel were referred to the EAGs. As a result, the Panel had insufficient data to determine the value of the various EAG assessments in a systematic manner.

Input from Specialist Advisers

The Panel welcomed the advice provided by Specialist Advisers, with recommendations being made use of in determining the preliminary and calibrated Panel scoring, specifically when there was difficulty reaching Panel consensus, and when the EP was centred in an area of research that the Panel Members had less familiarity with, such as education.

Canterbury earthquakes and other special circumstances

The Panel applied the principles and rules outlined within the Guidelines to their best knowledge and in a consistent manner. The Panel also:

- identified difficulty in applying special circumstances (both “Canterbury earthquakes” and “Other”) to some EPs, primarily due to the various options available and the varying effects of each circumstance

- proposed that specific examples be developed from the 2012 Quality Evaluation to facilitate a consistent application across all panels in future Guidelines

- identified an issue where the system did not clearly distinguish particular special circumstances claimed, potentially leading to:

    - too much weight on the Canterbury special circumstances (in particular for those claiming the alternative assessment period)

    - new and emerging researchers also claiming a special circumstance as a result of their new and emerging status.

The Panel used the Guidelines to minimise any risks arising from the above issues occurring, and where necessary sought the advice of the Moderation Panel or TEC representatives.

Conflicts of interest

The Panel felt that they managed conflicts of interest effectively in line with the recommendations in the Guidelines. There were no issues raised with undeclared or unidentified conflicts of interest at the Panel meeting.

The Panel recommends system enhancements to further highlight significant conflicts of interest on the EP record.

Preparatory scoring

The Panel acknowledged there had been some data entry errors in the initial stage of the assessment, which in some cases led to preparatory scores being revised following preliminary discussion. These errors were corrected and did not impact assessment at the Panel meeting. As this is known to have also occurred across other panels, the Panel recommends that preparatory scoring be locked after entry.

Panel Process

Membership and process

The 18-member Panel included:

- Professor Vernon Squire (Chair)
- Professor Mark Apperley
- Professor Richard Barker
- Professor Michael Cowling
- Professor Gillian Heller
- Professor Don Kulasiri
- Professor Alistair Moffat
- Professor Eamonn O'Brien
- Professor Neil Trudinger
- Professor Robert McLachlan (Deputy Chair)
- Professor Adrian Baddeley
- Professor Andrew Cockburn
- Professor Kay Fielden
- Professor Sid Huff
- Professor Thomas Lumley
- Professor Michael Myers
- Professor Felix Tan
- Professor Matt Visser

The Panel demographics are summarised below:

- five (27.8%) were international representatives (all from Australia)
- 14 (77.8%) were first-time Panel Members
- only one Panel Member (Chair) has been involved since the 2003 PBRF Quality Evaluation.

The Panel followed the Guidelines in a consistent manner, with the following points noted.

- Each EP was assigned to two Panel Members who provided agreed preliminary component scoring prior to the meeting, engaging cross-referral, EAG assessment, or specialist advice where appropriate.
- The Panel met between 26 and 29 November 2012. Seventeen Panel Members were present and were involved throughout the meeting.
- One Panel Member was unable to attend the meeting due to circumstances outside of their control. The Panel Member participated in part of the meeting via teleconference to specifically discuss those EPs in which they acted as the lead assessor.
- In all cases, judgements by the Panel were based entirely on the evidence presented in the EPs, any cross-referral guidance from the other panels and EAGs, and any specialist advice.

Panel interactions

On average each Panel Member was involved in the preliminary assessment of 53 EPs (as either lead or second assessor) before meeting to discuss each as a Panel. In nearly all cases, at least the lead assessor was very familiar with the area of research in the EP being assessed.

There were no EPs nominated by TEOs for assessment by the Panel that required transfer to or from other panels for assessment. This indicates that the Guidelines were effective in ensuring EPs were designated to the most suitable panel and subject area.

Forty-eight EPs were cross-referred to other panels for additional assessment advice. Details are set out in Table 2 below.

Table 2: EPs Cross-referred to and assessed by other panels

Subject Area	**Cross-Referral Panel**	**Number of EPs**
Computer Science, Information Technology, Information Sciences	Biological Sciences	1
	Business and Economics	9
	Creative and Performing Arts	1
	Education	6
	Engineering Technology and Architecture	4
	Humanities and Law	2
	Māori Knowledge and Development	1
	Medicine and Public Health	1
	Physical Sciences	3
	Social Sciences and Other Cultural/Social Sciences	5
	Sub-total	33
Pure and Applied Mathematics	Business and Economics	1
	Engineering Technology and Architecture	1
	Humanities and Law	1
	Physical Sciences	4
	Sub-total	7
Statistics	Biological Sciences	4
	Medicine and Public Health	3
	Physical Sciences	1
	Sub-total	8
	Total	**48**

A further 24 EPs were assessed by Specialist Advisers and six EPs were assessed by the PAR EAG. Further detail can be found in Tables 3 and 4.

Table 3: EPs assessed by Specialist Advisers by subject area

Subject Area	**Number of EPs**
Computer Science, Information Technology, Information Sciences	12
Pure and Applied Mathematics	11
Statistics	1
Total	**24**

Table 4: EPs assessed by EAGs by subject area

Subject Area	**PAC EAG**	**COM EAG**	**ENV EAG**	**PP EAG**	**Number of EPs**
Computer Science, Information Technology, Information Sciences	–	1	–	2	3
Pure and Applied Mathematics	–	1	–	–	1
Statistics	–	–	1	1	2
Total	**–**	**2**	**1**	**3**	**6**

The Panel also received 50 cross-referrals from other panels.[3] The number of cross-referral assessments that the Panel provided to other panels can be seen in Table 5, broken down by subject area.

Table 5: Cross-referred EPs assigned to and assessed by the Panel

Primary Panel	Subject Area	Number of EPs
Biological Sciences	Ecology, Evolution and Behaviour	3
	Molecular, Cellular and Whole Organism Biology	2
Business and Economics	Accounting and Finance	1
	Economics	1
	Management, Human Resources, Industrial Relations	3
Creative and Performing Arts	Design	3
Education	Education	6
Engineering, Technology and Architecture	Engineering and Technology	12
Health	Sport and Exercise Science	1
Humanities and Law	Philosophy	2
Medicine and Public Health	Biomedical	4
	Public Health	5
Physical Sciences	Earth Sciences	4
	Physics	1
Social Sciences and Other Cultural/Social Sciences	Human Geography	1
	Psychology	1
	Total	**50**

Referral of EPs

The primary reasons for referral of EPs to other panels were:

- when a TEO submitting the EP requested a cross-referral to another panel
- when a significant proportion (but not a majority) of the research output component of an EP fell within the subject area that was covered by another panel
- when there was not enough expertise in the Panel to fairly assess an EP.

The primary reason for referral of EPs to Specialist Advisers was that the Panel or cross-referral panel required expertise in a particular specialist area within computer science, information technology and information sciences (for nine EPs) or pure and applied mathematics (for 11 EPs) to assess the EP.

[3] The Panel Chair declined requests for cross-referrals where the expertise required for assessing an EP was not available on the Panel.

The breakdown of how Specialist Advisers assisted in the assessment is summarised below.

- Nine Specialist Advisers were assigned to the Panel.
- Of those assigned, six undertook one or more assessments.
- Two additional Specialist Advisers (assigned by other panels) were also used to assess software engineering and design/creative technologies.

Conflicts of interest

The Panel, through a combination of approaches, managed conflicts of interest effectively.

- Panel Members were, at any point in the assessment process, able to declare potential conflicts of interest in relation to any EP that was assigned to the Panel. Such conflicts guided the Panel Chair and Secretariat in ensuring that, for pre-meeting assessment, no Panel Member was assigned an EP against which they had declared a significant conflict of interest.
- The guidance regarding conflicts of interest, as presented by the Moderation Panel, was discussed at the beginning of the meeting. Panel Members were asked to use due discretion along with the guidance provided, as to the action that should be taken with regards to conflicts of interest of varying degrees.
- Where conflict of interest declarations were tenuous, Panel Members were permitted to remain in the room and not participate in the discussion. Where the potential conflict was more substantive, Panel Members left the room for the duration of the discussion of the EP.
- The Chair, Deputy Chair and Secretariat continually monitored conflicts of interest declarations throughout the course of the meeting, both during calibrated Panel scoring and holistic assessment, to ensure Panel Members with conflicts of interest left the room when appropriate.
- Panel Members left the room when their own EP was being assessed.
- When the Chair was required to leave the room, the Deputy Chair led the discussion.

Calibration of Panel judgements

The Panel achieved effective calibration through application of the Guidelines.

Pre-Panel activities

- Preliminary scoring involved Panel Members being paired to assess EPs. This involved reaching a preparatory score individually, before discussing each EP with the second Panel Member to come to a preliminary (or agreed) score for each of the three components of research output, peer esteem, and contribution to the research environment. Panel Members commented how preliminary scores were normally reached with little difficulty.

- The Panel noted data entry errors in the initial stage of the assessment, which in some cases led to preparatory scores being revised following preliminary discussion (point noted in Key Issues). These errors we corrected and did not impact assessment at the Panel meeting.

Panel activities

- The Panel was presented with themes from the first Moderation Panel meeting which the Panel Chair had attended. It was observed that the Moderation Panel had no specific requests to the Panel.

- The Panel viewed and discussed examples of EPs that received preliminary weighted scores in the mid-range of the "A", "B", "C", "A"/"B" boundary and "B"/"C(NE)" boundary quality categories. These EPs were used at the start of the meeting to provide a benchmark in each quality category along with tie-point descriptors for each of the three components (research output, peer esteem, and contribution to the research environment).

- Having established benchmarks against which the substantive scoring calibration could be based, the relevant EP was then presented by the lead assessor with further comment provided where necessary by the secondary assessor. Discussion occurred where there were concerns or disagreements about the preliminary component scores assigned to the EP.

- In line with themes communicated by the Moderation Panel, the component scores were then calibrated by the Panel as necessary, to ensure consistency in scoring across all Panel Members.

- The Panel moved through the EPs from lowest preliminary score to highest, with no subject area clustering deemed necessary. This ensured the full Panel remained involved in discussion (with discussion moving from one subject to another regularly) and enabled a more enhanced Panel calibration. Panel Member EPs were discussed last, following holistic assessment of all other EPs.

- All EPs assessed by the Panel were discussed; particular attention was paid to those EPs with preliminary scores close to a boundary between the quality categories.

- No specific Moderation Panel requests were made during the calibration process, although further guidance was provided to ensure only appropriate EPs were identified for holistic consideration.

Holistic assessment

A total of 15 EPs were considered in the holistic phase of assessment. A different quality category was assigned to eight of these EPs.

These holistic assessment changes followed Panel agreement that they had appropriately scored each of the calibrated component scores, but felt that the final quality category determined by the product of these scores did not truly reflect the summation of the evidence presented in the EP.

Final quality category

In accordance with the process set out in the Guidelines, final quality categories were assigned for each EP submitted to the Panel. There were no further changes to those noted in the holistic assessment above.

Panel Commentary

Relative strength of New Zealand research

The three fields covered by the Panel, namely, computer science, information technology and information sciences; pure and applied mathematics; and statistics, are quite disparate in terms of numbers of staff working in each area and consequently in regard to the numbers of EPs assessed. As indicated in Table 1, the largest (computer science, information technology and information sciences) is about four times the size of the smallest (statistics) and is also much broader in terms of the coverage of material.

Across all three subject areas, there were excellent examples of world-class research being done in New Zealand. The number of “A”s awarded increased in all subject areas from the 2006 Quality Evaluation, although only moderately in computer science, information technology and information sciences, acknowledging that considerable investment had occurred following the 2006 Quality Evaluation which would have injected a cohort of early career staff into the community but have had less effect on the “A” or “B” quality categories. The results also confirm the impact of the higher expectations of researchers in New Zealand.

There are clear strengths evident in both pure mathematics and applied mathematics, where together 68.6% of those EPs assigned a funded quality category received either an “A” or “B” quality category (increasing from 49.6% in 2006). Pure mathematics EPs spanned many areas of contemporary pure mathematics and it was very clear that New Zealand has real strengths at a world-class level for many of the topics covered. Correspondingly, mathematics is now being applied across a wealth of different disciplines, such as physics and chemistry, geophysics, engineering, marine science and oceanography, and the biological and life sciences, to name a few. Standards are again world class and in several areas discipline-leading science is being done. Care is needed, however, to ensure that the world-class strengths of New Zealand pure and applied mathematics are not lost when the current “A”s and “B”s retire given their age profile, notwithstanding the comment below concerning new and emerging researchers.

There were also positive percentage increases in the number of “A” or “B” quality categories assigned in both statistics (55.3% from 48.8% in 2006) and computer science, information technology and information sciences (50.0% from 44.1%). New Zealand statisticians may be few in number but are involved in the creation of new theory and concepts, as well as successfully applying modern statistical methods across a wide variety of the physical, life and human sciences.

