

Performance-Based Research Fund

Panel-Specific Guidelines for
the 2018 Quality Evaluation

Tertiary
Education
Commission
Te Amorangi
Mātauranga Matua



Published by the Tertiary Education Commission
Te Amorangi Mātauranga Matua
44 The Terrace
PO Box 27048
Wellington, New Zealand

First published July 2016

Updated April 2018

ISBN (electronic): 978-0-478-32054-1

Photo credit: Sara Orme – NZ Story

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The Tertiary Education Commission

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Preface from the Chief Executive

Tēnā koutou

The Tertiary Education Commission is pleased to publish the guidelines for the 2018 PBRF Quality Evaluation following two years of engagement and support from the tertiary sector and other key stakeholders. These guidelines have been developed well in advance to provide the information and guidance needed by all those involved in the preparation for the 2018 Quality Evaluation.

The PBRF encourages and rewards the breadth and diversity of research excellence and its role in supporting and developing New Zealand and our tertiary education sector. As a result, we've aimed to create guidelines that support the evaluation of quality research in all its forms. We hope that researchers—regardless of the focus of their research—can see their work reflected in the 2018 Quality Evaluation processes.

Stakeholder feedback during the process of developing the guidelines has been vital and it has been rewarding to see the level of interest and engagement from both organisations and individuals. We have listened to our stakeholders and taken a new approach to the guidelines, with an overarching goal to make them more user-friendly, concise, and accessible.

A number of significant changes have been introduced into the 2018 Quality Evaluation. One of the key changes for the 2018 Quality Evaluation is the addition of the Pacific Research Peer Review Panel to support and encourage the ongoing strengthening of Pacific research excellence.

I would like to thank our PBRF Sector Reference Group for contributing considerable time and expertise to the work, and for developing thoughtful and considered solutions to a range of issues. I would also like to thank the peer review panel Chairs and initial cohort of panel members who have developed the panel-specific guidelines very early in the process to ensure that those participating in the 2018 Quality Evaluation have the full range of information to support their submissions. These groups and TEC staff have worked hard to make the 2018 Quality Evaluation processes transparent and fit-for-purpose.

We know that the guidelines cannot provide rules and details that would address all possible circumstances that may arise during the Quality Evaluation process; however, we do expect that the intent and principles are applied by researchers and organisations as they prepare for and participate in the 2018 Quality Evaluation. The integrity of the PBRF and its international reputation can be ensured by all participating organisations demonstrating their willingness to support the Quality Evaluation process both in spirit and in detail.



Tim Fowler
Chief Executive
Tertiary Education Commission

How to use these guidelines

The panel-specific guidelines provide advice on specific areas related to the subject areas of each of the 13 peer review panels to help tertiary education organisations (TEOs) and their staff members with the processes of developing and submitting Evidence Portfolios (EPs).

This document contains 13 sections – one for each of the 13 panels, with content relevant to that panel. These sections are subdivided into specific topics that reflect the structure of an EP and are relevant to each particular panel.

The 13 panels are:

- › [Biological Sciences](#)
- › [Business and Economics](#)
- › [Creative and Performing Arts](#)
- › [Education](#)
- › [Engineering, Technology and Architecture](#)
- › [Health](#)
- › [Humanities and Law](#)
- › [Māori Knowledge and Development](#)
- › [Mathematical and Information Sciences and Technology](#)
- › [Medicine and Public Health](#)
- › [Pacific Research](#)
- › [Physical Sciences](#)
- › [Social Sciences and Other Cultural/Social Sciences.](#)

The guidelines have been developed by each panel with the primary purpose of providing advice and guidance to TEOs and their staff members to ensure submitted EPs receive the best possible assessment.

Panels have focused on providing information that:

- › is practical, useful and relevant
- › indicates what should be included as content in the different sections of the EP
- › advises on aspects of research that are non-typical for the subject area or discipline but will be considered by the panel
- › expands on rather than duplicates the main guidelines.

To enable the best evaluation of the EP, panels encourage the use of quantified and verifiable supporting data as evidence to support the submission whenever possible.

For topics where the panel-specific guidelines do not provide guidance or information, the advice provided in the main guidelines is considered sufficient.

There will be variations between the 13 sections of the panel-specific guidelines in terms of the amount or type of advice given. This reflects that there are significant differences in the research approaches and practices of the sectors covered by the 13 panels. It also reflects that the research activities of some sectors are more closely aligned than others with the general advice contained in the main guidelines, and that this creates variation in the amount and type of advice required in the panel-specific guidelines.

The advice in these panel-specific guidelines does not replace or supersede the requirements for EPs that are set out in the main guidelines.

These guidelines are supplementary to and must be read in conjunction with the main guidelines for the 2018 Quality Evaluation, which have been split into three audience-specific documents:

- › [Guidelines for tertiary education organisations participating in the 2018 Quality Evaluation](#)
- › [Guidelines for the 2018 Quality Evaluation assessment process](#)
- › [A guide for staff members participating in the 2018 Quality Evaluation.](#)

The table below shows the main audience for each document. A tick (✓) indicates that the document also contains information relevant for that particular audience.

| Audience | Guide for staff | Guidelines for TEOs | Guidelines for the assessment | Panel-specific guidelines |
|--------------------|-----------------|---------------------|-------------------------------|---------------------------|
| Peer review panels | | | Main audience | ✓ |
| TEOs | ✓ | Main audience | ✓ | ✓ |
| Staff members | Main audience | ✓ | ✓ | ✓ |

The document *Guidelines for tertiary education organisations participating in the 2018 Quality Evaluation* provides information that TEOs need to determine staff eligibility, complete EPs, understand and participate in the TEC audit process and understand the reporting of results. It also provides information about other related processes, such as submitting conflict of interest notices and complaints to the TEC.

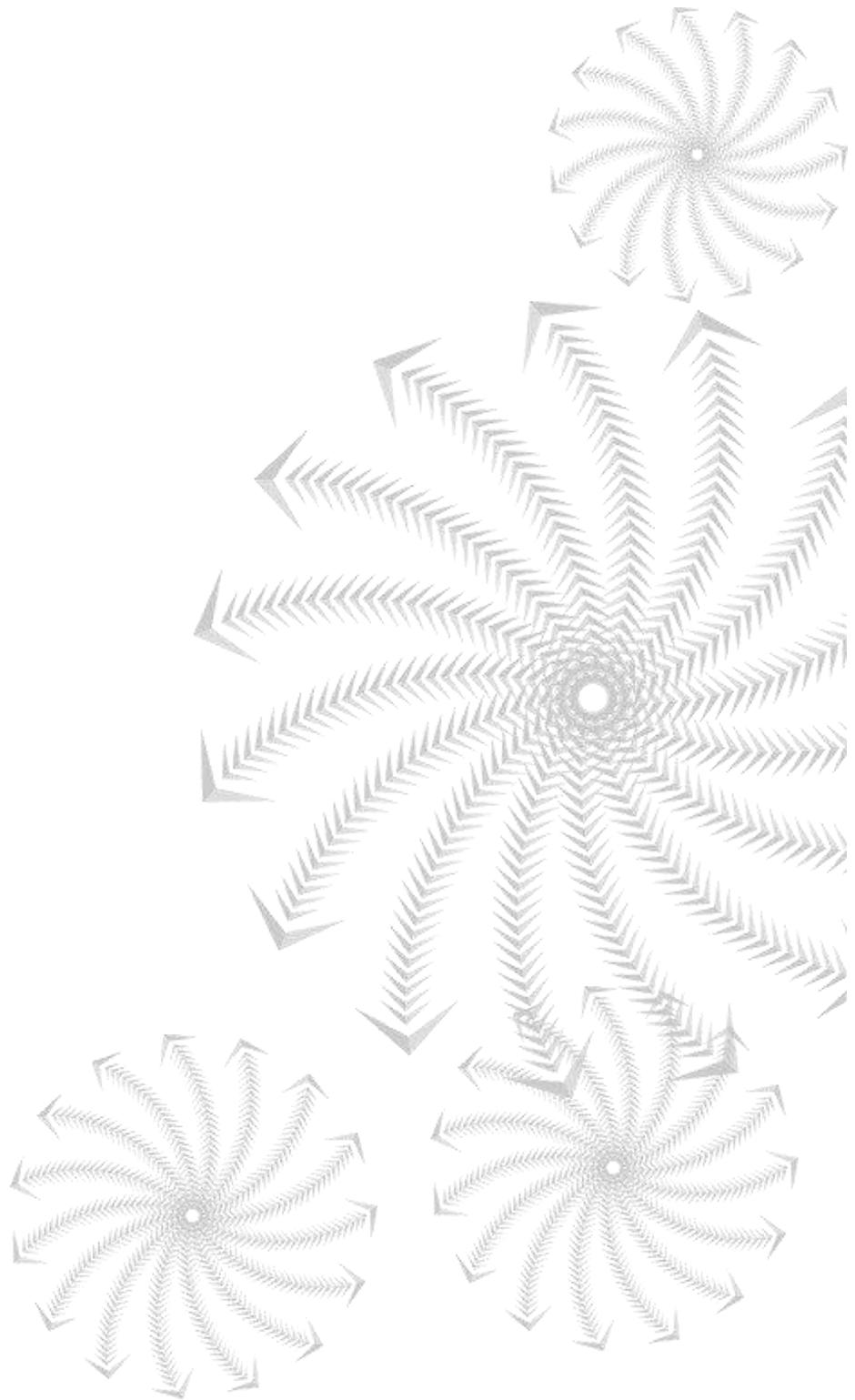
The document *Guidelines for the 2018 Quality Evaluation assessment process* is focused on providing information about the assessment process undertaken by the 13 peer review panels. This includes information on the responsibilities of the panel, the scoring system and detailed scoring descriptors for EPs, the stages in the assessment process, the moderation process and information about conflicts of interest and confidentiality.

The document *A guide for staff members participating in the 2018 Quality Evaluation* provides staff members with an overview of the process, their responsibilities and the responsibilities of their employing TEO and the TEC. It also identifies the key areas of the Quality Evaluation process that relate to them and who can provide support. The guide is designed to be an overview of the process and it directs staff members to the relevant areas of the other guidelines.

Changes to the guidelines

Any changes to the guidelines released on 30 July 2016 are set out in the table below. These changes may be included as a result of sector requests for clarification, or agreed changes to the process.

| Change | Page reference | Date of update |
|---|----------------|----------------|
| Research into farm management can be submitted to either the Biological Sciences panel or the Business and Economics panel depending on the EP content and the match between the majority of NROs and relevant panel subject areas. | pp.9, 13, 14. | April 2018 |
| Wording regarding keywords revised in the Creative and Performing Arts Platform of Research Contextual Summary section. It now reads 'four keywords' not 'the four keywords' | p. 24 | April 2018 |



Biological Sciences

Biological Sciences

These guidelines are supplementary to and must be read in conjunction with:

- › the *Guidelines for tertiary education organisations participating in the 2018 Quality Evaluation*, containing information on completing Evidence Portfolios (EPs); and
- › the *Guidelines for the 2018 Quality Evaluation assessment process*, containing information on the scoring and tie-point descriptors used to assess EPs.

For topics where these panel-specific guidelines do not provide guidance or information, the advice provided in the main guidelines on that topic is considered sufficient for submissions to the Biological Sciences Panel.

For more information, refer to *How to use these guidelines*.

Description of panel coverage

The Biological Sciences Panel will assess Evidence Portfolios (EPs) in the subject areas described below.

The descriptions should be considered a guide – they are not intended to be exhaustive.

Agriculture and other applied biological sciences

Agriculture and other applied biological sciences includes food science; biotechnology; bioactives; agricultural science; crop production; farm management; animal husbandry; agronomy, wool and fibre science; aquaculture; horticulture; viticulture; forestry studies; and fisheries science.