The 2012 Quality Evaluation results back up the findings of the 2006 Quality Evaluation in computer science, information technology and information sciences, with absolute scoring increasing. This is further evidence there is a strong core of world-class expertise in computer and information sciences in the country masked by a relatively long “tail” which has improved since 2006. There is a strong sense that the subject area is growing in quality, possibly in response to the introduction of the PBRF. A further complicating factor is that EPs in computer and information sciences came, in general, from a broader group of institutions than was the case with the other two subject areas.

One of the subject areas that posed issues for the Panel in 2012 was the assessment of EPs in statistics that included education-based research outputs. This was also seen to a more moderate extent in the other subject areas. While the Panel took considerable care to ensure that EPs were assessed consistently, EPs including research outputs that were centred in education, whether mathematically-, statistically-, or computer/information science-based, scored somewhat lower than those where the EPs were focused in other areas of the disciplines being assessed albeit with some notable exceptions.

The results also highlighted significant depth in new and emerging researchers in the mathematical and information sciences and technology field. Of the 51 new and emerging researchers assigned a quality funded category, 37.3% were assigned an “A” or “B” quality category.

Māori research

The Panel sought cross-referral advice from the Māori Knowledge and Development Panel for one EP. The cross-referral advice was of significant importance in determining the final score and grade for the EP.

The Panel did not receive any cross-referral requests from the Māori Knowledge and Development Panel.

Pacific research

The Panel sought advice from the Pacific Research EAG for one EP. The EP did not meet the EAG’s criteria and was not assessed.

Professional and applied research

The Panel welcomed the introduction of the PAR EAG. Assessment for six EPs benefited from the additional advice provided by PAR EAG assessors. The Panel considered that the assessments by the PAR EAG could have been better calibrated and would have benefited from the more consistent use of commentaries to support these scoring decisions.

2012 Performance-Based Research Fund Quality Evaluation

Medicine and Public Health Panel

Panel Report

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Executive Summary

- This report summarises the results of the assessment undertaken by the Medicine and Public Health Peer-Review Panel ("the Panel") during the Performance-Based Research Fund (PBRF) 2012 Quality Evaluation. These results were confirmed at a meeting held in Auckland between 26 and 29 November 2012.

- The Panel assigned funded quality categories to 846[1] evidence portfolios (EPs). In accordance with the processes set out in the PBRF 2012 Quality Evaluation Guidelines ("the Guidelines"), the Panel assigned the following final funded quality categories:

Quality Category	EPs (numbers)	EPs (FTE weighted)
A	128	118.20
B	324	283.14
C	229	182.13
C(NE)	165	138.89
Total	846	722.36

Note: Full-time equivalent (FTE) weighted numbers have been included for informational purposes. In determining average quality scores and funding, the number of staff and evidence portfolios are both FTE weighted (see *Evaluating Research Excellence – the 2012 Assessment Interim Report* for more information).

- The Panel managed conflicts of interest in accordance with the processes set out in the Guidelines.

- The Panel effectively achieved calibration of preliminary scores and incorporated holistic judgements into the assignment of final quality categories.

- The Panel has raised a number of suggestions for the Tertiary Education Commission's (TEC) Board of Commissioners ("the Board") to consider for future Quality Evaluations.

[1] Numbers and percentages provided in this report are not FTE weighted unless otherwise noted.

Recommendations

It is recommended that the Tertiary Education Commission's (TEC) Board of Commissioners ("the Board"):

- **note** the processes the Medicine and Public Health Panel ("the Panel") followed as part of the Performance-Based Research Fund (PBRF) 2012 Quality Evaluation that are outlined in this report
- **note** the Panel's suggestions for consideration listed in this report for incorporation in future Quality Evaluations
- **note** that the Panel has assigned a total of 846[2] funded quality categories
- **approve** the funded quality categories listed in the table below.

Funded quality categories in each of the subject areas are displayed in Table 1. All other evidence portfolios (EPs) assessed by the Panel were assigned an unfunded quality category, that is "R" or "R(NE)". In accordance with the reporting framework for the 2012 Quality Evaluation, the number of EPs assigned unfunded quality categories is not reported in this report.

Table 1: Final funded quality categories by subject area

Subject Area	A	B	C	C(NE)	Total
Biomedical	56	125	64	67	312
Clinical Medicine	43	102	86	25	256
Public Health	29	97	79	73	278
Total	**128**	**324**	**229**	**165**	**846**

Purpose of this Report

This report provides information on the Panel's decisions following a meeting held between 26 and 29 November 2012 as part of the 2012 Quality Evaluation. This report:

- outlines the distribution of final quality categories
- describes the processes used by the Panel to assess EPs submitted by tertiary education organisations (TEOs) on behalf of researchers
- provides and invites the Board to consider, a series of issues and recommendations for future Quality Evaluation rounds.

[2] Numbers and percentages provided in this report are not FTE weighted unless otherwise noted. See the *Evaluating Research Excellence – the 2012 Assessment Interim Report* for more information.

Key Observations

Overall, the Panel was confident that its part in the 2012 Quality Evaluation was a success. The Panel noted a number of minor issues with the processes followed and has provided recommendations to the Board for consideration for the next Quality Evaluation.

Improvements to the PBRF IT system

The Panel endorsed the transition to the online PBRF IT system for dissemination, assessment and recording of scores assigned to EPs. It was noted that the PBRF IT system worked very well and was a great improvement on the paper-based 2003 and 2006 Quality Evaluations. There were, however, some aspects of the PBRF IT system that could have been improved.

The Panel's recommendations for improvements to the PBRF IT system have been referred to the project manager for the 2012 Quality Evaluation for inclusion in the project closure report.

Assessment criteria and comments from Expert Advisory Groups (EAGs)

The Panel noted that additional supporting comments in some EAG assessments would have assisted Panel Members in interpreting the scores provided. In addition, the late provision of some EAG scores meant this advice was needed to be considered at Panel meetings rather than helping to determine preliminary scores. Panel-wide discussions at the Auckland meetings considered all EAG scores and advice in the context of Panel moderation and assigning calibrated quality categories. These discussions also incorporated Panel-wide experience and expertise in EP assessment.

The Panel recommends that in any future Quality Evaluation, the TEC mandate specific commentary for inclusion with EAG assessments that substantiate scores provided. Further, the Panel recommends that EAG assessors ensure that the specific aspects of EPs relevant to their assessments are included in their comments. The Panel also recommends that the TEC consider more closely aligning EAGs' assessment criteria with the main panels' criteria so the scores are more directly comparable.[3]

Guidance related to cross-referral of EPs

The Panel recommends that, in initiating a cross-referral, a primary panel should be required to specify the feedback sought, such as a particular focus on a research area (research output, peer esteem and contribution to research environment).

Panellists receiving a cross-referral should also be required to provide comments.

TEOs requested a number of cross-referrals to other panels that were declined by either the Panel Chair or the cross-referred panel chair, on grounds of inappropriateness in terms of balance of expertise across the panels. The criteria for such cross-referrals should be made more explicit.

[3] It is noted, however, that EAGs' assessment criteria are currently different to panels' assessment criteria to obtain a different perspective on certain aspects of the research outputs.

Steps to ensure greater cross-panel calibration

The Panel noted some differences when comparing the component scores assigned by cross-referral panel members against those assigned by Panel Members. These differences suggested that cross-referral advice could have been better calibrated against the assessment standards employed by the Panel.

The Panel recommends that TEC consider ways to improve cross-panel calibration in order to improve the usefulness of cross-referral advice.

New and emerging researcher status clarified by TEOs

The Panel noticed a number of EPs where a researcher appeared, from the information provided, to meet the eligibility criteria for new and emerging status despite this not being stated by that researcher's TEO. The Panel is concerned that some researchers may have been disadvantaged because their TEOs did not correctly identify them as new and emerging.

The Panel recommends that the TEC highlight to TEOs the importance of correctly identifying new and emerging researchers.

Suggestions for improved presentation of EP information

The Panel noted that the increased number of items available for peer esteem and contribution to the research environment, and the large number of characters available for each item did not necessarily assist Panel Members. Both these changes did mean more reading for panellists, making the process more time consuming.

The Panel recommends that TEOs be given more explicit instructions on how to display evidence (for example, the order of other research outputs (OROs) in terms of priority, grouping conference presentations together, grouping refereeing duties together, listing research grants together) as a greater degree of consistency would assist panellists in assessing EPs. The Panel also recommends that the TEC consider reducing the number of fields and/or characters available to use in parts of EPs.

Guidance related to special circumstances

In many cases, the Panel found that researchers did not describe in sufficient detail how the special circumstances claimed led to a diminished quantity of research outputs and, hence, whether higher special scores were appropriate.

The Panel recommends that, in future, the scope of special circumstances are more clearly defined, identifying the area(s) of research (research output, peer esteem, or contribution to research environment) affected by the special circumstances. By reducing the reliance on narrative, special circumstances may become more specific, and may be more clearly targeted and linked to research production.

More guidance concerning holistic assessments

The Panel worked in accordance with the requirements outlined within the Guidelines, although the Panel noted that the quality category descriptors were more general in nature than the tie-point descriptors used to guide the assignment of component scores. As a result, the Panel took care to apply a consistent standard when considering whether to make changes to the calibrated panel quality category.

The Panel recommends that the TEC consider ways to give panels more detailed and explicit advice for changing quality categories as a result of holistic assessment for the next Quality Evaluation.

Panel Process

Membership and process

There were 24 Panel Members as listed below in Table 2.

Table 2: Panel Members

Panel Members	Participated in 2006 Quality Evaluation	International
Chair: Professor Ian Reid	✓	
Deputy Chair: Professor Mark Richards	✓	✓
Professor Max Abbott	✓	
Professor Shanthi Ameratunga		
Professor Alan Barber		
Associate Professor Jacqueline Cumming	✓	
Professor Brett Delahunt		
Professor Jeroen Douwes		
Professor Anthony Dowell		
Professor Peter Ellis	✓	
Professor Cynthia Farquhar	✓	
Professor Alistair Gunn		
Professor Andrew Hill		
Professor Phillip Hill		
Professor Vivian Lin	✓	✓
Professor Jim Mann	✓	
Professor Murray Mitchell	✓	✓
Professor David Murdoch		
Professor Stephen Robertson		
Professor Martin Tattersall	✓	✓
Professor Peter Thorne		
Professor Robert Walker	✓	
Professor Alistair Woodward		
Associate Professor Alistair Young		

The processes followed by the Panel for assigning and assessing EPs, and awarding preparatory and preliminary scores to EPs, are outlined below.

- The Panel was established with the purpose of assessing the quality of EPs prepared by researchers employed by New Zealand TEOs. The Panel's membership was comprised of New Zealand-based and international experts in the following three subject areas:

    - biomedical
    - clinical medicine
    - public health.

- In June 2012, Panel Members were invited to Auckland to undertake a range of training and calibration activities over two days.
- In late July/early August 2012, the Panel Chair assigned EPs to Panel pairs via the PBRF IT system. Panel Members were then tasked with individually determining preparatory scores for each EP.
- Once preparatory scores had been assigned, and after any cross-referred advice from other panels or advice from EAG assessors was received, lead assessors assigned preliminary scores to EPs after discussing with the second assessors.
- The Panel met in Auckland between 26 and 29 November 2012 to discuss and agree on final quality categories for the EPs under consideration.
- One Panel Member was unable to attend the Panel meeting due to circumstances beyond their control. The absent Panel Member was available to provide advice on an as-and-when needed basis. Sufficient expertise existed on the Panel to provide an appropriate level of input on the EPs that the absent Panel Member was an assessor on.

Canterbury earthquakes – special circumstances

The Panel paid particular attention in reviewing and applying the Guidelines to EPs that claimed Canterbury earthquakes special circumstances. The Panel ensured that EPs with the alternative assessment period of 1 January 2005 to 31 December 2010 did not receive additional consideration for these special circumstances. The Panel did take care to take account of any other special circumstances claimed as part of these EPs.

Other special circumstances

The Panel applied special circumstances in accordance with the processes set out in the Guidelines.

Assignment of EPs to Panel Members

Each Panel Member was assigned around 80 EPs (each EP was assigned to a lead and second assessor) to assess on the basis of subject-area expertise plus steps taken to avoid actual or potential conflicts of interest.

The Panel also assessed 61 EPs cross-referred to it from other panels.[4]

[4] The Panel Chair declined requests for cross-referrals where the expertise required for assessing an EP was not available on the Panel.