Ecology, evolution and behaviour

Ecology, evolution and behaviour includes animal, plant and microbial ecology; biogeography; marine biology; land, parks and wildlife; biodiversity; biophysical sustainability; pest and weed control; phylogenetics; systematics; evolution; population biology and genetics; animal behaviour; physiological plant ecology; and biostatistics and modelling.

Molecular, cellular and whole organism biology

Molecular, cellular and whole organism biology includes animal and plant physiology; cell biology; animal and plant biochemistry; molecular biology; microbiology; plant and animal genetics; genomics; bioinformatics; animal and plant pathology; immunology; pharmacology; neuroscience; developmental biology; and structural biology.

Cross-referrals

Panel Chairs can cross-refer EPs to one or more other panels. It is expected that most cross-referrals to this panel will come from the Medicine and Public Health Panel and the Physical Sciences Panel. Staff members who consider significant aspects of their research to be in subject areas covered by other panels (for example, either those with one or more nominated research outputs (NROs) that fall clearly outside the coverage described above, or whose work is interdisciplinary across the subject areas of different

panels) should use the Field of Research Description to indicate that they also work in another discipline; they should also identify the relevant NRO(s). Panel Chairs will use information entered in this field to help with assigning the EP to appropriate panel members and making decisions about cross-referrals. It is important that staff members include sufficient information in their EP to enable the panel Chair to determine whether an EP should be cross-referred to another panel.

EPs with a science/biology education focus should be submitted to the Education Panel. EPs in veterinary studies and large-animal science should be submitted to the Health Panel. EPs with research outputs that are being used primarily in medical science, clinical practice, public health and health interventions will be assessed by the Medicine and Public Health Panel. EPs with a farm management focus may go either to the Business and Economics Panel or the Biological Sciences panel, depending on the EP content and the match between the majority of NROs and relevant panel subject areas. The panel Chairs will confer on those EPs where the primary focus of the research outputs is unclear.

Note: Both the Medicine and Public Health Panel and the Biological Sciences Panel recognise the importance of the following disciplines: physiology, pathology, immunology, pharmacology, biochemistry, molecular biology, genetics, cell biology, microbiology, neuroscience, developmental biology, and bioinformatics.

Platform of Research – Contextual Summary

This section provides the staff member with an opportunity to give an overview of their research platform. Staff members may wish to provide publication metrics (such as the number of citations received or the number of papers published in the assessment period) in this section. Metrics that apply to the assessment period would be particularly useful, but all metrics should be contextualised by the staff member as part of the wider story about the quality of their research. If such metrics are given, the source used, for example, Google Scholar, should be made explicit and the panel may check the metrics given. In assessing an EP, the panel will not refer to an individual's publication metric when it is not quoted in the EP.

Research outputs

It is expected that most research outputs submitted to the Biological Sciences Panel will be formally peer-reviewed articles in respected scientific outlets describing original research.

Review articles listed as an NRO should meet the PBRF Definition of Research. They should be genuinely synthetic, critiquing the existing literature, containing original analyses or theories, outlining new insights or ideas and/or constructing new knowledge from conceptual work. Review articles that simply summarise the existing literature are not likely to meet the PBRF Definition of Research. Similarly, book reviews are unlikely to meet this definition.

It is not expected that textbooks aimed at the undergraduate level will be submitted. Any textbooks submitted must have a research component or

represent a synthetic review (as described above), which must be clearly identified.

If a new and emerging researcher chooses to include a thesis in their EP, the Biological Sciences Panel would normally expect either a PhD (or equivalent) thesis, or, in exceptional circumstances, a Master's thesis with a substantive research component.

Quality assurance

Quality assurance for this panel normally means that a research output has been peer reviewed.

Expectations for information to be provided about Nominated Research Outputs

Authors

For NROs with more than one author, an indication of what is implied by the position of the staff member in the list of authors should be given, because different subject areas and journals have different conventions.

For multi-authored papers where listing all authors would exhaust the character limit, staff members should note at least the first three author names and indicate their own position in the author list, for example, third in 20 authors, or seventh in 35 authors.

Individual contribution

The Biological Sciences Panel emphasises the importance of jointly authored papers and recognises that joint research is likely to be the norm. Where there are multiple authors, staff members must ensure that their contribution to the research output is clearly defined in the Individual Contribution section. Explicit information should be given on the staff member's contribution to the ideas involved, as well as to the implementation of different aspects of the processes involved in producing the NRO.

Description

An assessment of the scientific importance of the work will be the overriding criterion. The EP should clearly address this criterion, for example, by explaining how an NRO addresses one or more scientific questions and/or makes an impact on the scientific discipline.

For those NROs appearing in journals, information on the journal's quality, such as the relative ranking of a journal in its subfield, may offer useful contextual details. The panel, however, emphasises that while such information may inform assessment of journal quality, it is the NRO that is being assessed. If such a ranking is quoted, the source used for such a ranking should be made explicit. The panel will be aware that raw impact factors and other bibliometric measures can vary significantly between subject areas and so such numbers need to be put in context.

When a book is cited as an NRO, it will be important to identify in the Description field the contribution to original research.

Except for standard refereed journal publications, EPs should be explicit about the peer-review process used, providing sufficient detail to assure the



For topics where these panel-specific guidelines do not provide guidance or information, the advice provided in the main guidelines on that topic is considered sufficient for submissions to the Biological Sciences Panel.

panel that the process results in a quality-assured NRO. In-house reviewing processes would not normally be considered to provide quality assurance.

Evidence of the impact of an NRO should be provided, for example, favourable citation of the NRO or the uptake of the research results by end-users. Staff members completing EPs may wish to quote the number of citations the work has received. If so, the number should be put in context and the source used for this number should be made explicit. This number may be checked by the panel and the TEC. In assessing the impact of an NRO, the panel will not use any information not submitted in the EP.

Proportion of Nominated Research Outputs to be examined

It is intended that the Biological Sciences Panel will collectively examine 100 percent of NROs.

Research contributions

Staff members should be clear about their role in large collaborations, such as National Science Challenges and Centres of Research Excellence, so that their individual contribution can be assessed fairly by the panel.

Elaboration of the tie-points for the Research Contributions component

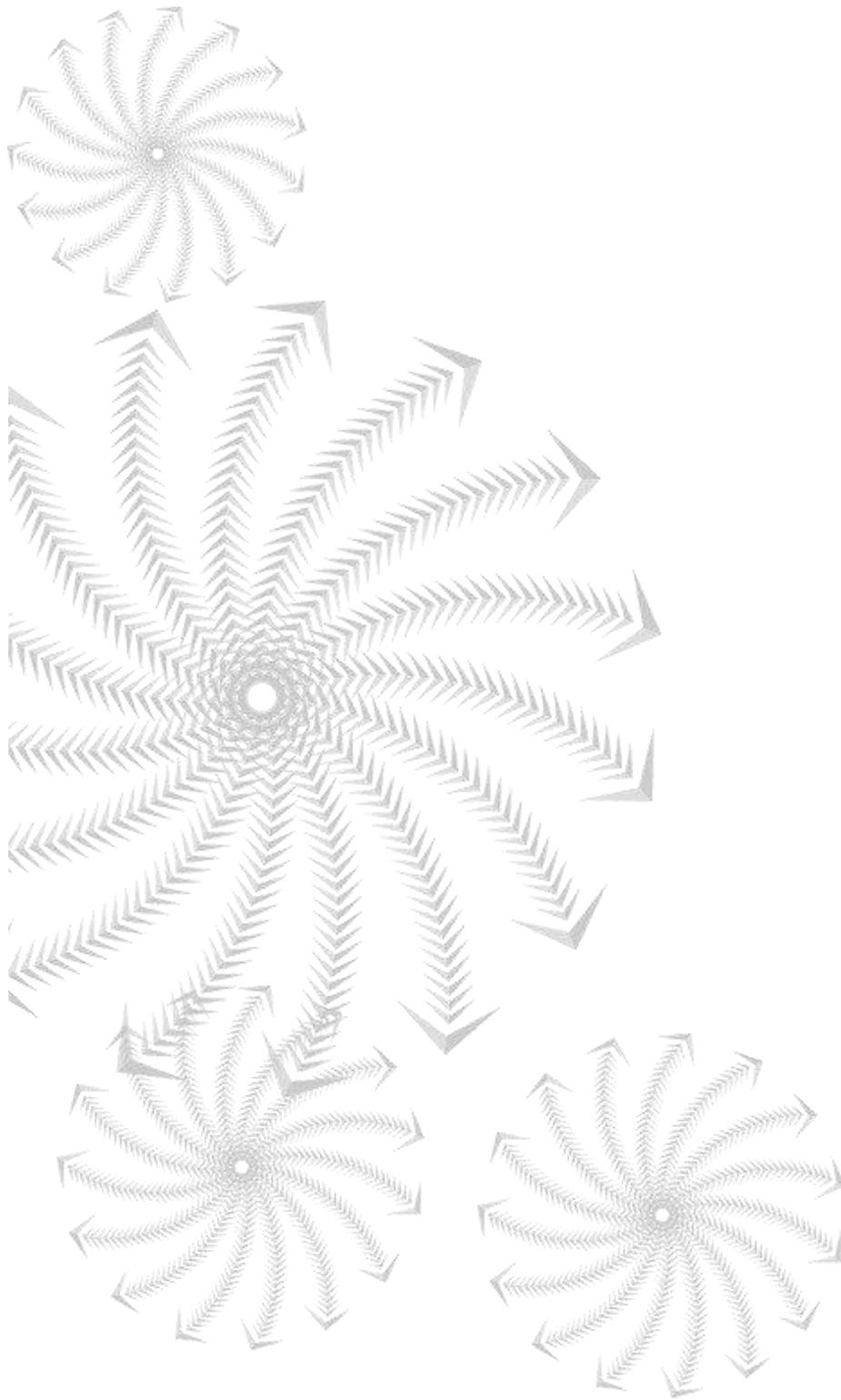
For topics where these panel-specific guidelines do not provide guidance or information, the advice provided in the main guidelines on that topic is considered sufficient for submissions to the Biological Sciences Panel.

Tie-point six

The award of prestigious research-related prizes and fellowships, plenary and other invited addresses at prestigious meetings, the facilitation of research consortia, significant uptake of scientific advances, the high-level performance of postgraduate students and postdoctoral fellows supervised, and the ability to attract high-quality postgraduate students and postdoctoral fellows can be useful in demonstrating performance at this level.

Tie-point two

May include travel grants, invitations to give talks on research, prizes (for example, best paper at a conference), organisation of scientific meetings, seminars or journal clubs, involvement in organising scientific symposia and meetings.



Business and Economics

Business and Economics

These guidelines are supplementary to and must be read in conjunction with:

- › the *Guidelines for tertiary education organisations participating in the 2018 Quality Evaluation*, containing information on completing Evidence Portfolios (EPs); and
- › the *Guidelines for the 2018 Quality Evaluation assessment process*, containing information on the scoring and tie-point descriptors used to assess EPs.

For topics where these panel-specific guidelines do not provide guidance or information, the advice provided in the main guidelines on that topic is considered sufficient for submissions to the Business and Economics Panel.

For more information, refer to *How to use these guidelines*.

Description of panel coverage

The Business and Economics Panel will assess Evidence Portfolios (EPs) in the subject areas described below.

The descriptions should be considered a guide – they are not intended to be exhaustive.

The panellists recognise the cross-disciplinary nature of business and economics research and expect that EPs could cross traditional disciplinary boundaries. The membership of peer review panels is designed to enable panels to assess the quality of research in most areas, including those that have a professional or applied outcome.