Table 3: Number of EPs that were cross-referred to and assessed by the Panel

Primary Panel	Subject Area	Number of EPs
Biological Sciences	Ecology, Evolution and Behaviour	2
	Molecular, Cellular and Whole Organism Biology	16
Business and Economics	Economics	1
Creative and Performing Arts	Music, Literary Arts and Other Arts	1
Education	Education	2
Engineering Technology and Architecture	Engineering and Technology	8
Health	Other Health Studies (including Rehabilitation Therapies)	1
Humanities and Law	Law	2
Māori Knowledge and Development	Māori Knowledge and Development	3
Mathematical and Information Sciences and Technology	Computer Science, Information Technology, Information Sciences	1
	Statistics	3
Physical Sciences	Chemistry	3
	Physics	1
Social Sciences and Other Cultural/Social Sciences	Human Geography	3
	Psychology	13
	Sociology, Social Policy, Social Work, Criminology & Gender Studies	1
	Total	**61**

Cross-referral of EPs to other panels

Sixty-nine EPs assigned to the Panel were also cross-referred to one or more other panels due to these EPs containing content relevant to other subject areas. Where TEOs requested the cross-referral of an EP, the Panel's Chair considered the request on the basis of the content of the EP and the expertise on the Panel.

Table 4: Number of EPs submitted to the Panel that received cross-referral advice from other panels

Subject Area	Cross-Referral Panel	Number of EPs
Biomedical	Biological Sciences	11
	Education	1
	Engineering Technology and Architecture	5
	Health	5
	Humanities and Law	3
	Mathematical and Information Sciences and Technology	4
	Physical Sciences	4
	Social Sciences and Other Cultural/Social Sciences	1
	Sub-total	**34**
Clinical Medicine	Education	2
	Engineering Technology and Architecture	1
	Health	2
	Māori Knowledge and Development	1
	Social Sciences and Other Cultural/Social Sciences	1
	Sub-total	**7**
Public Health	Business and Economics	1
	Education	2
	Health	11
	Humanities and Law	1
	Māori Knowledge and Development	7
	Mathematical and Information Sciences and Technology	5
	Social Sciences and Other Cultural/Social Sciences	1
	Sub-total	**28**
	Total	**69**

Conflicts of interest

Panel Members were encouraged to declare any actual or potentially perceived conflicts of interest throughout the Quality Evaluation process. Panel Members were asked to declare conflicts of interest prior to being assigned EPs to assess and again during the Panel meeting. All actual or potentially perceived conflicts of interest were documented and recorded to ensure that they were managed in accordance with the Guidelines and panel procedures.

During the Panel's meeting, conflicts of interest were managed in the following ways:

- for discussion of the EPs of family members, personal friends, those in close relationships (personal and work related such as close colleagues and students working directly with the Panel Member), persons with whom the Panel Member was in dispute, or for the discussion of a Panel Member's own EP, the Panel Member was required to leave the room

- for discussion of EPs of staff members within the Panel Member's own department or academic unit (other than close colleagues or students working directly with the Panel Member), the Panel Member stayed in the room, but did not contribute to discussion on the portfolio

- where the Chair was conflicted, the Deputy Chair led this part of the meeting.

At no stage did any Panel Member participate in the assessment of the EP for which they had declared a conflict of interest.

Calibration of Panel judgements

The Panel placed considerable emphasis on achieving accurate intra-panel calibration of assessments during Panel training in May 2012. During the individual assessment phase, Panel Members were able to request calibration advice on an as-and-when needed basis. Effective calibration was also achieved by Panel pairs independently scoring and then assigning preparatory scores to EPs prior to the lead Panel Member assigning a preliminary score.

Prior to the Panel meeting, Panel Members were sent eight EPs to independently assess and assign scores in preparation for discussion during the Panel meeting. This allowed the Panel to check and ensure that all Panel Members were well calibrated prior to discussion. These eight EPs were chosen based on their preliminary scores so that two EPs were assessed from a range of quality categories.

As part of the panel meeting, all panel members had access to all EPs and the component scores assigned to these (except their own). This provided each Panel Member with an opportunity to participate in the assessment of each EP.

To enable more time for a detailed assessment of each EP than might otherwise have been the case given the constraints of time, the Chair assigned (with the agreement of the Moderators) EPs to groups of three or four Panel Members to review prior to the agreement of the final component scores and quality categories by the full Panel. Panel Members were asked to consider whether they agreed with the preliminary scores already assigned to EPs by the lead and second assessor. Where the weighted score for a particular EP was near to the boundary between quality categories (such as, a high "C" or low "B") received more detailed scrutiny.

While Panel Members could, at any stage, request a review of the component scores or quality categories assigned to each EP, at a minimum those identified as potentially eligible for a change as part of the review by each sub-group were all referred back to the full Panel for further discussion. The key information about these EPs was then displayed electronically on a screen at the front of the room. Panel-wide discussion then considered a range of matters before reaching a consensus on the score. Topics of discussion often included the results of pre-meeting assessment, the presence of any special circumstances and information included in NROs and OROs.

Holistic assessment

After completion of calibrated panel component scores, the Panel addressed the process of holistic assessment. The Panel was of the view that five EPs (less than 1% of the total) should have their quality categories holistically changed.

The most common reason for a holistic change in quality category was an increase (such as, a "C" to a "B" quality category) due to research outputs being particularly strong for a given grade (such as, a high four-out-of-seven) but low peer esteem or contribution to research environment scores keeping the calibrated score below a higher quality category. In a small number of cases special circumstances were a major consideration in a quality category increase.

"C(NE)" category

The Panel scored the "C(NE)" category in accordance with the Guidelines and panel-specific guidelines, The Panel sought evidence of at least a PhD or equivalent (biomedical and clinical medicine) or Masters in Public Health plus two quality assured research outputs in order to assign a "C(NE)" quality category.

Final quality category

In accordance with the process set out in the Guidelines, final quality categories were assigned to each EP submitted to the Panel. These were confirmed through the PBRF IT system by the Secretariat.

Panel Commentary

Comparison with previous Quality Evaluation rounds

The Panel went to considerable lengths to ensure that assessment standards had been applied consistently from previous Quality Evaluations.

Panel Members agreed that the overall quality and quantity of research within the disciplines covered by the Panel had increased materially, and care should be taken when interpreting the average quality scores assigned at the various levels of the reporting framework.

Relative strength of New Zealand research

For the 2012 Quality Evaluation, there continues to be a relatively high number of "A"s achieved within the biomedical and clinical subject areas and it is considered that in these subject areas New Zealand has considerable strength.

Māori research

The Panel referred a number of EPs to panellists with expertise in Māori research methodologies plus cross-referred eight EPs to the Māori Knowledge and Development Panel. With the expertise available on the Panel and the advice received from the Māori Knowledge and Development Panel, the Panel considered that they were able to accurately assess these EPs.

Pacific research

The Panel received 19 EPs that were referred to the Pacific Research EAG. With a few exceptions, the Panel generally found that this advice from the Pacific Research EAG was very helpful in determining the quality categories for these EPs.

Professional and applied research

The Professional and Applied Research EAG provided assessment on 29 EPs for the Panel.

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Panel Report

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Executive Summary

- This report summarises the results of the assessment undertaken by the Physical Sciences Peer-Review Panel ("the Panel") during the Performance-Based Research Fund (PBRF) 2012 Quality Evaluation and confirmed at a meeting held in Auckland between 5 and 7 December 2012.

- The 15-member Panel assigned funded quality categories to 452[1] evidence portfolios (EPs). In accordance with the processes set out in the PBRF 2012 Quality Evaluation Guidelines ("the Guidelines"), the Panel assigned the following final funded quality categories:

Quality Category	EPs (numbers)	EPs (FTE weighted)
A	79	72.47
B	199	185.47
C	97	93.31
C(NE)	77	74.91
Total	452	426.16

Note: Full-time equivalent (FTE) weighted numbers have been included for informational purposes. In determining average quality scores and funding, the number of staff and evidence portfolios are both FTE weighted (see *Evaluating Research Excellence – the 2012 Assessment Interim Report* for more information).

- Intra-panel calibration was achieved through a calibration exercise which involved each Panel Member scoring eight EPs prior to the Panel meeting, and then extensive discussion around these EPs at the start of day one of the Panel meeting. EPs which lay on the "A"/"B", "B"/"C" and "C"/"R" boundaries, and some from the earth sciences, were chosen for the calibration exercise, thereby taking into consideration feedback from the first Moderation Panel meeting.

- Even during the calibrated scoring process, the majority of the first day of the meeting was spent ensuring the Panel assessments were properly calibrated, with frequent reference to tie-point descriptors.

- The Panel carefully and consistently applied the conflict of interest guidance set out in the Guidelines and in accordance with advice provided by the Moderation Panel. During Panel discussions, Panel Members with a significant conflict (such as, collaborator, immediate staff member, and personally related) left the room. In cases of a minor conflict of interest, the Panel Member with a conflict took no part in the discussion.

- As a consequence of feedback from the first Moderation Panel meeting, particular attention was paid to scoring for the earth sciences. The result was a slight increase in EPs being assigned "A" and "B" quality categories.

- In this report, the Panel has raised several issues and suggestions for consideration by the Tertiary Education Commission's (TEC) Board of Commissioners ("the Board") for the next Quality Evaluation.

[1] Numbers and percentages provided in this report are not FTE weighted unless otherwise noted.

Recommendations

It is recommended that the Tertiary Education Commission's (TEC) Board of Commissioners ("the Board"):

- **note** the process the Physical Sciences Peer-Review Panel ("the Panel") followed as part of the Performance-Based Research Fund (PBRF) 2012 Quality Evaluation as outlined in this report
- **note** that the Panel has assigned a total of 452[2] funded quality categories
- **approve** the funded quality categories listed in the table below.

A total of 452 EPs assessed by the Panel were assigned funded quality categories. Funded quality categories in each of the subject areas are displayed in Table 1. All other evidence portfolios (EPs) assessed by the Panel were assigned an unfunded quality category, that is "R" or "R(NE)". In accordance with the reporting framework for the 2012 Quality Evaluation, the number of EPs assigned unfunded quality categories is not reported in this report.

Table 1: Final funded quality categories by subject area

Subject Area	A	B	C	C(NE)	Total
Chemistry	37	67	43	34	181
Earth Sciences	19	74	43	23	159
Physics	23	58	11	20	112
Total	**79**	**199**	**97**	**77**	**452**

The Panel also recommended that the Board **consider** the following for future Quality Evaluations.

- Revisit the requirements for cross-referral panels, and especially the Expert Advisory Groups (EAGs), to provide suitable comment with contextual information around recommendations for preliminary scoring.
- Consider incorporating the EAGs into the peer-review panels to ensure a coordinated discussion regarding the application and impact of research outside of the academic environment.
- Consider using the peer esteem and contribution to the research environment components in the EPs for the researcher to provide more specific and direct evidence of research application and impact which can then be used by the peer-review panel to assess against EAG criteria. This recommendation is made in the context that the EPs should not become any longer and, therefore, more onerous for the researchers and tertiary education organisations (TEOs) to complete.
- Revise the PBRF 2012 Quality Evaluation Guidelines ("the Guidelines") to include more specific guidance on assessing EPs within specific subject disciplines, with particular reference to more precise tie-point descriptors.

[2] Numbers and percentages provided in this report are not FTE weighted unless otherwise noted. See the *Evaluating Research Excellence – the 2012 Assessment Interim Report* for more information.

Purpose of this Report

This report provides information on the deliberations of Physical Sciences Panel in its meeting between 5 and 7 December 2012. It also sets out the Panel's recommendations to the Board.

Key Observations

Review of NROs

Prior to the preparatory scoring phase of the process, the Panel set a goal of reviewing 25% of all NROs. In practice the figure was nearer 75%.

This much larger percentage was facilitated in significant measure through the PBRF IT system which made possible immediate access to NRO details.

Inclusion of patents as NROs

The Panel noted that in the cases where a patent had been included in the NROs it may have done little to improve the scoring due to two main factors:

- a patent that had been applied for but not issued cannot be used as evidence of a research output

- where the inclusion of a patent had been made specifically for the Professional and Applied Research EAG (PAR EAG), this advisory group was unable to provide an accurate scoring of impact due to a lack of evidence in the EP apart from the patent itself.

The combination of these two factors did not result in a reduction in scores, but there is the possibility that scores could have been enhanced with more fulsome information available.

Assessing contribution in multi-authored publications

Whilst not a significant point of discussion throughout the meeting, the authorship of papers did arise on occasion. Different subject sectors have different approaches to the order of presentation of authors on a paper. These were discussed for each NRO where there was a question regarding the input to a paper from that researcher. On the whole, NROs indicated the percentage of contribution and this was taken as read.

Measures of significance for published papers

The Panel had considerable discussion on what measures should be used to assess the excellence of published papers that had been marked as quality assured. Whilst in many cases an obvious measure was the standing of the journal, it was pointed out that it is possible to have relatively low-quality research published in top journals on occasion. An alternative measure being used more frequently now in other countries is citations.

For this process a combination of both measures was employed according to the information presented in the EPs.