Accounting and finance

Accounting includes financial accounting, management accounting, accounting information systems, auditing and taxation.

Finance includes banking, investment and securities and insurance.

An EP with a **commercial law** focus should be submitted to the Humanities and Law Panel. EPs in **taxation** may go to either the Business and Economics Panel or Humanities and Law Panel, depending on the EP content and the match between the majority of Nominated Research Outputs (NROs) and relevant panel subject areas.

Economics

Economics; econometrics; agricultural economics; and economic history.

Management, human resources, industrial/employment relations

Management; management/organisational communication; critical management studies; employment relations; human resource management; management science, including operational research, operations and services management; decision sciences; knowledge management; organisation studies including organisational behaviour and organisation theory, public sector management, risk management, small business management and strategic management; business development; business ethics; business history;

corporate governance; innovation and entrepreneurship; international business and cross-cultural business studies; property studies; and business and society.

An EP with a **communications** focus may go to either the Business and Economics Panel or the Social Sciences and Other Cultural/Social Sciences Panel, depending on the EP content and the match between the majority of NROs and relevant panel subject areas.

An EP with a **farm management** focus may go either to the Business and Economics Panel or the Biological Sciences panel, depending on the EP content and the match between the majority of NROs and relevant panel subject areas.

Marketing and tourism

Marketing includes marketing management; marketing strategy; consumer behaviour; social marketing; marketing science; marketing theory; marketing communications; and services marketing.

Tourism includes tourism management; tourism marketing; tourism policy and planning; tourist behaviour; tourism entrepreneurship; hospitality management; tourism and hospitality education; critical tourism and hospitality.

Cross-referrals

Panel Chairs may cross-refer EPs to one or more other panels where a significant proportion of outputs listed in the Research Output component fall within the subject areas covered by another panel. Cross-referral may also occur when it is appropriate to supplement panel members' expertise. Cross-referrals may arise in relation to nearly all other panels.

Academic staff with at least one NRO in an area covered by another panel and who consider their research to be interdisciplinary should use the Field of Research Description to indicate clearly that they also work in another discipline; they should also identify the relevant NRO(s). Panel Chairs will use information entered in this field to help with assigning the EP to appropriate panel members and making decisions about cross-referrals. It is important that staff include sufficient information in their EP to enable the panel Chair to determine whether an EP should be cross-referred to another panel.

Based upon experience from the 2012 Quality Evaluation, it is expected that most cross-referrals will be with the following panels: Social Sciences and Other Cultural/Social Sciences; Mathematical and Information Sciences and Technology; Education; Humanities and Law; Māori Knowledge and Development; Pacific Research; Biological Sciences; Engineering, Technology and Architecture; Medicine and Public Health.

The Business and Economics Panel anticipates receiving interdisciplinary EPs that cross the boundaries with other panels, for example:

- › a business and economics subject area (for example, economics, management and marketing) and health economics, health services research or public health (Medicine and Public Health Panel), or psychology (Social Sciences and Other Cultural/ Social Sciences Panel) or business education (Education Panel)
- › a business and economics subject area and history (Humanities and Law Panel)

- › a business and economics subject area and Māori or Pacific knowledge (Māori Knowledge and Development Panel or Pacific Research Panel)
- › a business and economics subject area that crosses boundaries with the Mathematical and Information Sciences and Technology Panel.

These are just examples, and other combinations are also likely to occur.

Elaboration of the Definition of Research

Consultancy, case studies, applied research and research into the teaching of areas of business and economic studies, may count as research, provided that associated outputs meet the PBRF Definition of Research. For example, a research consultancy, or series of consultancies, that has involved research into current practice and that establishes new policy, paradigms, methods and/or standards that extend the body of knowledge in a given area of professional practice may be acceptable as research. Similarly, case studies accompanied by appropriate interpretation may be seen as research if these explicate or question existing theory and research or develop new theory.

Platform of Research – Contextual Summary

The Business and Economics Panel encourages all staff members to use this section of their EP to provide a rich context that helps panel members to interpret the evidence contained in the EP.

This section may make connections between different aspects of the portfolio, elaborate on different themes of research undertaken by the staff member or address the overarching research contribution to the staff member's field and the impact of the research during the assessment period.

We recommend that staff members consider the tie-point descriptors to guide the emphasis they choose to pursue in this section.

We recommend that statements in this section be explicitly connected and cross-referenced to supporting evidence elsewhere in the EP.

Research outputs

Types of research outputs

The majority of NROs submitted to the Business and Economics Panel are likely to be quality assured. Typical research outputs would include journal articles, research books, monographs, book chapters, conference contributions and discussion and working papers. Textbooks and reports for external bodies are acceptable types of research outputs, provided they meet the PBRF Definition of Research. EPs presenting non-standard NROs should make clear how the work constitutes an enquiry of a critical nature and the extent of its research contribution.

Information on the outlet quality, such as the relative ranking of a journal in its subfield, may offer useful contextual details. The panel, however, emphasises that while such information may inform assessment of journal quality, it is the NRO that is being assessed. Panel members will use their collective professional judgement to apply the PBRF assessment standards to evidence provided in the EP when assessing individual NROs. The panel confirms that peer assessment of individual output quality on a case-by-case basis is an essential aspect of the evaluation.



For topics where these panel-specific guidelines do not provide guidance or information, the advice provided in the main guidelines on that topic is considered sufficient for submissions to the Business and Economics Panel.

Quality assurance

In the case of a higher-degree thesis, additional information on the quality of the output could include comments provided by examiners in their reports.

EPs need to clearly explain the nature and extent of quality assurance for research output types where quality assurance may vary significantly and/or is unlikely to be common knowledge, for example, book chapters, conference contributions and reports. This information should be included in the Description section of the NRO.

Expectations for information to be provided about Nominated Research Outputs

Authors

Business and economics research is frequently a collaborative activity such that outputs will often have multiple authors. For multi-authored papers, an explanation of the staff member's position in the authorship list should be provided. EPs should include a narrative that is clear about the actual and specific contribution made by the staff member submitting the EP. If more than one staff member submits the same NRO, care should be taken when describing each staff member's contribution to avoid conflict between EPs. Explanations of such factors will help the panel in its assessment.

Individual contribution

Where a higher degree comprises a thesis by papers or other publications that involve multiple authors (for example, the supervisors), then an indication of the roles and relative contributions is required.

Description

Where a higher degree includes coursework, the proportion of the qualification attributed to original research should be identified. For example, if a Master's thesis is 90 credits rather than 120 credits, this information should be provided.

Elaboration of the descriptor for the Research Output component

Consistent with the view that the term "world class" denotes a standard, not a location, the Business and Economics Panel will have regard to possible constraints on access to internationally focused publication channels that may occur when research is focused on local situations, information or data.

Proportion of Nominated Research Outputs to be examined

Assessors of an EP in the Business and Economics Panel will collectively examine 100 percent of NROs.

New and emerging researchers

While PhD theses are considered the norm, Master's theses (with at least 90 credit equivalent of research) would be acceptable for submission as an NRO. Master's with industry-style projects with low research emphasis or low credit value would not normally be acceptable as an NRO.

Quality is the primary driver in assessing the research of staff members whether they are new and emerging researchers or not. While the minimum quantity of research is one output, whether this would be sufficient for the EP to be graded research active (research output score ≥ 2) or not would depend on the nature of the research (for example, likely quantum of research input

required to produce an output), the type of research output and rigour of quality assurance, and the fraction of the assessment period available for the researcher to undertake research. For example, if a new and emerging researcher completes their thesis late in the assessment period, then the quantity of research outputs expected would be fewer than if they complete their thesis and take up a PBRF-eligible position early in the assessment period. Normally, at least one research output in addition to their thesis would be expected, but for researchers starting late in the assessment a single research output may be sufficient.

Research contributions

Description

Evidence of the impact of research whether disseminated in traditional outlets, such as academic papers, or by non-traditional means, such as intellectual property (IP) or commissioned reports, could include some or all of the following (in no particular order):

- › information on how the research has stimulated further research
- › evidence of funding support for the research or its extension, including co-investment by a relevant business or other partner
- › commercialisation of the research including licensing, formation of spin-out companies and IP protection, such as patents
- › use of the research in standards or codes of practice, influence on national or international policy, strategy or statutory change
- › request for consultancy expertise or professional practice based on the research outcomes or knowledge
- › positive citations or reviews of the research including information on the number of self-citations and the source(s) and the basis of the metric(s) used
- › receipt of national and international competitions, prizes or awards
- › incorporation of new principles or methods reported in the research findings into standard textbooks and industry handbooks or guides
- › commercial, environmental or social success of the research, evident through indicators such as cost savings, sales of products or services, improved health, higher productivity, improvements to existing businesses, establishment of new businesses, new processes, new products, new services, improvements to existing products, improved quality or new employment
- › quoted testimony from clients or end-users of the research that succinctly and independently verifies the impact of the research (for example, the business or policy significance of the research outcomes)
- › for invited keynote and plenary addresses (conference contribution – other), evidence of the degree of exclusivity and importance of the forum and invitation should be provided. This might include number of attendees at the conference, total number of invited keynote or plenary speakers, basis for the invitation and selection, and financial or other support for the invitation. If the invitation was not taken up, reasons for this decision should be provided.

Where the research output assessed is non-standard or non-quality-assured, more reliance may be placed upon the actual or potential downstream impact

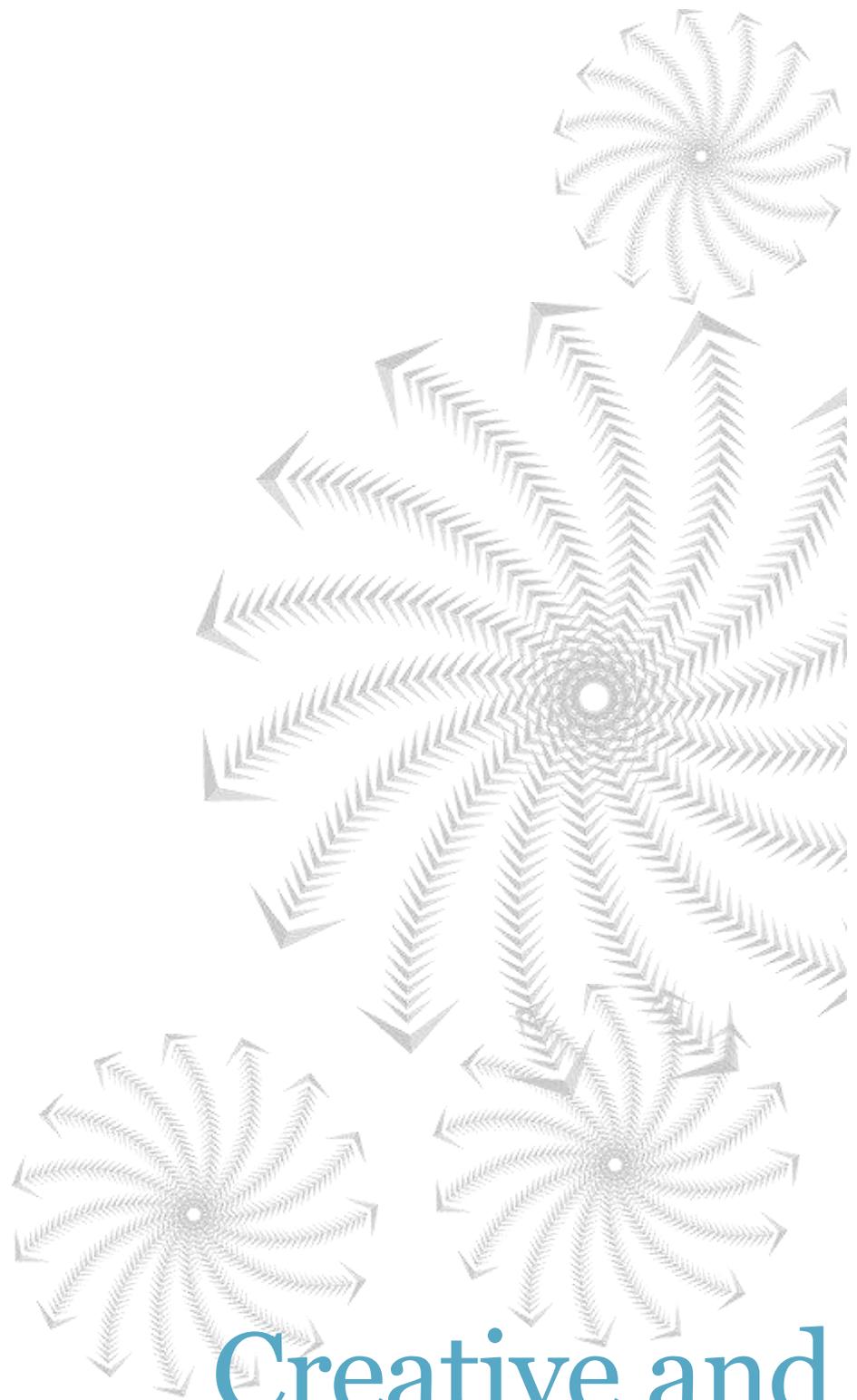
of the completed work, for example, through its influence on practice and standards in the profession, or through commercial outcomes such as new design paradigms, products and businesses. Outcomes claimed must have been measured and robust evidence attesting to these must be provided by the staff member.

The panel requires that all claims referring to impact are accompanied by demonstrable, robust and verifiable evidence.

EPs should only include evidence that is most relevant to the research. Staff are not required to include all examples listed above or in the main guidelines.

Tie-point six

Research outputs that deal with topics or themes of primarily local, regional or national focus or interest can meet the definition of world class, as this is a measure of quality not location. Research outputs may be supported by peer recognition and end-user recognition. Such works will be of the highest quality in their theoretical approach and sophistication, in their evidence or material base and use of that evidence or material, in argument, originality and presentation or creativity.



Creative and Performing Arts

Creative and Performing Arts

These guidelines are supplementary to and must be read in conjunction with:

- › the *Guidelines for tertiary education organisations participating in the 2018 Quality Evaluation*, containing information on completing Evidence Portfolios (EPs); and
- › the *Guidelines for the 2018 Quality Evaluation assessment process*, containing information on the scoring and tie-point descriptors used to assess EPs.

For topics where these panel-specific guidelines do not provide guidance or information, the advice provided in the main guidelines on that topic is considered sufficient for submissions to the Creative and Performing Arts Panel.

For more information, refer to *How to use these guidelines*.

Description of panel coverage

The Creative and Performing Arts Panel welcomes research outputs that embody original research produced by practitioners who are independently or collaboratively engaged in the creation of artistic works across the breadth of creative and performing arts disciplines in the subject areas of design; music; literary and other arts; theatre; dance; film, television and multimedia; visual arts and crafts.

The panel will be looking to recognise quality research wherever it lies and acknowledges that the outcomes of creative arts research may enter the public domain in a wide range of traditional, experimental and commercial contexts. Examples include, **and are not limited to**, public galleries, private galleries, museums, the World Wide Web, marae, theatres, concert halls, public, private, alternative and virtual spaces, as well as a broad range of public, social and culturally specific contexts.

The panel will adopt assessment processes that enables it to recognise and treat on an equal footing, excellence in research across the broadest spectrum of applied, practice-led, basic and strategic research, wherever that research is conducted and disseminated and it will look to identify excellence in different forms of research endeavour including interdisciplinary and collaborative research, while attaching no greater weight to one form over another.

The panel expects to evaluate research that encompasses practice-led, analytical, applied, ethnographical, historical, pedagogical, scientific, technological and theoretical approaches to the widest domains of the creative and performing arts and covers the broadest understanding of the subject disciplines within any cultural, geographical or historical context.

The lists that follow are intended as a guide to the breadth and scope of work the panel expects to assess. They are not exhaustive.

The panel asks all creative and performing arts researchers to attend to the preceding paragraphs, note the inclusive intention of the review process and the requirement of all researchers submitting to clearly articulate their

platform of research and the research imperative underpinning each NRO regardless of the type of work it is.

| Design | | |
|---|--|---|
| › advertising | › fashion design | › spatial design |
| › animation | › game design | › sustainability design |
| › brand design | › graphic design | › textile design |
| › communication design | › illustration | › typography |
| › design curation | › industrial design | › interior design |
| › design history/theory | › interaction and interface design | › marketing |
| › criticism/pedagogy | › product design | › performance design |
| › exhibition design | › service design | |
| › experience design | | |
| Music, literary arts and other arts | | |
| › biography | › instrument design | › screenwriting |
| › broadcast | › jazz | › software design |
| › composition | › karanga | › sonic arts |
| › critical editions | › life writing | › sound design and engineering |
| › criticism of music/literary arts | › mau rākau | › sound installation |
| › drama (across media) | › multimedia performances | › sound sculpture |
| › edited collections and anthologies | › music for gaming | › taonga pūoro |
| › electro-acoustic composition | › music, literary and other arts history/theory, criticism/pedagogy | › translations of creative writing |
| › ethnomusicology | › music production | › waiata |
| › curation and programming | › music theatre | › whaikōrero |
| › fictional prose | › musicology and analysis | › writing for children and young adults |
| › haka | › non-fictional prose | › poetry |
| › improvisation | › performance | › poi |
| | › performing editions | › popular music |
| | › play writing | |
| | › recording | |
| Theatre, dance, film, television and multimedia | | |
| › dance (all forms) | › film production | › live art |
| › choreography | › history/theory, criticism/pedagogy of theatre, dance, film and television and multimedia | › multimedia |
| › curation and programming | | › performance (all forms) |
| › edited publications | | › television |
| › film editing | › installation | › theatre (all forms) |
| | | › video |
| Visual arts and craft | | |
| › applied arts | › kowhaiwhai | › site and context |
| › artefacts | › lens-based practices | › responsive practices |
| › artworks | › live art | › social practice |

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| › ceramics | › metalwork | › raranga |
| › curation | › new genre public art | › tā moko |
| › decorative arts | › new media arts | › film/video |
| › embedded art practices | › painting | › visual art and craft history/theory/history/pedagogy |
| › exhibitions | › printmaking | › web-based practices |
| › fibre arts | › participatory art practices | › whakairo |
| › installation/all media | › performance | › whatu kākahu |
| › illustration | › photomedia | › whatu tāniko |
| › jewellery | › sculpture | |
| › kirituhi | › tukutuku | |

Cross-referrals

The Creative and Performing Arts Panel will consider EPs from a wide range of disciplines. Accordingly, membership of the Creative and Performing Arts Panel is designed to enable the panel to evaluate the quality of research taking place across the breadth of its constituent subjects, and the types and modes of investigation including research based on traditional and contemporary Māori and Pacific world views created for and shared in culturally specific contexts.

While the greatest number of portfolios will comprise creative works, the panel will also expect to review EPs that include publication in the domains of creative and performing arts history, theory, criticism and pedagogy. EPs that contain text-based outputs in any of these areas will be examined to determine their relevance to research and tertiary-level teaching in the creative and performing arts and if cross-referral to another panel is appropriate.

For example, a monograph about the history of fashion or costume design may be relevant to the practices and teaching of fashion design and sit appropriately within the creative and performing arts domain. Likewise, a book about performance design theory and related case studies would be relevant to the research and teaching of spatial design, dance, performance and theatre design.

A design that transforms the functioning of a music venue through spatial and acoustic engineering might be looked at carefully to consider a cross-referral of the output to the Engineering, Technology and Architecture Panel.

If the majority of NROs in an EP are primarily concerned with pedagogy, it will likely be cross-referred to the Education Panel. The panel Chairs will determine whether cross-referral is warranted, based on the evidence provided.

EPs that include haka, waiata, whaikōrero and haka compositions, written or recorded in te Reo Māori may be transferred or cross-referred to the Māori Knowledge and Development Panel if that is where the necessary subject area expertise lies. EPs that contain outputs related to Pacific research may also be transferred or cross-referred to the Pacific Research Panel, based on the same principle.

The panel recognises that creative and performing arts research may be undertaken in a range of different contexts, and some of these are in the descriptors of a number of other panels, including the Education Panel, Engineering, Technology and Architecture Panel, the Humanities and Law Panel, the Māori Knowledge and Development Panel, the Pacific Research

Panel and the Mathematics and Information Science and Technology Panel. We expect cross-referrals to and from these panels.

Elaboration of the Definition of Research

The Creative and Performing Arts Panel will adopt an inclusive interpretation of the PBRF Definition of Research in regard to all domains of creative and performing arts practice, including practices traditionally viewed as professional practice. The PBRF Definition of Research specifically includes the experimental development of design or construction solutions, applications, software, new programming languages and new operating systems – all of which may well take place within the context of consultancy or professional practice. The panel thus recognises that research processes may be embedded in professional design activity and that commissioned design research can involve the reinterpretation of existing knowledge for the aesthetic refinement of existing products, services or communications.

The outcome of a commercial design commission is considered research where there is evidence of a research enquiry underpinning it and, as the PBRF Definition of Research states, *the research process, involves the use of existing knowledge in experimental development to produce new or substantially improved, materials, devices, products, or communications*. The same requirement to evidence the validity of the research applies to some art commissioning processes where the client sets the brief. In each such case, the panel will be looking to find evidence of the research processes and the research content that distinguishes it as research, in accordance with the PBRF Definition of Research.

Research outputs in the creative and performing arts also include publications such as books, journal articles, essays, critical reviews, chapters in books and papers published in conference proceedings, by artists, performers, designers, and curators, as well as by historians, theorists and critics.

Series of critical reviews that demonstrate a sustained and original contribution to contemporary creative and performing arts discourse are valid research outcomes. Scholarly contributions to exhibition catalogues published within the assessment period, which are relevant beyond the period of the exhibition itself, are also valid research outcomes.

Edited volumes, such as compilations of historical material or critical readings or anthologies, will be considered by the panel as research where there is a clear research agenda that re-contextualises the content and it is expressed in an introductory or equivalent text available to the panel for review.

In the case of festival or exhibition curation, the panel is looking to distinguish between creative, research-led curatorial work and organisational or facilitation activities because both may result in exhibitions and other kinds of creative works. The panel requires evidence of research enquiry underpinning all curatorial or festival programming activities. This can be expressed in the EP narratives and evidenced in digital documentation of catalogues, catalogue essays or programme introductions, published in print form or online and available to the panel for review.

The Creative and Performing Arts Panel recognises that researchers in many of the subject areas under review will be extending and testing the boundaries of research, forms of publication and the conventions of dissemination in their

field. The panel will not advantage or disadvantage any type of research or form of output, whether it is in physical or virtual, textual or non-textual, visual or sonic, static or dynamic, digital or analogue form.

To help the assessment, it is essential that each researcher clearly communicates the platform of their research, and each NRO descriptor and commentary accurately describes the work, elucidates the nature of the enquiry, the context, the research processes involved and provides the evidence necessary for panel members to assess its quality. Evidence of any relevant external peer-review processes should be provided.

Platform of Research – Contextual Summary

The panel recommends using four keywords in the Panel Details (Description of Field of Research) section of the EP to signal the main strengths of the EP and help assignment to panellists.