New and emerging researchers

There was little discussion regarding the new and emerging category as TEOs had indicated clearly the assignment of this label to researchers and the TEC had checked these. Whilst there was some discussion regarding the scoring of specific EPs, this was conducted in the same way as for other EPs and the Guidelines were adhered to.

Cross-referrals

In almost all instances, the Panel felt that it would have been beneficial to have further contextual information around the scoring that was provided by cross-referral panels. Recommended scores from cross-referral panel members were used and factored into the arrival at preliminary and calibrated scores. In some cases, however, where there were clear disparities between scores given by the cross-referral panel and the Panel, further comment on how the scores were arrived at would have been beneficial.

Input from Specialist Advisers

Input from only one Specialist Adviser in the earth sciences was sought. This was taken account of in the scoring.

Canterbury earthquakes – special circumstances

The Panel paid particular attention in reviewing and applying the Guidelines to EPs that claimed Canterbury earthquakes special circumstances. The Panel ensured that EPs with the alternative assessment period of 1 January 2005 to 31 December 2010 did not receive additional consideration for these special circumstances. The Panel did take care to take account of any other special circumstances claimed as part of these EPs.

The evidence provided was helpful and in every case was given due consideration in the assessment process.

Other special circumstances

The Panel applied special circumstances in accordance with the processes set out in the Guidelines.

EAGs

Three EPs were referred from the Panel to the Pacific Research EAG.

Referrals from the Panel to the PAR EAG are listed in Table 2.

Table 2: Referrals to the PAR EAG from the Panel by subject area

Subject Area	Commercial	Professional Practice	Environmental	Number of EPs
Chemistry	17	−	3	20
Earth Sciences	−	−	4	4
Physics	4	2	−	6
Total	21	2	7	30

The Panel recognises the value of accounting for non-academic impact of research as part of the Quality Evaluation process. There was a unanimous view across the Panel, however, that the EAG scores were often difficult to factor into the final scoring for several reasons:

- additional commentary would have assisted in the Panel's assimilation of EAG assessments, particularly, in explaining how they arrived at the single number score for the EP

- there could have been more evidence of application and impact provided by researchers in the EPs submitted on their behalf which would have made cross-checking a Panel view with an EAG score less problematic

- the score provided by the EAG assessor was a single figure for the whole EP indicating a level of research application and impact, and combining this with three scores from the Panel based on research quality sometimes presented issues due to the difference in the assessment criteria and standards applied.

Panel Process

Membership and process

The 15-member Panel included:

- Professor Keith Hunter (Panel Chair)
- Dr Kelvin Berryman (Deputy Chair)
- Professor Geoff Austin
- Professor Joel Baker
- Professor Martin Banwell
- Professor Sally Brooker
- Dr Ian Brown
- Professor James Coxon
- Professor Shane Cronin
- Professor Gerry Gilmore
- Professor Kuan Goh
- Professor James Metson
- Professor Jarg Pettinga
- Professor Moira Steyn-Ross
- Professor Nigel Tapper

Each EP was assigned to two Panel Members who provided agreed preliminary component scoring prior to the meeting, involving cross-referral, EAG, and Specialist Adviser advice where appropriate.

The Panel met from 5 to 7 December 2012. All 15 Panel Members were present, and were involved throughout the meeting (noting actions taken when conflicts arose).

In all cases, judgements by the Panel were based entirely on the evidence presented in the EPs, any cross-referral advice received from the other panels and the EAGs, and any specialist advice.

During the Panel meeting, EP details were displayed on one screen and the relevant EP scores on a second screen. The whole Panel took part in the discussion of each

EP (except where conflicts of interest dictated otherwise). Every Panel Member had the opportunity to raise issues in relation to any EP and in such cases there was considerable Panel discussion to reach an agreed scoring.

Panel transactions

On average, each Panel Member was involved in the preliminary assessment of 62 EPs before meeting to discuss each as a Panel.

Thirty-three EPs were cross-referred and assessed by other panels, as set out in Table 3 below.

Table 3: EPs cross-referred and assessed by other panels

Subject Area	Cross-Referral Panel	Number of EPs
Chemistry	Biological Sciences	8
	Engineering Technology and Architecture	7
	Medicine and Public Health	3
	Sub-total	18
Earth Sciences	Biological Sciences	5
	Engineering Technology and Architecture	1
	Mathematical and Information Sciences and Technology	4
	Social Sciences and Other Cultural/Social Sciences	2
	Sub-total	12
Physics	Education	1
	Mathematical and Information Sciences and Technology	1
	Medicine and Public Health	1
	Sub-total	3
	Total	**33**

The Panel also assessed 31 cross-referrals from other panels, where other panels were able to use additional input from Panel Members.[3] The number of cross-referral assessments that the Panel provided to other panels can be seen in Table 4, broken down by subject area.

Table 4: Cross-referred EPs assessed by the Panel

Primary Panel	Subject Area	Number of EPs
Biological Sciences	Agriculture and Other Applied Biological Sciences	2
	Ecology, Evolution and Behaviour	2
	Molecular, Cellular and Whole Organism Biology	5
Education	Education	1
Engineering Technology and Architecture	Engineering and Technology	7
Mathematical and Information Sciences and Technology	Computer Science, Information Technology, Information Sciences	3
	Pure and Applied Mathematics	4
	Statistics	1
Medicine and Public Health	Biomedical	4
Social Sciences and Other Cultural/Social Sciences	Anthropology and Archaeology	1
	Human Geography	1
	Total	**31**

The Panel did not use any available Specialist Advisers from the area of physical sciences. One Specialist Adviser from another panel, however, provided advice to support the assessment of an EP in the subject area of earth sciences.

Table 5: Number of EPs assigned to Specialist Advisers

Subject Area	Number of EPs
Earth Sciences	1

Referral of EPs

The primary reasons for referral of EPs to other panels were:

- when a TEO submitting the EP requested a cross-referral to another panel
- when a significant proportion (but not a majority) of the research output component of an EP fell within the subject area that was covered by another panel
- when there was not enough expertise in the Panel to fairly assess an EP.

[3] The Panel Chair declined requests for cross-referrals where the expertise required for assessing an EP was not available on the Panel.

Conflicts of interest

Conflicts of interest were managed effectively by the Panel through a combination of approaches.

At the preparatory assessment phase, EPs were, as far as possible, assigned to avoid assessors scoring EPs from their own TEOs. In all cases, the lead assessor was from a different TEO to the researcher associated with the EP under assessment. All other conflicts were logged and taken account of in the assignment phase. Panel Members were able, at any point in the assessment process, to declare potential conflicts of interest in relation to any EP that was assigned to the Panel. Such conflicts guided the TEC Secretariat and Panel Chair in ensuring that, for pre-meeting assessment, no Panel Member was assigned an EP to which they had declared a conflict of interest, apart from the two instances described below.

There were two instances of EPs being assigned to Panel Members with a minor conflict which had been notified in the PBRF IT system and, due to a misunderstanding regarding the capability of the PBRF IT system to automatically highlight conflicts when logged, remained with that Panel Member to assess at the preparatory and preliminary phases. In both cases, the EPs in question were reassigned to another Panel Member during the calibration phase to re-assess and score in place of the original, conflicted Panel Member.

At the beginning of the Panel meeting, it was agreed that members with direct conflicts such as friends and immediate colleagues with whom they worked closely, would leave the room during the discussion regarding these EPs. For more minor conflicts, such as members of the same institution, the Panel Member with the potential conflict could decide to stay in the room but not participate in the discussion unless asked a question relating to factual context. In all cases, the potential conflict was alerted to the Chair prior to discussion. This approach was applied throughout the calibrated and holistic stages of the assessment.

When the Chair had a conflict of interest and left the room or remained silent, the Deputy Chair led the meeting.

Calibration of Panel judgements

The Panel achieved effective calibration through a variety of means.

Preliminary scoring involved Panel Members being paired to assess EPs. This involved reaching a preparatory score individually, before discussing each EP with the second Panel Member to come to a preliminary (or agreed) score for each of the three components of research output, peer esteem, and contribution to the research environment. There was a high degree of agreement regarding scores at this stage of the process.

Information reviewed at the first meeting of the Moderation Panel indicated that the earth sciences scores in particular appeared more “hawkish” than other scores across the Panel.

With this feedback in mind, eight EPs were chosen from the “A”/“B”, “B”/“C” and “C”/“R” boundaries, and from across the earth sciences, for every Panel Member to assess individually as a pre-meeting calibration exercise. These EPs were then discussed in considerable detail as part of the calibration exercise on day one of the Panel meeting. Frequent reference was made to the tie-point descriptors and particular attention was paid to ensuring a common understanding of measures.

Having established benchmarks against which the substantive scoring calibration could be based, the Panel proceeded to review each EP, starting at the lowest scoring EPs and working upwards. The relevant EP was presented by the lead Panel Member. Discussion occurred where there were concerns or disagreements about the preliminary component scores assigned to the EPs.

During day one of the Panel meeting, progress through EPs was relatively slow as the Panel continued to test their common understanding of the tie-points and the application of these to the EPs. This proved to be an effective method as, with growing confidence in the common calibration across the whole Panel, scoring became faster and increasingly efficient.

During the calibration phase, all EPs were considered, with particular attention being paid to EPs at the boundaries between quality categories. A number of EPs were identified for further consideration during the holistic phase.

Holistic assessment

As mentioned above, nine EPs were revisited as part of a holistic view of the scoring. For eight of these EPs a change was made to the calibrated scoring leading to a change of the quality category assigned in the calibration phase.

During the calibration process, the Panel also made holistic judgements about the quality category that each particular EP would be assigned. Where adjustments were considered, component scores were normally revisited and adjusted as appropriate.

Final quality category

In accordance with the process set out in the Guidelines, the final quality categories were assigned with no changes to the categories assigned during the holistic phase of the process.

Panel Commentary

Relative strength of New Zealand research

International Panel Members commented on the significantly high regard in which New Zealand research is held in the physical sciences, something the New Zealand science community should be mindful of.

Māori research

The Panel did not request or receive any cross-referral advice from the Māori Knowledge and Development Panel. No EPs from the Māori Knowledge and Development Panel were received by the Panel for advice.

Pacific research

Advice was sought from the Pacific Research EAG for three EPs, all in the earth sciences. The advice received was factored into the final scoring in accordance with the Guidelines, however, see comments under Professional and Applied Research below.

Professional and applied research

Thirty-three EPs were submitted from the Panel to the PAR EAG for advice. The PAR EAG declined to assess three of the EPs, because they did meet the EAG's criteria. The breakdown by subject area for those that were assessed is: 20 in chemistry; four in earth sciences; and six in physics.

As mentioned in the discussion about EAGs on pages 6 and 7, there was a unanimous view across the Panel that for any future Quality Evaluation changes should be made to the mechanisms by which professional and applied research are assessed.

The Panel recommends that for the next Quality Evaluation, the EAG function should be incorporated into the peer-review panels to ensure a coordinated discussion regarding the application and impact of research outside of the academic environment. This change may require a small number of additional Panel Members, but would be preferable to the issues experienced by the Panel.

Performance-Based Research Fund
2012 Quality Evaluation

Social Sciences and Other Cultural/Social Sciences Panel
Panel Report

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Executive Summary

- This report summarises the results of the assessment undertaken by the Social Sciences and Other Cultural/Social Sciences Peer-Review Panel ("the Panel") during the Performance-Based Research Fund (PBRF) 2012 Quality Evaluation and confirmed at a meeting held in Auckland between 3 and 7 December 2012.

- The 26-member Panel assigned funded quality categories to 746[1] evidence portfolios (EPs). In accordance with the processes set out in the PBRF 2012 Quality Evaluation Guidelines ("the Guidelines"), the Panel assigned the following final funded quality categories:

Quality Category	EPs (numbers)	EPs (FTE weighted)
A	124	118.84
B	326	312.59
C	198	184.77
C(NE)	98	90.85
Total	746	707.05

Note: Full-time equivalent (FTE) weighted numbers have been included for informational purposes. In determining average quality scores and funding, the number of staff and evidence portfolios are both FTE weighted (see *Evaluating Research Excellence – the 2012 Assessment Interim Report* for more information).

- The Panel adequately and appropriately managed possible conflicts of interest.

- The Panel effectively achieved calibration of preliminary scores and incorporated holistic judgements into the assignment of final quality categories.

- The EPs showed a significant increase in overall quality from previous rounds, as noted by experienced New Zealand and international Panel Members throughout the assessment. Tertiary education organisations (TEOs) put considerable effort into encouraging researchers to increase their outputs and to improve reporting, and they have also made new appointments with the express aim of increasing quality ratings.

- The Panel has made several recommendations detailed in this report for the next Quality Evaluation.

Recommendations

It is recommended that the Tertiary Education Commission's (TEC) Board of Commissioners ("the Board"):

- **note** the process the Social Sciences and Other Cultural/Social Sciences Peer-Review Panel ("the Panel") followed as part of the Performance-Based Research Fund (PBRF) 2012 Quality Evaluation as outlined in this report

[1] Numbers and percentages provided in this report are not FTE weighted unless otherwise noted.