The Platform of Research – Contextual Summary enables researchers to provide an overview of how their work across the period of the assessment reveals a critical and cohesive domain of inquiry and how it contributes to the relevant contexts, discourses and wider cultural domains of the creative and performing arts. It is also the place to describe how the work may have challenged or advanced modes of practice and contexts of dissemination and to highlight relevant peer esteem factors related to the research, such as external funding, commissions, awards and other relevant forms of external recognition.

This section also provides the researcher with an opportunity to include information about their specific research context that might be relevant to the assessment.

The contextual summary is also the place to showcase discipline leadership within and beyond the tertiary education organisation and to highlight contributions to the creative and performing arts sector at local, regional, national and international levels. It can also be the place to describe social, cultural, educational or economic impacts resulting from the research or the discipline contributions.

The panel will disregard self-evaluative commentary on the perceived quality of the research outputs and contributions.

Research outputs

Types of research outputs

Creative works that embody research may include, **but are not limited to**, those types of research in the subject area lists in the Description of Panel Coverage section above. The Creative and Performing Arts Panel will expect to receive a range of outputs that might be presented to other panels, and all research outputs appropriate to and recognised by the particular discipline will be considered.

For the purposes of the PBRF, the publication date of a creative work is the date that it first enters the public domain – the emphasis here is on availability. The work must have been shared with audiences.

Creative works completed during the assessment period but not yet available in published form to audiences and reviewers are not considered valid publications. For example, the manuscript of a novel, a screenplay or a theatre play that has an agent but not a publisher are not valid outputs. Screenplays or theatre plays must have been produced or presented publicly in some form during the assessment period to be considered valid research outputs. Completed orchestral, operatic, chamber or any other musical works not yet published or performed in public are not valid publications, and works of art that might have been made in advance of being exhibited are only eligible for inclusion as research outputs once they have been exhibited or otherwise made available in appropriate public contexts.

There will be occasions where *whaikōrero* as oratory within a *marae* context, and especially during *tangihanga*, cannot be recorded because of local *tikanga* that may prohibit the use of audio or video recording devices. In such cases, other forms of evidence will be required to substantiate the research, such as transcription, commentary or attestation from *kaumātua* or peers who were present during the oral presentation.

In the case of creative works that may be performed or exhibited over a number of iterations and in different types of venues, the researcher can choose which instance of the output to nominate and this need not necessarily be the first. The first public presentation of the work must be within the assessment period. Other venues can be listed to provide additional evidence of its reach. If there is evidence of significant new content or refinement of a work made during the assessment period, it can be listed as another research output.

Standard citation methods are expected for text-based research outputs, such as books, journal articles, book chapters and papers published in conference proceedings.

Formal quality-assurance processes and other evidence of quality

Formal quality-assurance processes vary between different disciplinary areas and output types.

The Creative and Performing Arts Panel will undertake an independent assessment of the quality of each NRO submitted. Alongside the panel's peer-review process, the panel will also take into consideration evidence from a range of quality measures including formal quality-assurance processes that, along with peer esteem and impact indicators, offer clear evidence of the independent judgement of others expert in the field. All kinds of evidence of independent peer review will help the panel members in their analysis of the work submitted but will not substitute for it.

Formal quality-assurance processes are those that occur before the public presentation of a work. These are many and varied across the breadth of art forms and include formal commissioning and curatorial processes, editorial and context-specific invitation and review processes. The assessment is inclusive of innovative, experimental and culturally specific research approaches some of which may not have been through formal quality-assurance processes. Accordingly, outputs that have not gone through a formal quality-assurance process before publication will not necessarily be deemed to be of lesser quality. The panel will look for evidence of quality in the work itself, supported by a range of other quality measures, such as review, citation,

inclusion in curated exhibitions or other presentations, and impact factors where relevant.

The assessment process will also be informed by the platform of research commentary, the NRO descriptions of the work and the research contribution sections of the evidence portfolio where evidence of its quality through citation, review, receipt of awards and its impact can be presented. It is up to the researcher to identify and evidence relevant external quality measures, for example, inclusion of the work in a curated exhibition or concert or festival, or acquisition for a national museum collection.

Formal quality-assurance processes include, **but are not limited to:**

- › commissions and/or funding to create works for broadcast or inclusion in national or international festivals including film, dance, music, literary and visual art festivals
- › selection for inclusion in public programmes or outlets, by curators, festival or broadcast programmers, theatrical or virtual online distributors
- › commissions by recognised institutions, individuals or companies to write, arrange, record or produce music for groups or individuals
- › invitations to devise new works and/or perform with major professional ensembles, groups or individuals
- › concerts programmed within established professional series or festivals
- › exhibitions included in the programmes of established dealer galleries
- › exhibitions in and/or the acquisition of artworks or designs by national or international museums, galleries or institutions
- › editorial processes for inclusion in film, literary, art or music festivals
- › peer review or refereeing processes employed by journal editors, curatorial committees, editorial committees or book publishers
- › invitations to curate exhibitions for recognised national or international museums and galleries
- › editorial and curatorial processes for recording and publishing music including recognised labels and reputable virtual platforms
- › commercialisation of designs
- › inclusion as a finalist in design, art, music, film or literary awards, exhibitions or screenings
- › purchased or licensed for publication by a recognised television broadcaster and/or reputable virtual platform
- › commissioned as a director, cinematographer or editor by a prestigious production company or broadcaster
- › editorial and commissioning processes for quality virtual exhibitions, publications and virtual streaming sites
- › the selection of conference papers or abstracts and the refereeing of conference papers
- › review processes specific to Māori or Pacific research processes and/or methodologies
- › review processes undertaken by major galleries, museums and broadcasters
- › review processes employed by users of commissioned or funded research including commercial clients and public bodies
- › selection processes for translation into other languages and inclusion in anthologies of multilingual works.

It is important for the panel that outputs that have not been through a formal quality-assurance process are identified as non-quality assured. This does not necessarily mean the work will be considered of lesser quality. The researcher should clearly identify all verifiable quality measures to help the panel in their assessment of the work.

- › The invention of a new mode of practice or presentation of a work in a new context may preclude a formal quality-assurance process, but other forms of peer review long after the event may evidence quality relevant to the panel.
- › An outstanding piece of music written for an amateur ensemble may not have gone through a formal quality-assurance process initially, but quality may be evidenced by esteem accrued through favourable reviews and further invitations to perform and record.
- › A manuscript, a video, a poem or a performance that is uploaded on to a website by the artist would qualify as self-publication and would be non-quality assured.
- › Self-funded exhibitions or screenings in galleries and public venues would also be non-quality assured.

Expectations for information to be provided about Nominated Research Outputs

Authors

Either sole authored/produced or co-authored/co-produced in which case the panel will expect to see an ordering of contributors in accordance with the conventions of each discipline. The roles of each contributor must be clarified in the individual contribution field and, if relevant, in the NRO commentary.

If two or more researchers claim the same output as an NRO, the panel recommends that the staff members confer to ensure the contribution statements align.

Individual contribution

In the case of co-authored, co-produced or collaborative works, the panel will assess the quality of the work regardless of the number of contributors. In this section of the EP, a brief outline of the staff member's substantial and distinctive contribution to the research process needs to be provided, as well as a description of the distinctive contributions of each of the other co-authors, co-producers or collaborators. If it is an interdisciplinary project, it is important to distinguish the nature of each researcher's discipline-specific research contribution and how it underpins the collaboration.

Once the panel has determined that there has been a substantial individual contribution to the output, it will assess the quality of the output as a whole, taking no further regard of each individual collaborator's contribution. If the panel members are not clear about the individual contributions of each of the researchers to the research process and the research output, it cannot be assessed.

If an artwork is a contribution to a festival, a curated programme of performances or a curated exhibition, a note about the specific contribution of the research output to the larger research context is relevant.

Description

All NROs and Other Research Outputs (OROs) require a detailed and accurate bibliographic description of the work, regardless of the type of work, medium or the context. Panel members will need to know the broad discipline a work belongs to, as well as the relevant details of each output and its publication context. For example, an artwork that has a social dimension might be described as live art or social sculpture and it would need a clear description of the event, the context, the participatory processes, the participants and any other information needed by panel members to recognise and understand the type, scope, scale, location, publication context and other inherent qualities of the work. This is expected as an objective description no different from that required for a craftwork where the emphasis might be on medium, materials and scale.

The four NRO descriptions need to include clear summaries of the following kinds of information – as relevant to each discipline (this is in addition to that included in the Title, Author, Output Source and Individual Contribution fields of the EP):

- › overview of the research enquiry, the research processes and the research context
- › new insights or new discourses embodied in the work
- › commercialisation of the research – how the research has resulted in new or improved products, services, communications, or businesses
- › recognition through inclusion in collections, programmes or festivals, numbers of repeat exhibitions or performances and other evidence available to help panel members to assess its quality
- › summary of peer esteem, contributions to the research environment and community or end-user impact
- › summary of relevant evidence of quality linked to the output
- › the funding sources gained to undertake the research, including formal and informal, institutional contributions, external funding and external in-kind support
- › policy, strategy or practice change introduced as a result of the research
- › summary of evidence in support of impact claims related to NROs is expected, such as statements from clients, commissioners, galleries or end-users that independently verify the reach of the work and any social or cultural impacts. It is important to cite all sources accurately to enable assessment of the independence and significance of the evidence, for a higher degree thesis, evidence might include examiner’s comments.

NRO descriptions should only include evidence that is relevant to the output. Not all of the examples listed above or in the main guidelines need to be included. For example, impact is an optional research contribution and is more relevant to some disciplines than others.

The Description field for OROs needs to be concise and only include a detailed bibliographic description of the work.

New and emerging researchers

The Creative and Performing Arts Panel recognises the nuanced research rationales embedded in many forms of creative practice, as well as the



For topics where these panel-specific guidelines do not provide guidance or information, the advice provided in the main guidelines on that topic is considered sufficient for submissions to the Creative and Performing Arts Panel.

importance of close links between academia and the creative and performing arts sector. Tertiary education organisations often employ artists, writers and designers who enter academia with already established careers outside academia. If they have a track record of publishing original creative works before their appointment they are unlikely to meet the criteria for new and emerging researchers. New and emerging researchers are often early career artists and/or designers who have recent postgraduate qualifications (for example, MDes, MFA, MMVA or PhD) and who are establishing their research careers.

In New Zealand, the terminal research degree in the creative and performing arts is normally a Master's degree. More recently, the practice-based PhD and other doctorates have been added to the suite of research degrees for creative and performing arts. They are not, however, the terminal norm for most postgraduate students. Because the customary degrees required for employment in a tertiary education organisation in New Zealand include the MFA, MDes, MMVA, DMus, DMA and, more recently, the DocFA and PhD, a new and emerging researcher in the creative and performing arts may submit the outcomes of any of the above or other relevant research degrees as valid research outputs.

Minimum evidence requirements for research outputs

The standard of evidence supplied to the panels is expected to be high. Many outputs cannot be viewed in their original form so the panel expects to see the highest quality reproductions of the work possible. We recognise that this is not ideal, because the research output may have been a live performance, an event or an exhibition. For that reason, however, high-quality still images of individual works and their installation, still and video recordings of temporal and site-based work, and quality sound recordings of performances or equivalent should be provided wherever possible for every NRO submitted.

The panel expects to be able to access research outputs submitted for assessment in digital form. It is the responsibility of each tertiary education organisation to ensure digital access to quality documentation of all creative and performing arts NROs is provided online. For consistency and equity, the panel recommends a digital portfolio in which the entire work itself (rather than proof of publication) is available to review. This might be presented in one well-crafted PDF document or an equivalent online repository. It must be easily accessible, and the panel expects to find high-quality reproductions of the work itself, documentation and recordings of performances as well catalogue essays, programme notes, CD booklets, design drawings, musical scores and links to web-based presentations of the works as appropriate. Text-based outputs, including books, monographs, journal articles, conference proceedings and book chapters must also be accessible in electronic form.

Evidence of quality assurance can be submitted as supporting information. The panel expects documentation or a digital version of the entire work not an excerpt from it.

Documentation of an artwork or exhibition would include images or video showing its scope, scale and complexity as well as high-quality reproductions of each work included. The panel will disregard any additional material, such as reviews that include evaluative commentary on the perceived quality of a research output.

Proportion of Nominated Research Outputs to be examined

It is intended that the Creative and Performing Arts Panel will examine 75 percent of all NROs in detail but will examine 100 percent if necessary to ensure the robustness of any judgement.

Research contribution

Types of research contributions

The Creative and Performing Arts Panel will consider a broad range of research contributions across the full breadth of subject areas. The three forms of contribution being considered (peer esteem, contributions to the research environment and community/end-user impact), as well as types of evidence will vary across disciplines and art forms and have different discipline emphases.

When providing information about contributions to the postgraduate environment, the panel recommends providing the following information, where applicable:

- › numbers of completions in the period by type of degree
- › level of supervision (for example, co-supervision, first or second supervisor)
- › exhibitions or performances by students you have supervised
- › awards, residencies or prizes awarded to postgraduate students you have supervised
- › co-exhibition, co-performance or co-publication with postgraduate students
- › involvement of postgraduate students in conferences, symposia or public fora as co-organisers or participants
- › research assistantships or scholarships achieved for postgraduate students
- › other research opportunities created for postgraduate students.

The panel is also interested in internal and external funding achieved during the assessment period and recognises that external funding for the arts is sometimes in the form of considerable in-kind logistical support. Independent verification and evidence of this will be considered.

The panel is interested in community and end-user impact that arises out of high-quality research, where a genuine cultural, economic, societal or educational impact can be identified and evidenced.

The range of impacts listed below is intended to illustrate the wide variety of areas in which impacts from research across the Creative and Performing Arts Panel may be found to have a clear influence on the quality of life of individuals and communities locally, nationally and internationally. This list draws on recent British Research Excellence Framework impact case studies that reveal the wealth of societal, cultural, economic and educational impacts generated through creative and performing arts research. They are indicative only, because, in practice, much of the effect will cross boundaries or go beyond them to generate new ways of thinking that also impact significantly on the development of the disciplines themselves.

All sources to verify claims of impact need to be described in the relevant research contributions descriptors. It up to the researcher to demonstrate the independence of any source of evidence and its authenticity.

Examples of impact relevant to the assessment include:

- › the enrichment of cultural life and public discourse through the creative and performing arts
- › the impacts of new music technologies and media on audience engagement
- › visitor or audience numbers that may provide evidence of the impact of art on individuals and communities
- › the impact on public understanding of the arts via events such as festivals, touring exhibitions and performances that generate public programmes, and the impact on public understanding of the arts through events such as associated symposia and conferences and related media engagement
- › recordings of existing repertoire that add value to current knowledge and appreciation
- › increased community access and enrichment of cultural experiences through pre-event talks, programme notes and other public and media commentary associated with performances, exhibitions, screenings or broadcasts
- › creation of new contexts for public engagement with the arts
- › contributions to processes of commemoration, memorialisation, reconciliation and cultural development
- › the impact of site-based art practices on how audiences engage with issues such as environmental politics, the histories of contested sites or the politics of land and place
- › the impact of hui ā iwi focusing on whaikōrero, mau rākau or tā moko as customary art forms that shape, sustain and advance Māori knowledge and development
- › the impact of art, design, music, literature and the performing arts on the profile of New Zealand culture and society internationally
- › contributions to innovation and entrepreneurial activity through the design and delivery of new products and services
- › contributions to economic prosperity via the creative sector, including publishing, music, theatre, museums and galleries, film and television, fashion, tourism and computer games
- › provision of expert advice to governments, non-governmental organisations, charities and the private sector that influences policy and/or practice
- › the impact of design on the services, practices and policies of organisations
- › the impacts of innovative product developments in collaboration with industry
- › the impact of design on public sector organisations through the development and implementation of innovative communication strategies
- › economic benefits generated by design using new technologies
- › enriched understanding of cultural traditions
- › increased public involvement in literary, musical and other forms of creative endeavour
- › the impacts of innovative design methods and research networks on the ethics and methods of the design profession
- › the impact of open source design actions on public access to design technologies and processes

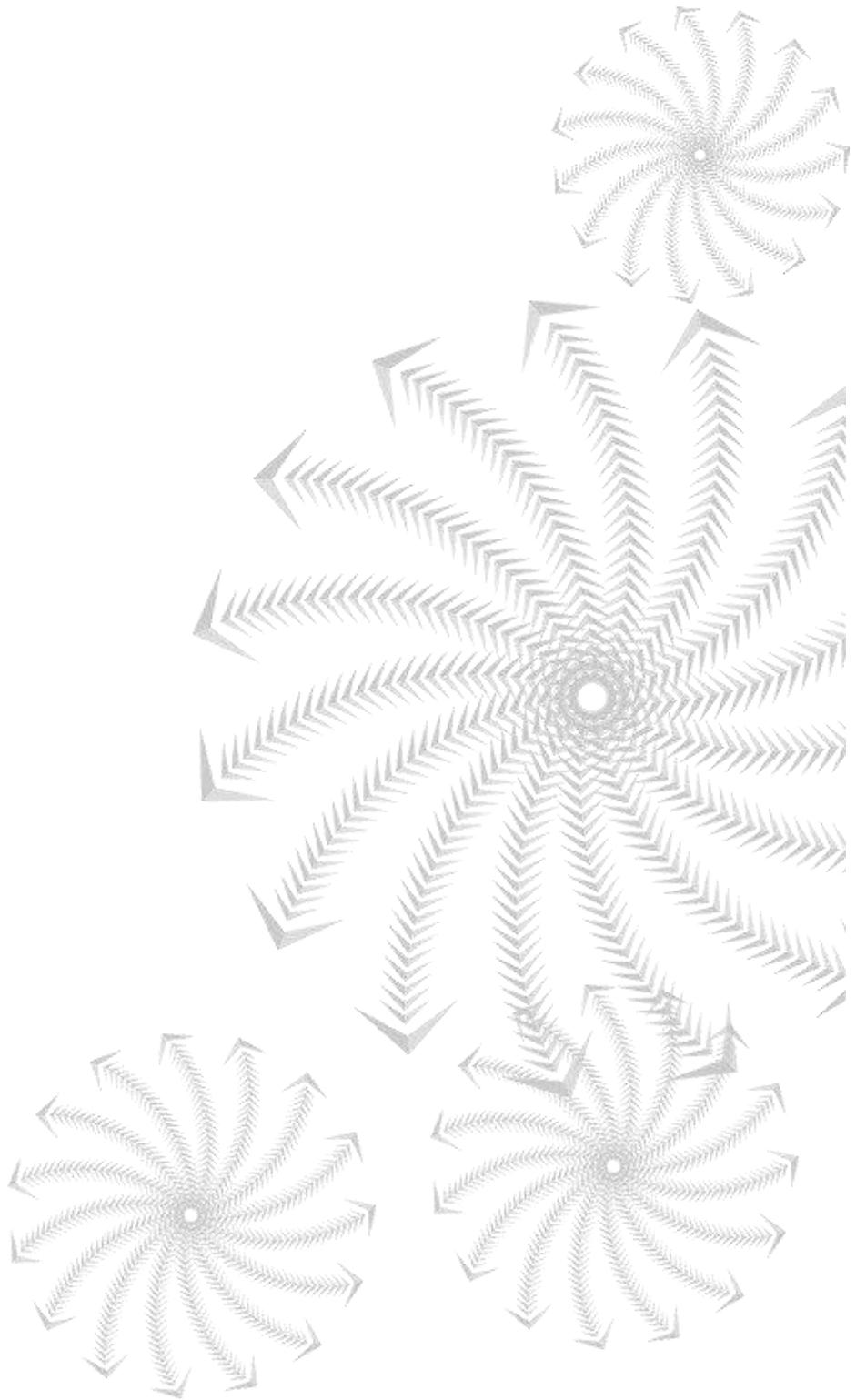
- › the impact of new expert systems that facilitate innovative community participation, organisational change, financial services and organisational communication
- › the contribution of artistic practices to public understanding of human rights and standards of health and wellbeing.

The panel recognises the limits to measuring and reporting on impact over such a short timeframe and will consider evidence of the impact of research produced before the assessment period where it is clearly relevant to the platform of research of the staff member and the impact occurs within the period of the assessment.

Elaboration of the descriptor for the Research Output and the Research Contribution components

The Creative and Performing Arts Panel recognises there are world-class venues and publication contexts within New Zealand and that research generated for local and regional New Zealand, Māori and Pacific contexts may rank with the best of its kind in the world.

The Research Contribution component of the EP identifies the contribution of the researcher and the impact of creative and performing arts research on the social, cultural and economic fabric of society, the researchers' contribution to the vitality of both the research and postgraduate environment and the esteem accorded to their research by peers at a regional, national and international level.



Education

Education

These guidelines are supplementary to and must be read in conjunction with:

- › the *Guidelines for tertiary education organisations participating in the 2018 Quality Evaluation*, containing information on completing Evidence Portfolios (EPs); and
- › the *Guidelines for the 2018 Quality Evaluation assessment process*, containing information on the scoring and tie-point descriptors used to assess EPs.

For topics where these panel-specific guidelines do not provide guidance or information, the advice provided in the main guidelines on that topic is considered sufficient for submissions to the Education Panel.

For more information, refer to *How to use these guidelines*.

Description of panel coverage

The Education Panel will assess Evidence Portfolios (EPs) in one subject: education, which covers the areas set out below. These areas are based on lists of educational research interests reflected in previous PBRF evaluations.

The descriptions should be considered a guide – they are not intended to be exhaustive. The areas covered (in alphabetical order) include:

| | | |
|--|---|---|
| › adult education | › educational anthropology | › mātauranga Māori education |
| › alternative education | › educational counselling and guidance | › multicultural education |
| › applied behaviour analysis | › educational evaluation | › Pacific education |
| › assessment | › educational leadership and management | › parent education |
| › behaviour management | › educational politics and policy | › philosophy of education |
| › bilingual education | › educational psychology | › primary education |
| › child development | › educational research methods/design/data analysis | › professional learning and development |
| › community education | › educational technology | › secondary education |
| › comparative education | › e-learning | › sexuality education |
| › continuing education | › gender and education | › sociology of education |
| › critical pedagogy | › gifted education | › special education and exceptionality |
| › curriculum studies, including studies in any subject areas taught in initial teacher education and New Zealand schools | › health and physical education | › sport and coaching education |
| › disability studies | › history of education | › teacher education |
| › distance education | › ICT in education | › teaching and learning |
| | › inclusive education | › teaching English as a second language |
| | › kaupapa Māori education | |
| | › language and literacy education | |

| | | |
|------------------------------|----------------------------------|--|
| › early childhood education | › Māori and indigenous education | › tertiary and higher education |
| › economics of education | | › other areas of educational research. |
| › educational administration | | |

The Education Panel may also consider research into other related areas where research outputs are generated primarily within education paradigms. This could include, for example, nursing education, speech and language therapy education, professional education and development of human services personnel, second language learning, and English as a second language (ESL), particularly if the discipline of education is a major focus.