- **note** that the Panel has assigned a total of 746[2] funded quality categories
- **approve** the funded quality categories listed in the table below.

Funded quality categories in each of the subject areas are displayed in Table 1. All other evidence portfolios (EPs) assessed by the Panel were assigned an unfunded quality category, that is "R" or "R(NE)". In accordance with the reporting framework for the 2012 Quality Evaluation, the number of EPs assigned unfunded quality categories is not reported in this report.

Table 1: Final funded quality categories by subject area

Subject Area	A	B	C	C(NE)	Number of EPs
Anthropology and Archaeology	17	37	18	12	84
Communications, Journalism and Media Studies	5	47	28	9	89
Human Geography	18	29	10	12	69
Political Science, International Relations and Public Policy	16	51	25	13	105
Psychology	55	97	54	28	234
Sociology, Social Policy, Social Work, Criminology & Gender Studies	13	65	63	24	165
Total	**124**	**326**	**198**	**98**	**746**

The Panel also recommends that the TEC **consider** the following.

- Revise the PBRF 2012 Quality Evaluation Guidelines ("the Guidelines") to:
    - provide greater clarity of point/tie-point descriptors, particularly at the research output levels
    - include more specific guidance on assessing EPs covering interdisciplinary and disparate disciplines' research portfolios
    - include greater guidance on ordering of other research outputs (OROs) and allowing a brief description of the ORO's role in the researcher's platform
    - ensure that background information collected (such as, gender, ethnicity, highest degree by year and granting institution, examiners/supervisors, earliest academic position) be provided for analyses but also be included in the EP – this would assist panellists in their assessments in several parts of the components (research output, peer esteem, and contribution to the research environment).

[2] Numbers and percentages provided in this report are not FTE weighted unless otherwise noted. See the *Evaluating Research Excellence – the 2012 Assessment Interim Report* for more information.

- Revisit the requirements and processes by which Specialist Advisers, cross-referral panels and Expert Advisory Groups (EAGs) provide contextual information around recommendations for preliminary scoring, and the ways in which different types of feedback are integrated to support consistent integration of their scoring information during calibration. Provide space in the EP to respond to EAG guidance as relevant.

- Provide greater guidance on new and emerging researcher eligibility, and greater clarification on equivalency for PhDs in the assessment of new and emerging researcher EPs.

- Provide greater clarification on the types and format of evidence used to demonstrate the significance, contribution and value of the research to academic, governmental and research communities, including but not limited to citation numbers, reviews and journal/publisher. Provide comparative data on subject/sub-disciplinary differences in usual output types and rates of publication, and citation rates. Ensure normal book reviews are covered in peer esteem and contribution to the research environment components.

- Examine the possibility of ensuring all research outputs are electronically available, including, when possible, books and confidential reports.

- Revise the Guidelines to include additional information on panel calibration activities and provide fuller training on all EP components including managing conflicts of interest (including during panel meetings).

- Strengthen the Guidelines to support inter- and intra-panel calibration including the role of Moderators and training activities undertaken.

- Include in any policy review of the PBRF the unit of assessment, direct and indirect costs of the exercise, supporting “blue sky” as well as academic/government/research community research interests, and the development of the next generation of researchers.

Purpose of this Report

This report provides information on the deliberations of the Social Sciences and Other Cultural/Social Sciences Panel in its meeting between 3 and 7 December 2012. It also sets out the Panel’s recommendations to the Board.

Key Observations

The Panel Members brought wide experience to the challenges of assessing our diverse specialisations and portfolios; most were experienced assessors, and over half were veterans of two or three Quality Evaluations. While the Panel feels confident in the process and decisions reached, in this section we recommend operational changes that would support the next Quality Evaluation within the existing policy settings.

Although the Panel had both a Māori Panel Member and Pacific Panel Member, it was agreed that greater inter-cultural support would be useful. Certain revisions might be considered to help researchers and TEOs better prepare EPs, along with providing additional guidance on interdisciplinary approaches.

Making additional background data available, as in earlier rounds, such as place and date of highest research degree, gender, ethnicity, first date of research activity, would be useful.

Assessing different NRO and ORO platforms to determine research output component scores

The Panel noted the considerable inter-subject differences in publication and citation rates and their relevance, and relied on subject panellists and experts to advise subject norms and assess specialisations within the larger Panel calibration. It took time, especially at the beginning, to establish calibration principles. Identifying clear overall or panel-specific guidelines and examples of the types of evidence that might be provided to support the significance and contribution of the research to its various audiences would be helpful to augment evidence in specialisations as appropriate, and speed up calibration.

The provision of a brief description of how OROs contributed to the overall research platform would be useful in the assessment in determining the research output component score. In some cases, the ordering and presentation made this assessment difficult, particularly for multi-authored platforms. This was an important aspect of the research output score, especially in comparison to longer and often more detailed peer esteem and contribution to the research environment components.

The quality assurance status of NROs was also an area that the Panel felt required additional clarity, often provided by subject specialists or resolved through the audit process but this did lengthen the Panel process.

The Panel recommends greater guidance both for what information should be submitted in EPs and how panels should compare and judge the quality of different NROs.

Additional input

The Panel drew upon the advice of several types of additional experts in reaching the preparatory scores. Specialist Advisers, cross-referrals, and EAG assessors each differently defined ways of scoring, issues to be considered, and whether some or all NROs or the whole EP should be examined.

The Panel noted that there was significant variation between TEOs in the request or absence of cross-referrals. While the Panel acknowledges that this is the prerogative of TEOs and that the Chair had the ability to decline cross-referrals, this made the calibration of some EPs more time consuming due to multiple types of advice. In some cases, delays in submission of cross-references and EAG scores resulted in their consideration only occurring at the Panel meeting.

Recommended scores and any commentary received prior to the Panel meeting were carefully considered and incorporated in arriving at the preparatory score;

cases where scores were disparate or late were discussed, sometimes in detail, during the Panel calibration.

The Panel recommends that commentary including NROs sighted be provided to the lead Panel Member at the time that cross-referral scores are recommended to the primary Panel, and that training focus on the importance of this step.

Furthermore, the Panel appreciates the importance for primary and cross-referral panels to collaborate closely where the content of EPs cover particularly disparate or multidisciplinary subjects. The Panel recommends the inclusion of more specific guidance on the assessment of such EPs for the next Quality Evaluation.

Input from Specialist Advisers

The complementary roles of Chair and lead Panel Members should be stressed and clarified during training. This clarification should include information on requesting a Specialist Adviser, identifying the level of advice required (for example, selection of NROs if appropriate, if peer esteem and/or contribution to the research environment advice is needed) and clarifying scoring issues.

The Panel notes that it is important to provide sufficient time or requests for Specialist Advisers to be made and processed in a timely manner.

New and emerging researchers

In a number of cases, the EPs of staff members that appeared to be new and emerging were not reported as such by the submitting TEO. In most cases, this was for higher performing researchers and so did not significantly impact on the quality category their EP was assigned. The Panel recommends that the Guidelines are clearer and that the TEC support TEOs to apply the eligibility criteria consistently.

The Panel also felt that the Guidelines for the identification of new and emerging researchers should be used consistently and identified for all quality categories.

The TEC might consider wording in the panel-specific guidelines signalling that the appropriate equivalent to a doctoral degree may differ depending on the specific discipline. The current Guidelines enable a new and emerging researcher to include a PhD or equivalent as a research output without specifying what can be considered an equivalent.

Standardising and simplifying EP components

The Panel noted that the increase in the character limits and entries permitted in EPs had not necessarily result in greater clarity, nor had it aided Panel Members in assessing EPs, particularly peer esteem and contribution to the research environment. In contrast, the Panel considered that there were arguments for increasing the size of the ORO section given the key role this section plays in presenting the research platform.

The Panel felt that the peer esteem and contribution to the research environment components could have been presented more succinctly in a number of cases. The Panel recommends clearer guidance be developed about how to report common components in appropriate peer esteem or contribution to the research environment, such as student supervision by degree and TEO. For a significant proportion of

submitted EPs, TEOs tried to use all available spaces where this was not necessarily required.

Review of NROs

The Panel set a goal of reviewing 50% of all NROs. In this context, Panel Members endeavoured to review as many of the NROs as possible, exceeding its target with 73% of NROs examined.

The Panel noted that the PBRF IT system was very useful in reviewing research outputs. For the next Quality Evaluation, the Panel recommends working with TEOs to ensure all NROs can be directly downloaded from the EP (in PDF format). The Panel also suggests that OROs (such as, books, confidential reports) be made available as PDF downloads.

Where physical copies of NROs were required this was generally timely, although in a couple of cases late cross-referrals from other panels made this difficult. In all cases this was satisfactorily resolved.

The Panel recommends that the TEC examine the possibility of further increasing electronic access to research outputs such as books.

Panel calibration

Intra-Panel calibration

Throughout the pre-meeting and meeting phases, the Panel calibrated against the tie-point descriptors for each of the EP components (research output, peer esteem, and contribution to the research environment). The Panel agreed that greater guidance would be useful in calibrating between the diverse subjects within the Panel. This includes specific recommendations for NRO types and for calibration exercises.

Inter-Panel calibration

The Panel agreed that greater clarity on the role of Moderators within the panel process would be useful. A discussion of any strategies used and developed by other panels during deliberations might be helpful. This is particularly important in cross-over and interdisciplinary research areas. While there was agreement that inter-panel calibration would be difficult to fully achieve, the Moderators could play a greater role in supporting this.

The Panel recommends that the TEC could consider additional ways panels might interact, especially with the Māori Knowledge and Development Panel and the Pacific Research Expert Advisory Group as it develops.

Panel Process

Membership and process

The 26-member Panel included:

- Professor Karen Nero (Chair)

- Professor Michael Corballis (Deputy Chair)
- Dr Melani Anae
- Professor Allan Bell
- Professor Tony Binns
- Professor Sean Cubitt
- Professor Kevin Dew
- Professor Randall Engle
- Professor Julie Fitness
- Professor Garth Fletcher
- Professor Brian Galligan
- Professor Victoria Grace
- Professor William Harris
- Professor Steven Jackson
- Professor Leslie King
- Professor Robert Knight
- Professor Wendy Larner
- Professor Robyn Longhurst
- Professor Elizabeth Matisoo-Smith
- Professor Nick Perry
- Professor Cris Shore
- Professor Paul Spoonley
- Professor Glenn Summerhayes
- Professor Paul Tapsell
- Professor Jacqui True
- Professor Lianne Woodward

Each EP was assigned to two Panel Members (lead and second) who individually scored each EP and then agreed preliminary component scoring considering cross-referral, EAG assessor, and Specialist Adviser assessments where appropriate prior to the Panel meeting.

The Panel met for the five days between 3 and 7 December 2012. All 26 Panel Members were present and involved throughout the meeting. In the few cases where Panel Members needed to be absent for a short period of time, the meeting was managed to ensure that the EPs considered were not unfairly disadvantaged, such as those assigned to the individuals or within their specialist subject areas.

In all cases, judgements by the Panel were based entirely on the evidence presented in the EPs, and any cross-referral, EAG assessor, and specialist advice received.

Panel transactions

On average, each Panel Member was involved in the preliminary assessment of 61 EPs before meeting to discuss each as a Panel, although this varied greatly depending on the expertise within the Panel.

Four EPs nominated by TEOs for assessment by the Panel were transferred to other panels for assessment and two EPs were transferred into the Panel. Such transfers were carried out to ensure the content of the EPs were appropriately aligned with the expertise of the assigned primary panel.

Of the EPs assessed by the Panel, 164 were cross-referred to other panels for additional assessment advice, as set out in Table 2.

Table 2: Number of EPs cross-referred and assessed by other panels

Subject Area	Cross-Referral Panel	Number of EPs
Anthropology and Archaeology	Biological Sciences	5
	Creative and Performing Arts	1
	Education	1
	Humanities and Law	11
	Māori Knowledge and Development	3
	Physical Sciences	1
	Sub-total	22
Communications, Journalism and Media Studies	Business and Economics	3
	Creative and Performing Arts	7
	Education	3
	Humanities and Law	14
	Māori Knowledge and Development	1
	Sub-total	28
Human Geography	Biological Sciences	1
	Business and Economics	4
	Māori Knowledge and Development	1
	Mathematical and Information Sciences and Technology	1
	Medicine and Public Health	3
	Physical Sciences	1
	Sub-total	11
Political Science, International Relations and Public Policy	Business and Economics	2
	Humanities and Law	7
	Māori Knowledge and Development	2
	Sub-total	11
Psychology	Biological Sciences	4
	Business and Economics	7
	Education	7
	Health	17
	Humanities and Law	1
	Māori Knowledge and Development	8
	Mathematical and Information Sciences and Technology	1
	Medicine and Public Health	13
	Sub-total	58
Sociology, Social Policy, Social Work, Criminology & Gender Studies	Business and Economics	7
	Creative and Performing Arts	2
	Education	10
	Health	2
	Humanities and Law	7
	Māori Knowledge and Development	5
	Medicine and Public Health	1
	Sub-total	34
	Total	**164**

The Panel also received cross-referral requests from other panels, where other panels were able to use additional input from Panel Members.[3] The number of cross-referral assessments that the Panel provided to other panels can be seen in Table 3.

Table 3: Number of EPs cross-referred to and assessed by the Panel

Primary Panel	Subject Area	Number of EPs
Business and Economics	Economics	4
	Marketing and Tourism	4
	Management, Human Resources, Industrial Relations and Other Businesses	6
Creative and Performing Arts	Design	2
	Theatre and Dance, Film, Television and Multimedia	2
	Visual Arts and Crafts	2
	Music, Literary Arts and Other Arts	3
Education	Education	17
Engineering Technology and Architecture	Engineering and Technology	1
	Architecture, Design, Planning, Surveying	2
Humanities and Law	English Language and Literature	1
	Philosophy	2
	History, History of Art, Classics and Curatorial Studies	3
	Foreign Languages and Linguistics	4
	Law	4
Māori Knowledge and Development	Māori Knowledge and Development	14
Mathematical and Information Sciences and Technology	Computer Science, Information Technology, Information Sciences	5
Medicine and Public Health	Biomedical	1
	Clinical Medicine	1
	Public Health	1
Physical Sciences	Earth Sciences	2
	Total	**81**

[3] The Panel Chair declined requests for cross-referrals where the expertise required for assessing an EP was not available on the Panel.

The Panel made use of EAG advice (nominated by the TEOs and Panel) as detailed in Table 4.

Table 4: Number of EPs assessed by EAGs by subject area

Subject Areas	Number of PAR EAG Referrals	Number of Pacific Research EAG Referrals
Anthropology and Archaeology	1	17
Communications, Journalism and Media Studies	2	4
Human Geography	4	8
Political Science, International Relations and Public Policy	3	6
Psychology	11	1
Sociology, Social Policy, Social Work, Criminology and Gender Studies	14	7
Total	**35**	**43**

The Panel also made use of Specialist Advisers as detailed in Table 5.

Table 5: Number of EPs assessed by Specialist Advisers by subject area

Subject Area	Referrals to Specialist Advisers
Anthropology	32
Communications, Journalism and Media Studies	2
Human Geography	1
Political Science, International Relations and Public Policy	3
Psychology	14
Sociology, Social Policy, Social Work, Criminology and Gender Studies	43
Total	**95**

Referral of EPs

The primary reasons for referral of EPs to other panels were:

- when a TEO submitting the EP requested a cross-referral to another panel
- when a significant proportion (but not a majority) of the research output component of an EP fell within the subject area that was covered by another panel

- when there was insufficient expertise or conflict of interest to fairly assess part of the EP subject matter.

The primary reason for referral of EPs to Specialist Advisers was that the Panel identified specific expertise needed to assess a significant proportion of the EP including specialised methodologies or there was a conflict of interest.

Conflicts of interest

The Panel, through a combination of approaches as outlined in the Guidelines, managed conflicts of interest effectively.

Panel Members were able, at any point in the assessment process, to declare potential conflicts of interest in relation to any EP that was assigned to the Panel. Such conflicts guided the Panel Chair and Secretariat in ensuring that, for pre-meeting assessment, no Panel Member was assigned an EP against which they had declared a conflict of interest.

Where an EP was assigned to a conflicted Panel Member in error, the EP was reassigned to someone else and the Panel Member concerned did not contribute to the assessment of that EP. There were a few EPs where conflicts were highlighted to the Chair only at the Panel meeting – these EPs were reassigned during the Panel meeting. In these cases, the new assessors made their assessments without knowledge of the conflicted Panel Member's preliminary or preparatory score.

The guidance regarding conflicts of interest, as presented by the Moderation Panel, was discussed at the beginning of the meeting. Accordingly, those members who had recorded a conflict of interest, or who decided during the meeting that they had a potential conflict of interest, either absented themselves from the room for the discussion or remained silent in the room and did not participate in the discussion, but upon the request of the Chair could contribute factual information.

Where the Panel Chair had a conflict of interest and left the room, the Deputy Chair led the meeting.

Calibration of Panel judgements

The Panel achieved effective calibration through the steps outlined in the Guidelines.

Preliminary scoring involved Panel Members being paired to assess EPs. This involved reaching and entering a preparatory score individually, before the lead discussed each EP with the second Panel Member to come to a preliminary (or agreed) score for each of the three components of research output, peer esteem and contribution to the research environment. Panel Members commented how preliminary scores were generally reached with ease, although in some cases further discussions were required to reach agreement, and these portfolios were often flagged for additional scrutiny at the Panel meeting.

At the beginning of the Panel meeting, Panel Members were presented with issues highlighted in the first Moderation Panel meeting which was attended by the Panel Chair. The presentation was made by the Chair in conjunction with the Chair of the Moderation Panel. The Moderation Panel asked the Panel to specifically look at the calibration of human geography, and communications, journalism and media studies in their deliberations.

Following this presentation, the Panel viewed and discussed examples of EPs from subject areas that received preliminary weighted scores at the tie points or in the mid-ranges of the quality categories to test calibration, with special attention to the subject areas highlighted through the Moderation meeting. This satisfied the Moderation Panel's request and resulted in changes. This calibration exercise at the start of the meeting helped provide a benchmark in each quality category along with tie-point descriptors for each of the three components (research output, peer esteem and contribution to the research environment), against which the substantive scoring calibration could be based.

Led by the relevant lead Panel Member, the Panel reviewed the EPs organised by scores (beginning at the lowest) across all subject areas. Discussion occurred where there were concerns or disagreements about the preliminary component scores assigned to the EPs. In line with themes communicated by the Moderation Panel, the component scores were then calibrated by the Panel as necessary to ensure consistency in scoring across the Panel.

Slow progress was made initially because continual recalibration among Panel Members was necessary. Over time, however, the Panel became familiar with the common dilemmas that faced assessors and developed standards and expectations for scores in each of the three components. As a result, the discussions towards the end of the calibration process were considerably faster and more efficient.

During the assessment phase, a number of EPs were identified that would require further calibration. These were also reviewed before any holistic assessments of EPs commenced.

At the end of the assessment the Secretariat again selected sample EPs around all the quality category tie-points to again test calibration in the subject areas highlighted through the Moderation meeting. No changes were made and this step further satisfied the Moderators that the Panel had responded to its request.

Māori research

Twenty EPs submitted to the Panel were cross-referred to the Māori Knowledge and Development Panel.

These EPs were assessed according to the panel-specific guidelines. The Panel took into account the advice received (at times brief) and the scores were reflected in most final quality categories. In some instances there were significant differences (high and low) between the preparatory scores assigned by the Panel Members and the advice provided. The Panel carefully reviewed these instances of disparate scoring, applying the assessment criteria and benchmarking with other EPs during calibration. In cases where the Māori Knowledge and Development Panel cross-reference scores were lower, the Panel generally confirmed the scores assigned by the Panel pairs. Social science researchers with research platforms engaged in Māori research can submit to either (or both) the Panel or Māori Knowledge and Development Panel. For this reason, the SSOCSS Panel only assessed a subset of Māori research and Māori researchers' EPs in social science subject areas.

The Panel valued the perspectives of those members with expertise in, and relevant to, Māori research, and recommends that the number of such Panel Members be

increased for the next Quality Evaluation, along with building closer relationships with the Māori Knowledge and Development Panel.

Panel selection and requests for cross-referrals should be carefully considered by researchers and TEOs for the next Quality Evaluation.

Pacific research

There were 43 EPs assessed by the Panel that had input from the Pacific Research EAG. These EPs were assigned to the Pacific Research EAG by either the submitting TEO or by the Panel and were assessed according to the panel-specific guidelines, with careful attention to consider and support Pacific research.

EAG advice was taken into consideration in the development of an EP's preliminary score and considered during the Panel's calibration exercise, affecting a number of our final quality categories. Additional commentary from EAG members would have been useful, particularly where scores differed between the EAG assessor (or assessors) and Panel Members.

The Panel valued the perspectives of those members with expertise in, and relevant to, Pacific research, and recommends that the number of such Panel Members be increased for the next Quality Evaluation, along with building closer relationships with the Pacific Research EAG.

Canterbury earthquakes – special circumstances

The Panel took care when accounting for the impact of the Canterbury earthquakes on the quantity of evidence presented in EPs. The Panel was aided in this task by the specific advice provided in EPs about what would otherwise have taken place and would have been included in the EP if the earthquakes had not intervened.

The Panel also ensured that EPs that chose the alternative assessment period of 1 January 2005 to 31 December 2010 did not receive additional consideration. The Panel felt that considering EPs with Canterbury earthquakes posed very few issues, and additional special circumstances were factored in as appropriate.

Holistic assessment

Only two EPs were considered specifically as part of the holistic phase of assessment, though care was taken to revisit all scores to identify any that could have been holistically assessed. In one case, a change was made to the quality category assigned in the calibration phase.

Final quality category

In accordance with the process set out in the Guidelines, the final quality categories were assigned with no changes to the categories assigned during the holistic phase of the process.

Panel Commentary

Relative strength of New Zealand research

Panel Members were impressed by the high standard of published output in each of the disciplines covered by the Panel.

TEO subject area strengths

All of the subjects covered by the Panel have strengths in intra- and inter-disciplinary research both within and across panels and internationally that increase their visibility and impact, as noted in the subject profiles below. Interdisciplinary researchers with strong international collaborators often attract large research grants and are publishing in high-impact general scientific, as well as regional and subject-focused journals.

Brief examples include anthropology and archaeology's increasingly lab- and field-based research, interacting with colleagues in numerous other science disciplines including genetics, biochemistry, geology, and chemistry. There is an impressive focus on discourse analytic work across a range of empirical studies integrating critical psychology, sociology, human geography, gender studies, and media studies that would rank among the best of its kind internationally. A final example is the way in which evolutionary theory and research is being integrated with psychology in various departments producing highly visible, world-class results.

Anthropology and archaeology

This is a strong and mature subject area that includes researchers with international ethnographic, comparative, theoretical and methodological excellence especially focused on the peoples of the Pacific in its traditional sub-disciplines. The work of anthropology is increasingly inter-disciplinary, with special strengths in politics, organisational ethnographies and policy; indigenous histories and histories of encounters; settlement and resettlements within the Pacific; ethnicity and ethnologies of diasporic communities; and indigenous entrepreneurship, cultural heritage and ecosystem management and the new museology.

Anthropology in New Zealand has a high international research profile. While this is partly a consequence of the transnational character and orientation of the discipline, it also reflects the unbalanced age profile of its practitioners and perhaps masks a weakness in New Zealand's ability to recruit and/or retain good young staff. Attention is required to succession planning and developing new researchers, especially in areas that represent New Zealand's increasingly diverse population.

Communications, journalism and media studies

This subject area has overlaps with both Humanities and Law and with Performing and Creative Arts panels as well as affinities with the various disciplines represented within the Panel. This subject has particular strengths in policy, in broadcasting and internet studies. Researchers working in social science modes employ a wide variety of approaches, including sociolinguistics, political economy, ethnography, feminism, historiography, phenomenology, national and comparative analysis. They exhibit a broad terrain of specialisations: audience research, genres of news and fiction,

channels (radio, print, music, games, TV, internet), policy, professionalism and industry studies.

It was notable that a number of very strong younger scholars have been recruited in what is clearly a growing area in tertiary education, bringing with them highly current new directions in research, as well as connections to international publishers. A significant number of researchers have improved their standing since 2006, in ambition, rigour, number, quality and placement of their research outputs. Given the retirement or departure of a number of senior scholars since 2006, succession planning appears well in hand.

Human geography

Human geography in New Zealand is a mature discipline. Research productivity remained high in the 2012 Quality Evaluation. In the census period, many human geographers held positions that indicated considerable peer esteem. The comparatively small community earned international recognition for their work in a range of areas, including demography and migration, development geographies, political economy, gender geographies, socio-cultural geographies, and environmental studies. This research has been led by departments and programmes in both the older and newer universities. Within these universities, human geographers work alongside departmental colleagues who are physical geographers, environmental scientists, planners, and tourism scholars. In this respect, it is difficult to determine the overall strength of New Zealand geography as a discipline because the Quality Evaluation process treats the discipline as a fragmented one. This issue could usefully be reviewed by the TEC. The need to develop new researchers was also identified as an issue in the current Quality Evaluation round.