Cross-referrals

Academic staff with at least one Nominated Research Output (NRO) in an area covered by another panel, and who consider their research to be interdisciplinary, should clearly indicate that they also work in another discipline in the Field of Research Description. Information entered in this field will be used by panel Chairs to help with assigning the EP to appropriate panel members and making decisions about cross-referrals. It is expected that most cross-referrals between the Education Panel and other panels will be with the following: Humanities and Law; Social Sciences and Other Cultural/Social Sciences; Māori Knowledge and Development; Pacific Research; Health; and Creative and Performing Arts.

It is important that staff include sufficient information in their EP to enable the panel Chair to determine whether an EP should be cross-referred to another panel. Just as an EP should be submitted to the Education Panel where education is the major focus of the work, it will generally be more appropriate for an EP to be submitted to the subject-specific panel unless education-related outputs are the major focus of the EP. For example, an EP with a focus on human development or social psychology submitted for review by the Social Sciences and Other Cultural/Social Sciences Panel (which includes the discipline of psychology) could potentially be cross-referred by that panel Chair to the Education Panel where evidence of at least one NRO related to education has been documented in the EP, and the Field of Research Description signals an education focus for some work.

Where an EP has a focus on the creative and performing arts such as art, drama or dance, and/or a curriculum subject area such as English, social science, science, mathematics or health and/or physical education, but where the context is primarily education/teacher education, the following guide should apply:

- › If the NROs are primarily concerned with the pedagogy of education in relation to the particular curriculum area, even in the context of an exhibition or a performance, the EP should be assessed by the Education Panel; the Chair will determine whether a cross-referral to the Creative and Performing Arts Panel or another relevant subject-specific panel (for example, the Health Panel) is warranted based on the evidence provided.

This does not prevent staff members whose subject-specific research also addresses pedagogy from submitting their EP to a subject-based panel through their tertiary education organisation (TEO).

Elaboration of the Definition of Research

In education, some research may emphasise an applied focus on informing professional practice and educational systems in New Zealand and/or in international arenas. Such work is entirely appropriate, and the main consideration is the extent to which the work meets the PBRF Definition of Research, including the scholarly significance of the output and evidence of quality assurance.

A report of classroom practice would not be considered research unless the output is analytical, carried out systematically and set in the context of other research, for example, a research-led, systematic investigation into professional practice using action research or design-based implementation research. This type of research could potentially include evidence of impact on educational, school and classroom practices nationally and/or internationally. A description of classroom activities or an initiative where there is no evidence of a systematic research approach or critical analysis would not be considered research. Preparation or revision of curriculum documents is not normally regarded as research, but an investigation of the intellectual processes involved in their development and the consultation of other research literature may be considered research.

Preparation or revision of a standard text – particularly one intended for teaching undergraduates not engaged in research – that lacks evidence of critical analysis and innovation, or explicit consideration of different ideas, is unlikely to meet the requirements of the PBRF Definition of Research. Preparation of a text – particularly one intended for use by postgraduate students engaged in research – that analyses and/or synthesises the latest information in the field, discusses controversies, guides student understandings in critical analyses and is underpinned by authoritative referencing, is likely to count as research. Evidence of the quality of a research text prepared for postgraduate students may include information about adoption as recommended reading at postgraduate level in institutions of higher education in New Zealand and internationally.

Research outputs specific to New Zealand settings are valued, particularly because they increase the potential for New Zealand educational research to make a difference for children, students and teachers in this country. Meeting the standard for A and B Quality Categories does not specifically require publishing internationally but does require, in all instances, publishing at a world-class standard.

Published research may be specific to New Zealand policy and/or practice but nevertheless have clear reach and impact in education contexts outside New Zealand.

Platform of Research – Contextual Summary

The Platform of Research – Contextual Summary enables researchers to elaborate how their work across the assessment period forms a cohesive, critical and original area of inquiry that contributes new knowledge and

understandings in education. For applied areas of educational research, in particular, this section should highlight how published work builds systematically on previous research, is guided by theory and contributes to knowledge and understanding relevant to education in and/or outside of New Zealand. This can also be the place to showcase how one's research on policy and practice carried out within New Zealand schools and other education-related systems has been conducted to make original contributions to knowledge and understandings outside of New Zealand. An example of this could be analysis of Māori education research in the context of developments in indigenous education internationally.

Scholars may also wish to highlight educational roles undertaken in New Zealand and/or internationally that represent recognition of their contributions to scholarship. Such contributions do not need to be focused within one field of study or discipline – interdisciplinary work is also acknowledged and recognised. How such work contributes and/or links to a wider research platform should be made clear.

This section also provides staff members with the opportunity to include information about their specific research context that is relevant to assessment. Such information could include employment status, such as part-time employment, major proportions of full-time equivalent staff (FTE) assigned to providing professional development to schools or early childhood centres, sub-degree programme level teaching, and/or factors regarding the nature of their TEO that could restrict opportunities for postgraduate supervision or other research contributions.

Research outputs



For topics where these panel-specific guidelines do not provide guidance or information, the advice provided in the main guidelines on that topic is considered sufficient for submissions to the Education Panel.

Types of research outputs

An example of a non-typical research output in education in addition to those listed in the general guidelines would be an original app developed for use with smartphones or other electronic devices. As an original piece of software developed by the researcher, the app itself would count as a research output, whereas use of the app in a teacher education programme would be standard practice and not research (although an investigation of effectiveness comparing different approaches using an appropriate research method would be counted as research).

Researchers are cautioned against including research outputs that are duplicative publications. An example of this is subsequent publication of a doctoral thesis by a commercial publisher without any substantial revisions, re-analyses and/or updating since publication of the original PhD or EdD thesis whether listed in this or an earlier assessment period. This does not preclude publication of different types of research outputs based on research completed as part of postgraduate research theses, including for example a monograph, chapter or article based on the thesis research. Provided they differ substantively from the thesis itself, these would count (and even be encouraged) as valid research outputs. In general, educational researchers should follow ethical guidelines for authors in the social sciences regarding the publication of various outputs based on previous writings and research data.

The quality of education research outputs can be demonstrated in a number of ways, including influence on other researchers working in similar areas, as well as

impact on curriculum development, education policy, practice and/or outcomes for students. Evidence of the quality of work in a thesis (Master's or doctoral) could comprise comments about the significance, importance and/or originality of the work by, for example, an international examiner prominent in the field.

The quality of applied educational research may be supported through outcomes evidenced from the clear dissemination role that may involve demonstrating the practical significance of the researcher's work. The focus of educational research is often about making a difference in educational policy and practice for families, children, students and teachers, and citation indices do not generally measure these impacts. Where appropriate, education researchers may provide other evidence of impact such as the adoption of a researcher's innovation in policy and practice.

For some areas in education, citation indices may provide evidence that, for example, one's theoretical interpretation or innovative approach to data analysis has had a broader impact on others' research. An author citation metric, such as the *h*-index, is neither particularly well suited to nor commonly used in education, particularly for subfields with small numbers of researchers working in a particular area. Such information is not expected but may be included for some subfields of education (for example, educational psychology) if deemed appropriate.

Although citation information from a source such as Google Scholar may be included where deemed appropriate, this may be most relevant to publications early in the current assessment cycle because these are likely to have had the necessary time to generate citations.

Evidence of quality for outputs, such as journal articles, is most likely to be journal rankings and the acceptance rate for particular journals. Where journals have different rankings under different systems, it may be most useful to indicate in which quartile the journal is ranked. Where journal rankings may be affected by the "size" of a particular subdiscipline or specialisation, the relative position of a journal in a particular topic area should also be included for consideration.

Quality assurance

In education, it is expected that most research outputs submitted will be quality-assured although non-quality-assured outputs may also be included. Such quality assurance includes the usual formal review processes for journal articles, for example, and/or evidence of appropriate and robust quality-assurance processes for other outputs.

The quality-assurance process in education will reflect the different research output types and may also vary based on the funding source for the research. Evidence of quality assurance will include peer review for journals and conference papers, peer review and referee reviews of books, exhibitions and so on, and other equivalent quality-assurance processes. For journal articles, information about the rigour of the editorial review process and standing of members of the editorial board may provide needed information regarding quality assurance. Similarly, a commercial book publisher is likely to employ independent reviewers with internationally recognised expertise in the research area before publishing authored or edited books and collections.

Where research has been sponsored by external funding bodies, both internal expert and external peer review before publication of reports may provide evidence of quality assurance. For example, research funded by the Ministry of Education or other government bodies is likely to be subjected to an internal agency quality-assurance process, such as being reviewed independently by subject experts within that agency.

Quality assurance for funded research reports may be supported more strongly by information that the funding agency has contracted with nationally and/or internationally recognised experts from outside the agency to review work before its release and publication. Final published research reports will likely hold more weight than interim project reports that are less likely to have been subjected to a rigorous quality-assurance process.

In summary, staff members are expected to explain how quality has been assured in the Description field of the NRO. This is particularly important where a non-standard quality-assurance process has been used, for example, in relation to a practice-based research output (for example, a commissioned report) or creative research output (for example, film, video or exhibition).

Expectations for information to be provided for research outputs

Authors

Different areas of education differ considerably with respect to whether publications are sole-authored, co-authored or reflect collaborative research conducted by a team of researchers. In certain areas of education, most research outputs are likely to be sole-authored, reflecting the nature of critical synthesis and analysis (for example, philosophy of education). Senior scholars in all areas of education would normally be expected to have some sole-authored outputs, to reflect the researcher's original, theoretical and/or critical independent contributions to knowledge and understanding in the field.

It is important to emphasise, however, that much research in education is likely to be co-authored by two or more scholars given that research in education is often collaborative, labour-intensive, involves multiple research sites and participants, thus requiring a team working together and sharing intellectual property.

Where there are multiple authors on a research output, the order of authorship generally reflects conventional practice in the social sciences, with the first author having primary intellectual responsibility for that output and co-authors reflected in descending order for contributions from second to last authorship. There may be exceptions to this. Where authorship order does not reflect a social sciences conventional approach, the researcher should provide an explanation in the Description field for that NRO to enable the panel to judge authorship order appropriately. There may also be instances where supervisors publish with postgraduate students on some aspect of the thesis research, in which case the supervisor usually assumes second authorship.

In education, both sole-authored and collaborative authorships are valued. It is expected, however, that research outputs show an appropriate balance of these depending on the researcher's area. Attaining higher grades in the evaluation process will require evidence of the appropriate levels of contributions, such as being first author of highly regarded research for at least some of the scholar's research outputs.

Individual contribution

For education, it will be crucial that NROs include qualitative information regarding the specific research-related, intellectual contributions of each author on co-authored publications. Collaborative research requires diverse contributions throughout both the research and publication processes, so that there should be agreement across authors (and their EPs) regarding the nature of the different contributions each co-author has made to the final research output. Each co-author should describe in narrative form the specific contributions made by them to the research and/or publication process for that NRO. Where more than one co-author claims a particular NRO, panel assessors may check these contribution statements for alignment to ensure that scoring accurately reflects intellectual input into a research output.

New and emerging researchers

If a new and emerging researcher chooses to include a thesis as an NRO or research output in their EP, the Education Panel would normally expect the thesis to be a research Master's or doctoral (PhD or EdD) degree qualification.

Elaboration of the descriptor for the Research Output component

In education, an EP that meets the standard for an A Quality Category would be expected to provide evidence that the research outputs have made substantial, significant and original contributions towards the development of new knowledge, understandings, theoretical interpretations and/or methodological advances in their field. Highest scores are given to those EPs that present evidence of a quality research trajectory and productivity at the highest levels throughout the assessment period.

Proportion of Nominated Research Outputs to be examined

It is intended that the Education Panel will examine at least 50 percent of NROs, with a higher percentage examined where appropriate and necessary.