Political science, international relations and public policy

Politics, also known as political science and political studies, is a productive, dynamic, and innovative research area in New Zealand. Able scholars are registering a good quantity of high-quality work in a diversity of sub-fields, including international relations, analysis of both pluralist and authoritarian regimes, political economy, political philosophy, public policy, and New Zealand's domestic affairs. For a small university system, the diversity is truly impressive. Academics in these arenas are well placed to further the commitment to act as "the critic and conscience of society", and they follow through commendably in work on topics such as the politics of democratic institutions, indigenous rights, justice and development disparities.

In terms of area studies, vital to a small country needing expert interpretation of other cultures and societies, politics scholars supply a substantial portion of New Zealand research expertise on East Asia, South East Asia, the Pacific, and the Middle East. The discipline also has a particularly strong cohort of younger and new and emerging researchers across the sub-fields, a number of them featuring vigorously in top international outlets; the future looks healthy. Otherwise, it might be noted that politics is among the fields in which a majority of scholars pursue the tough road of single or dual authorship of large-scale outputs that in many disciplines are produced by whole teams of researchers.

Psychology

Psychology in New Zealand features strongly in international rankings, and is especially strong in cognitive neuroscience, developmental psychology, social psychology, cognitive science, behavioural neuroscience, and discourse theory. Evaluations tended to be lower in the TEOs that have adopted a more applied focus. Clinical and applied psychology feature less strongly in research evaluations, in part because they are as much concerned with professional training as with research.

The Panel believes it is important to maintain the scientist-practitioner model in the training of clinical and other professional psychologists, in order to ensure that practice is based on sound scientific principles. It is the Panel's view that the Quality Evaluation not only has a part to play in strengthening the research capability of clinical and applied psychologists in the future, but has had a positive impact on their research productivity in the past decade. In this regard, the Panel noted that, in common with other fields of psychology, clinical psychology has enhanced its research visibility since 2003.

Sociology, social policy, social work, criminology and gender

This grouping of social sciences encompasses a range of disciplines and programmes that vary significantly in their research activities and standing, and range from well-established disciplines like sociology through to more recent specialisations such as gender studies which are represented as distinct fields and as part of interdisciplinary activities. A number of the EPs assessed showed a strong and important intersection between sociology, social work and indigenous issues/research. The Panel also assessed EPs in applied areas, such as social work, which often struggle to demonstrate research performance, partly because of their concern with professional training and partly because of their local focus. In addition, the Panel's purview also encompasses a range of social science specialities that involve only a few academics.

There is significant variation within and amongst these disciplines of high-performing researchers, often relatively small in number, and others who constitute a mix of early career researchers, those focused on professional training, and others who provided evidence of modest research performances.

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Executive Summary

- This report summarises the assessment process and outcomes of the Pacific Research Expert Advisory Group ("the EAG").

- A total of 145 evidence portfolios (EPs) were referred to the EAG. Of these, 131 were assessed by the EAG.

- The EAG followed the EAG's guidelines to assess whether EPs met the criteria of being Pacific research. The EAG guidelines were used in conjunction with the 2012 PBRF Quality Evaluation Guidelines ("the Guidelines"). Fourteen EPs referred to the EAG did not meet the criteria. In these cases, the EAG Chair declined to assess the EPs and advised the Chairs of the relevant peer-review panel.

- The EAG guidelines allowed for one EAG Member to assess each EP and allocate a single score, however, two EAG Members were assigned to assess 13 of the EPs referred to the group.

- Of those EPs referred to the EAG and assigned a funded quality category, nearly 49% received either an "A" or "B" quality category.

- In this report, the EAG outlines a number of recommendations to be considered for the next Quality Evaluation.

Recommendations

The Pacific Research Expert Advisory Group ("the EAG") recommended that the Tertiary Education Commission's (TEC) Board of Commissioners ("the Board") **consider** the following for the next Quality Evaluation.

- Review the requirements for identifying nominated research outputs (NROs) with a Pacific research designation. While many of the TEO-identified NROs were relevant to the EAG, it was not always the case. For the next Quality Evaluation, TEOs will need to accurately apply the criteria for declaring which EPs and which NROs meet the criteria of Pacific research.

- Provide greater clarity and understanding on how best to provide assessment on either a whole EP or a specific component (for example, one or more NROs). A more defined set of instructions about how EAG Members are to assess EPs will strengthen the value of comments and rationale in assessing an EP.

- Facilitate the engagement of EAG Members with peer-review panel members. This could be accommodated in the following ways:

    - greater dialogue (written and/or verbal) between EAG Members and lead panel members prior to preliminary scoring

    - EAG Members engaged in discussions of EPs with Pacific research content during panel meetings.

- Consider establishing a Pacific peer-review panel for the next Quality Evaluation. The underdeveloped extent of Pacific research and the number of urgent subjects within the Pacific have paradigms, perspectives and critical stances that are not accurately reflected in mainstream research.

Purpose of this Report

This report provides information on the deliberations of the EAG established for the 2012 PBRF Quality Evaluation. The role the EAG was to provide expert advice on the significance, quality and impact of Pacific research to peer-review panels.

Commentary

Access and examination of NROs

The EAG Chair reviewed all EPs that were referred to the EAG to ensure they met the EAG assessment criteria.

The scores provided by the EAG took into account all aspects of the EP considered relevant, including peer esteem and contribution to the research environment.

Interactions with panels and contribution to EP assessment

The EAG Members considered that they would have benefited from more explicit guidance on which aspects of an EP that the peer-review panels would value guidance (that is, the whole EP, its components, or specific items) and the nature of the commentary that was sought.

Assessing impact within the assessment period

The EAG considered the impact of NROs occurring within the assessment period. The EAG followed the Guidelines and impacts yet to occur or projected to occur were not considered. Where relevant, the EAG considered peer esteem and contribution to the research environment components of an EP as part of the final score.

Evidence of research significance, quality and impact

The impact of Pacific research is reflected by the commitment by Pacific researchers to research that benefit Pacific communities. The EAG found extensive evidence of engagement between researchers and communities, as well as publication of research in well-regarded, peer-reviewed publications in a number of EPs and this tended to be associated with higher scoring.

Of the 131 EPs assessed by the EAG, nearly half received EAG scores of five or higher in their assessments.

Table 1: Number of EPs assessed and scoring by the EAG

EP	EAG
Number of EPs referred	145
Number of EPs that met EAG criteria	131
Number of EPs that scored 5 to 7	63 (48%)
Number of EPs that scored 6 to 7	37 (28%)

Alignment of EPs to EAG criteria

The EAG assessed EPs according to the EAG criteria, but TEOs did not always accurately apply the criteria for declaring that EPs contained Pacific research.

For the next Quality Evaluation, guidance should be provided to TEOs to assist in the identification of NROs that will meet the EAG criteria.

Panel Process

Membership

The EAG comprised:

- Professor Peggy Fairbairn-Dunlop (Chair)
- Dr David Gegeo
- Dr Malakai Koloamatangi
- Dr Diane Mara
- Dr Camille Nakhid
- Professor Michael Reilly
- Dr Damon Salesa
- Dr Timote Vaioleti

Referral of EPs

EPs were referred to the EAG through:

- TEOs and/or researchers requesting their EPs be assessed by the EAG
- the Chair of a peer-review panel referring an EP to the EAG.

The EAG criteria

The EAG criteria was developed and refined as part of the process of establishing the advisory group. The EAG confirmed at the group training day the criteria for Pacific peer esteem is qualitatively different from mainstream. For the purpose of the 2012 Quality Evaluation, Pacific research was characterised as, “an EP or NRO that includes research demonstrating characteristics relating to Pacific values, knowledge bases and a Pacific group or community”.

Feedback from the EAG shows the training day assisted EAG Members to assess EPs. The agreed outcomes from the EAG from the training day were the following:

- applying the four scoring criteria (A-D) – EAG Members agreed that not all four criteria would necessarily be able to be applied to an EP and agreed that judgement would be needed to decide which criterion best fit the EP and then make an assessment against the criterion

- assigning a single assessor for an EP – this decision was made due to the projected number of EPs to be submitted to the EAG.

Process

Once it was determined that an EP referred to the EAG met the relevant criteria, the Chair assigned the EP to one EAG Member to assess.

For 13 EPs, the EAG Chair assigned two EAG Members to undertake the assessment process. This was done as the Chair considered that the EPs contained content that would benefit from additional scrutiny.

In all cases, judgements by the EAG were based entirely on the evidence presented in the EPs.

Panel transactions

A total of 131 EPs of the 145 submitted to the EAG were assessed. Fourteen EPs referred to the EAG did not meet its criteria. The EAG Chair declined to assess these EPs and advised the Chair of the relevant peer-review panel.

While EPs were referred to the EAG from all 12 peer-review panels, about 67% of the EPs came from three panels (Social Sciences and Other Cultural/Social Sciences; Education; and Medicine and Public Health Panel).

*Table 2: Number of EPs assessed by the EAG by peer-review panel**

Primary Peer-Review Panel	Number of EPs
Biological Sciences	1
Business and Economics	11
Creative and Performing Arts	6
Education	28
Engineering Technology and Architecture	2
Health	1
Humanities and Law	16
Māori Knowledge and Development	1
Mathematical and Information Sciences and Technology	−
Medicine and Public Health	19
Physical Sciences	3
Social Sciences and Other Cultural/Social Sciences	43
Total	**131**

Note this table only includes EPs assessed by the EAG.

The scoring advice of the EAG was provided to the relevant peer-review panels and factored into their recommendations to the Board.

The EPs assessed by the EAG cover 25 of the 42 subject areas defined in the 2012 Quality Evaluation.

Table 3: Number of EPs assessed by the EAG by subject area

Primary Panel	Subject Area	Number EAG Referrals
Biological Sciences	Ecology, Evolution and Behaviour	1
Business and Economics	Accounting and Finance	3
	Economics	1
	Management, HR, IR and OB*	3
	Marketing and Tourism	4
Creative and Performing Arts	Design	2
	Music, Literary Arts and Other Arts	2
	Visual Arts and Crafts	2
Education	Education	28
Engineering Technology and Architecture	Architecture, Design, Planning, Surveying	2
Health	Pharmacy	1
Humanities and Law	English Language and Literature	1
	Foreign Languages and Linguistics	5
	History, History of Art, Classics and Curatorial Studies	8
	Law	2
Māori Knowledge and Development	Māori Knowledge and Development	1
Medicine and Public Health	Clinical Medicine	2
	Public Health	17
Physical Sciences	Earth Sciences	3
Social Sciences and Other Cultural/Social Sciences	Anthropology and Archaeology	17
	Communications, Journalism and Media Studies	4
	Human Geography	8
	Political Science, International Relations and Public Policy	6
	Psychology	1
	Sociology, Social Policy, Social Work, Criminology & Gender Studies	7
	Total	**131**

Conflicts of interest

EAG Members were able, at any point in the assessment process, to declare potential conflicts of interest in relation to any EP.

The allocation of EPs by the Chair was undertaken in a manner to minimise potential conflict of interests. Any potential conflicts guided the Chair and Secretariat in

ensuring that no EAG Member was assigned an EP against which they had declared a conflict of interest.

Calibration of judgements

The EAG examined NROs to form a judgement on the significance, impact and quality of the research of the EP. The EAG achieved effective calibration by:

- assessing each EP according to the EAG criteria scoring guidance
- assigning a score between 0-7 for the significance, quality and impact of research in the EP
- preparing an opinion relating to the assessment which provides a factual rationale for the score assigned
- having the comments make explicit reference to the material in the EP, and how this aligns with the scoring guide.

Pacific Research in New Zealand

Relative strength of Pacific research in New Zealand

Pacific research (field, scope and quality) is growing; however, much of the research is being done by non-Pacific researchers. The few senior Pacific academics active in New Zealand are committing significant resources to developing new and emerging Pacific researchers.

The underdeveloped extent of Pacific research and the number of subjects within the Pacific have paradigms, perspectives and critical stances that are not accurately reflected in mainstream research.

The EAG notes that all relevant factors need to be taken into consideration for Pacific researchers as they often score relative highly in the components of peer esteem and contribution to the research environment, but may not score as highly in research output.

TEO and subject area strengths

Pacific research has been strong in the social sciences and education as evidenced in the EPs submitted. The EAG could not make a definitive statement on this matter as they assessed what was allocated. To make a definitive judgement, the EAG would need to take **all** Pacific researchers into account, not just those researchers who had EPs referred to the EAG.

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Executive Summary

- This report summarises the scoring process and outcomes of the Professional and Applied Research Expert Advisory Group ("the EAG") which was divided into four subgroups as follows:
    - Commercial
    - Professional Practice
    - Environmental
    - Social.
- A total of 333 EPs were assessed by the EAG.
- It was noted that of the EPs assessed by the EAG, 101 were referred by tertiary education organisations (TEOs) and accepted for assessment by the Commercial subgroup. Of this subset, 14 were assessed as having had a significant commercial impact by one or more of the EAG Members.
- The relatively low number of EPs assessed by the EAG suggests one or more of the following:
    - that TEOs considered that the peer-review panels had sufficient expertise to assess EPs without referral to the EAG
    - that greater recognition of the opportunity for submission to the EAG may occur in the next Quality Evaluation
    - that the material selected for presentation in EPs was not well-aligned to the criteria of the EAG
    - that little activity that met the criteria for referral was taking place.
- The EAG guidelines allowed for one EAG Member to assess each assigned EP and allocate a single score according to the specific criteria and tie-points defined for that subgroup. In practice, for the Commercial, Social and Environment subgroups two EAG Members were assigned to each EP to provide an opportunity for calibration of scoring within each of these subgroups. Because of the small membership and broad range of areas covered by the Professional Practice subgroup, only one EAG Member was assigned to each EP.
- There was general agreement across the EAG that, whilst the assessment of professional and applied research is an important and valuable measure, the EPs did not provide sufficient evidence of application and/or impact of the research and that in some cases a higher score may have been achievable had the evidence been presented.

Recommendations

The scores and any commentary provided by the Professional and Applied Research Expert Advisory Group ("the EAG") subgroups was provided to the peer-review panels and considered in the assignment of quality categories. As such, the following recommendations relate primarily to the relevant assessment criteria and processes.

The EAG note that the criteria for the assessment of professional and applied research may require refinement.

Any refinement of the assessment criteria and process should take account of the following points.

- Further refinement of the assessment criteria for the EAG subgroups with a particular focus on the specific forms of evidence required to demonstrate impact.

- Further work to ensure that the commentaries provided by the EAG meet the needs of peer-review panels.

- Providing more explicit guidance to tertiary education organisations (TEOs) and PBRF-eligible staff on how best to present evidence of research application and impact, and examples of such evidence for each of the four subgroups. Providing more space in EPs for PBRF-eligible staff to describe the impact accruing from their research outputs and other activities.

- Considering changes to the assessment process so that the sometimes long timeframes between the completion of research, and its uptake and impact can be recognised appropriately.

The EAG notes that the Moderation Panel for the 2012 Quality Evaluation has recommended that the Tertiary Education Commission (TEC) and the Ministry of Education review the design of the Quality Evaluation with the aim of further developing effective mechanisms for encouraging and recognising professional and applied research conducted by the staff of TEOs. The EAG strongly supports this recommendation.

Overall, the EAG was very supportive of including a specific assessment of professional and applied research through the Quality Evaluation and these recommendations are made in this context.

Purpose of this Report

This report provides information on the deliberations of the Professional and Applied Research EAG which was established as a consequence of recommendations made by the Sector Reference Group following the 2006 Quality Evaluation.

The EAG's role was to provide additional expert advice on the significance, quality and impact of professional and applied research to the peer-review panels. As such, the group provided an opportunity for the Quality Evaluation to be used to encourage and recognise professional and applied research conducted by the staff of TEOs.

Commentary

Review of nominated research outputs (NROs)

The EAG considered all NROs referred to them that met the specified criteria. Additionally, the scores assigned to each EP by EAG Members took into account all aspects of the EP considered relevant to the assessment, including instances of peer esteem and contribution to the research environment that were of a professional and applied nature.

Inclusion of patents as NROs

In itself, a patent does not constitute the successful application of a body of research. As a consequence, without additional and specific evidence of the application of that intellectual property, EAG Members were unable to assess actual impact, and scored the EP accordingly.

Evidence of research significance, quality and impact

One of the most significant issues faced by the EAG Members was distilling evidence of impact from the EPs. Each subgroup's criteria identified five areas of impact and EPs were scored against (one of) these criteria.

Table 1 shows the number of EPs submitted and accepted by the four EAG subgroups. The table also shows the number of EPs that were assigned scores of 5, 6 or 7 by at least one assessor. A score of five indicates that the EP had evidence of some significant change or impact.

Table 1: Number of EPs assessed and scored by the EAG

EPs	Commercial	Environmental	Social	Professional Practice	Total
Referred	101	93	37	114	345
Met criteria	101	92	34	106	333
Scored 5 to 7	42	48	18	35	143 (43.3%)
Scored 6 to 7	14	27	8	18	67 (20.3%)

Members took care to review EPs in their entirety including considering all relevant NROs, evidence of peer esteem and contribution to the research environment.

Members noted that information on the particular significance and nature of any impact could have been made more explicit in a significant number of EPs and that this may have tended to understate the amount of professional and applied research being undertaken.

The EAG recommends that more specific advice to TEOs about the most appropriate way to present information on the significance of the research and any evidence of impact should be provided. This would allow EAG members to ensure that assessments took into account the full body of professional and applied research undertaken by PBRF-eligible staff.

Assessing impact within the assessment period

The lag between an applied research output and its measurable impact in the world outside of academic research was the topic of considerable discussion. This was particularly (but not exclusively) the case for the Commercial subgroup where the commercialisation of intellectual property is frequently a lengthy process and is unlikely to be measurable within a six-year timeframe. The same can also be said for the Environmental subgroup.

It is recommended that explicit provision be made in EPs for information on impact to be recorded that has arisen within the assessment period, whether or not that impact relates to evidence that has been produced during that period. While the Guidelines provided for such recognition it would aid staff preparing EPs if this was made more explicit.

Alignment of EPs to EAG criteria

There were some differences in the depth and quality of evidence presented in EPs and the EAG considered that this may have tended to understate the extent of applied research in New Zealand.

There were 12 EPs which were “declined to score” because they did not meet the criteria, and an even larger number where the score given was very low due to a lack of evidence.

The EAG anticipates for the next Quality Evaluation that more EPs will be referred to the group for consideration. This is likely to be the case as TEOs and staff preparing EPs will have more awareness of the assessment pathway generally, and a clearer sense of the specific content that EAG members expect to see in EPs.

EAG Process

Membership

The EAG comprised:

Garth Carnaby (Chair Professional and Applied Research EAG)

Commercial subgroup
- John Kernohan (Chair)
- Allan Anderson
- John Cunningham
- William Denny
- Peter Fennessy
- Trevor Laughton
- William Swallow

Professional Practice subgroup
- Andrew Cleland (Chair)
- Allan Anderson
- Andrew Beck
- Rob Blakemore
- Bryce Buddle

- John Campbell
- Sally Casswell
- John Cunningham
- Judith Duncan
- Brian Easton
- Peter Fennessy
- Bruce Glavovic
- Mark Hucklesby
- Tahu Kukutai
- Steven La Grow
- Patricia Laing
- Eva McLaren
- Murray Milner
- Craig Moller
- John Reid
- Frederick Seymour
- Richard Sharpe

Environmental subgroup

- Diane Menzies (Chair)
- Barry Barton
- Rob Blakemore
- Sally Casswell
- Bruce Glavovic
- John Kernohan
- Maggie Lawton
- Graeme Robertson

Social subgroup

- Sally Casswell (Chair)
- Brian Easton
- Tahu Kukutai
- Steven La Grow
- Patricia Laing
- Eva McLaren

A number of EAG Members were members of more than one subgroup. This enabled the use of individual EAG Member's expertise across a range of EPs.

Referral of EPs

The primary reasons for referral of EPs to the EAG were:

- the submitting TEO requested assessment by one of the EAG subgroups

- the Chair of a peer-review panel referred an EP to one of the EAG subgroups.

Clarification of the criteria applied

The criteria for assessment of EPs by the EAG subgroups were developed and refined as part of a process in establishing the EAG. During the EAG training day, the assessment criteria were reviewed again and a common approach was agreed regarding two key areas.

- The application of the five scoring criteria (A to E). It was recognised that the applicability of all five criteria to every EP was unlikely and that when assessing an EP (or part of an EP), EAG Members should apply the criterion with the best fit to the EP and then make an assessment against that single criterion.

- It was agreed that two EAG Members would be assigned to each EP referred to the Commercial, Environment and Social subgroups. Each assessor pair would score each EP separately, and then discuss and calibrate their scoring.

- Due to the nature of the assessment being conducted by the Professional Practice subgroup and the specific professional expertise held within this group, it was decided that the subgroup would apply the original approach of a single assessor for each EP.

Process

EPs meeting the EAG criteria were assigned to EAG Members by the subgroup Chair. In cases where there was a conflict, or the assignee was unable to provide the necessary specialist input, the EP was reassigned to another EAG Member. In a number of cases, the requirement for specialist input resulted in the appointment of additional EAG Member to the subgroup, notably in the Professional Practice area where an additional 16 EAG Members were assigned to the subgroup.

EPs that did not meet the EAG criteria were declined by the overall EAG Chair on the recommendation of the relevant subgroup Chair.

The documented EAG criteria were followed throughout the process. The specific application of those criteria to each subgroup, in the case of assessor numbers per EP and use of the scoring criteria, were discussed and agreed during the training day as discussed above.

In all cases, judgements by the EAG were based on the evidence presented in the EPs.

EAG transactions

A total of 345 EPs were nominated by TEOs for referral to the EAG. Of this total, 12 EPs did not meet the EAG criteria and were not assessed by EAG Members.

Table 2: Number of EPs assessed by EAG by subject area

Primary Panel	Subject Area	Number of EPs
Biological Sciences	Agriculture and Other Applied Biological Sciences	40
	Ecology, Evolution and Behaviour	22
	Molecular, Cellular and Whole Organism Biology	26
Business and Economics	Accounting and Finance	1
	Economics	11
	Management, Human Resources, Industrial Relations and Other Businesses	13
	Marketing and Tourism	12
Creative and Performing Arts	Design	5
	Music, Literary Arts and Other Arts	1
	Visual Arts and Crafts	1
Education	Education	23
Engineering Technology and Architecture	Architecture, Design, Planning, Surveying	22
	Engineering and Technology	37
Health	Dentistry	7
	Pharmacy	4
Humanities and Law	Foreign Languages and Linguistics	1
	Law	5
Māori Knowledge and Development	Māori Knowledge and Development	2
Mathematical and Information Sciences and Technology	Computer Science, Information Technology, Information Sciences	3
	Pure and Applied Mathematics	1
	Statistics	2
Medicine and Public Health	Biomedical	6
	Clinical Medicine	15
	Public Health	8
Physical Sciences	Chemistry	20
	Earth Sciences	4
	Physics	6
Social Sciences and Other Cultural/Social Sciences	Anthropology and Archaeology	1
	Communications, Journalism and Media Studies	2
	Human Geography	4
	Political Science, International Relations and Public Policy	3
	Psychology	11
	Sociology, Social Policy, Social Work, Criminology and Gender Studies	14
	Total	**333**

Conflicts of interest

There were few instances of conflict of interests arising as EAG Members were not drawn from the TEOs involved in the 2012 Quality Evaluation, and many were not involved in research activity.

Where a conflict did occur, due to a close professional association or personal connection between an EAG Member and researcher, it was declared and the subgroup Chair allocated the relevant EP to an alternative EAG Member.

Calibration of judgements

During the training day, the application of the scoring criteria was discussed at length and agreement reached regarding the use of the criteria.

Where the EAG subgroup Chair allocated two EAG Members to assess an EP, the process described in the paragraphs above was applied.

Professional and Applied Research in New Zealand

Relative strength of professional and applied research

As a consequence of factors described above, most notably the minimal evidence of application and impact provided in EPs, it was not possible to make any informed comment on the relative strengths of professional and applied research across the four main areas assessed.

TEO and subject area strengths

The nature of the assessment undertaken and the small number of EPs referred to the EAG was not suited to commenting on strengths across the TEOs or the subject disciplines. It was also not an aspect of assessment the EAG was asked to make. From the perspective of the Environment subgroup, however, it can be said that Lincoln University had by far the largest quantity of EPs referred and many provided evidence of impact consistent with the criteria for the EAG.

Other Observations

The process followed for the 2012 Quality Evaluation was generally successful. Whilst minor adjustments may be required for the next Quality Evaluation, the key issues do not lie with the process. It has been suggested by some that peer-review panels could incorporate the necessary skills and experience to evaluate EPs for applied impact without the need for a separate EAG. From the perspective of the EAG, there is a strong view that the input of expert advisers is important and having two expert assessors per EP advisable. To avoid very large peer-review panels may mean retaining the EAG as a separate group.

The number of EPs received for assessment by the EAG was significantly fewer than expected, and the quality of the submissions from an applied perspective was also lower than expected, with minimal evidence of impact given in many cases. Both these points have been discussed in sections above but are restated here because

they point to an issue which goes beyond the scope of just the PBRF to address.

A total of 101 EPs met the criteria for assessment by the Commercial subgroup of the EAG. Of these, 14 were assessed as having had an outstanding commercial impact (a score of either 6 or 7) by one or more EAG Members. It may be the case that the best commercial successes on the whole comes from people who produce excellent academic research and would not require referral to an group such as the EAG. The small number of EPs referred to the EAG may, however, raise issues with the way in which professional and applied research is assessed as part of the PBRF, and what mechanisms are required alongside the PBRF to encourage greater application of research findings.