Research contribution

Types of research contributions

Educational researchers need to ensure that the research contributions listed in the EP relate specifically to the scholar's research and research publications, rather than relating to one's professional practice and/or teaching, which also represent areas where researchers can attain excellence and recognition. This principle relates to each type of research contribution and to all items submitted in an EP under one of the 12 types. An award or other recognition for excellence in teaching should not be listed in the EP under the Research Contribution component, just as leading the development of a degree programme in a particular area is not a research contribution.

A leadership role in a postgraduate programme with a research focus could be appropriate for inclusion, as might be a major role on an ethics review committee for the approval of research with human participants. Similarly, an invitation to take up a particular position or appointment must be clearly tied to one's research rather than one's administrative or management expertise, regardless of how prestigious the recognition might be.

Evidence of such research contributions should be verifiable, such as evidence of joint research grant proposals for external funding, publications, projects and/or specialised national or international symposia.

In education, evidence of uptake and impact could comprise verifiable references to one's research in agency or government policy documents. Further, the outreach and engagement research contribution type is well suited to education in providing an excellent place for scholars to include information regarding recognition of their role as "critic and conscience" of society through significant analyses of developments of educational policy and practice locally, nationally or internationally.

Staff members must make clear how each item included in the EP in this section is indeed a research contribution, to ensure that items will not be confused with performance in another area (such as teaching or standard professional practice).

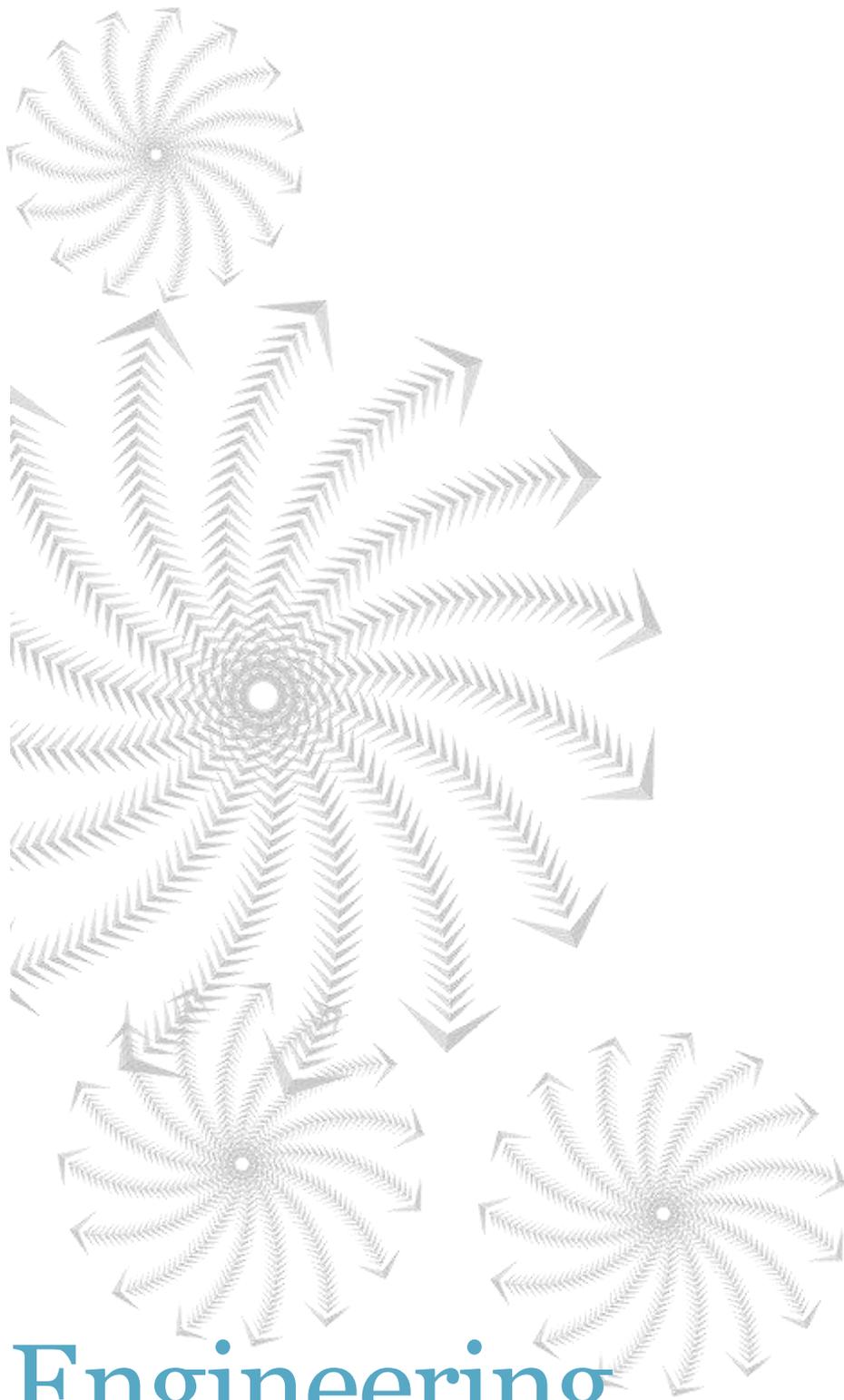
Elaboration of the descriptor for the Research Contribution component

In education, an EP that meets the standard for world-class research contributions would be expected to provide evidence of substantial, significant and sustained contributions resulting in enhanced capability for research in education that meets international standards of excellence. An example of this might be major academic editorial responsibility for a journal or encyclopaedia of world-class standard.

EPs will be awarded the highest marks where there is balance in the overall EP, such that the research contributions documented are commensurate with the level of excellence reflected in the Research Output component. This requires evidence of consistent research leadership, mentoring of colleagues and students, building of national and/or international research networks and collaborations, leadership contributions to the development of the field nationally and/or internationally, impact on educational end-users (for example, policy, practice) and providing research leadership support towards growing research capacity in various educational contexts in New Zealand and New Zealand TEOs.

An A Quality Category EP would normally be expected to demonstrate a strong record in supervising doctoral students and post-doctoral fellows to completion, with evidence that graduates have gone on to become productive researchers and educational leaders. A B Quality Category EP would normally be expected to have successfully supervised a number of postgraduate research thesis students to completion. Even if there may be institutional or subdiscipline contextual constraints on opportunities to engage in postgraduate supervision, both A and B Quality Category EPs can be expected to demonstrate involvement in mentoring new and emerging researchers and less senior colleagues towards enhancing their overall research profile.

Being research active and the award of a C Quality Category in education also requires evidence of research contributions towards enhancing capability in educational research. To be awarded a C Quality Category, EPs would normally be expected to show appropriate and growing research contributions. This may include involvement in reviewing for scholarly journals, postgraduate supervision (at the Master's and sometimes doctoral levels) or mentoring and support of developing researchers, or other recognised impacts, during the assessment period. In all cases, a C Quality Category requires research contributions beyond expected membership on research or postgraduate education-related committees, regardless of the quantity of entries.



Engineering, Technology and Architecture

Engineering, Technology and Architecture

These guidelines are supplementary to and must be read in conjunction with:

- › the *Guidelines for tertiary education organisations participating in the 2018 Quality Evaluation*, containing information on completing Evidence Portfolios (EPs); and
- › the *Guidelines for the 2018 Quality Evaluation assessment process*, containing information on the scoring and tie-point descriptors used to assess EPs.

For topics where these panel-specific guidelines do not provide guidance or information, the advice provided in the main guidelines on that topic is considered sufficient for submissions to the Engineering, Technology and Architecture Panel.

For more information, refer to *How to use these guidelines*.

Description of panel coverage

The Engineering, Technology and Architecture Panel will assess Evidence Portfolios (EPs) in the following subject areas.

These descriptions should be considered a guide – they are not intended to be exhaustive.

The specialisations listed for one area may also be relevant for other areas. All areas can include pedagogic research and research with Māori and/or Pacific perspectives.

Architecture, design, planning and surveying

This subject area includes but is not limited to:

Architecture including design, history/theory/criticism; professional practice; urban design; construction management and technologies; digital design; structures and materials; manufacturing processes; sustainability; ecology; communication; exhibition; and social, cultural, economic and human factors.

Urban and regional planning including history/theory/criticism; professional practice; sustainability; ecology; urban design and morphology; governance; and social, cultural, economic and human factors.

Interior architecture/design including spatial and furniture design; history/theory/criticism; professional practice; exhibition; performance; construction management and technologies; structures and materials; manufacturing processes; sustainability; communication; social, cultural and human factors; and facilities management.

Industrial/product design including design; history/theory/criticism; professional practice; manufacturing processes; interactive design; sustainability; communication; and social, cultural, economic and human factors.

Landscape architecture including design; history/theory/criticism; professional practice; construction technologies; structures and materials; landscape

planning and assessment; sustainability; ecology; communication; and social, cultural, economic and human factors.

Building economics and management including professional practice; construction management and technologies; structures and materials; sustainability; facilities management; and social, cultural, economic and human factors.

Building science including design and assessment; construction management and technologies; structures; manufacturing processing; sustainability; ecology; facilities management; and social, cultural, economic and human factors.

Surveying including photogrammetry and land management.

Engineering and technology

This subject area includes but is not limited to:

Chemical and process/materials engineering including biomedical; biochemical; bioengineering; biotechnology; chemical reaction; transport phenomena; food and bioprocessing; fibre and textile processing; fuel technology; energy; sustainable processing; environmental; petrochemical; mining; particle technology; nanotechnology; extractive metallurgy; and thermo-physical processes.

Civil engineering including construction technology; project management; fluid mechanics; hydraulics; hydrology; geotechnical; environmental; structural; earthquake; materials; transportation; pavement; resource management; marine, river and coastal; natural resources; forestry; fire; urban infrastructure; energy generation; and natural hazard mitigation.

Electrical and electronic engineering including communications (such as mobile, satellite, networks); electronic materials and devices; micro-electronics; electronic systems and circuits; optoelectronics and optical communications systems; multimedia; video and audio processing and coding; signal processing; radio frequency; microwave and millimetre wave techniques; sensors; mechatronics; robotics; biomedical; electrical power; machines and drives; computer engineering; power electronics; embedded systems; instrumentation; and microtechnology and nanotechnology.

Mechanical and production engineering including acoustics; noise and vibration; aerodynamics and aeronautics; biomedical; energy conversion; automation; fluid power and fluidics; dynamics; engineering design; engineering management; hazards; heat transfer; industrial design; manufacturing; materials; wind; product design; solid mechanics; structural integrity; fatigue and failure analysis; thermodynamics and fluid mechanics.

Engineering science including mathematical modelling; computational methods; probability and statistics; continuum mechanics; optimisation; and theoretical fluid mechanics.

Technology including food technology; fibre and textile technology; production technology; product development; quality systems; logistics and supply chain technology; and agri-tech.

In all of the above areas, specialisations include ethics, safety, control and systems engineering.

Cross-referrals

Panel Chairs can cross-refer EPs to one or more other panels. It is expected that most cross-referrals to this panel will come from the following panels: Biological Sciences; Creative and Performing Arts; Mathematical and Information Sciences and Technology; and Physical Sciences. This panel expects cross-referrals from the Mathematical and Information Sciences and Technology Panel for EPs with Nominated Research Outputs (NROs) and significant research contribution items in the software engineering field if a focus of the research is embedded systems, computer hardware or software development that results in, or is part of, a product or artefact.

It is expected that most cross-referrals from this panel will be to the following panels: Business and Economics; Creative and Performing Arts; Education; Māori Knowledge and Development; Mathematical and Information Sciences and Technology; and Physical Sciences. This panel will consider cross-referral to the Creative and Performing Arts Panel for an EP with NROs and key research contribution items in the industrial design field where there is a significant aesthetic, as well as a functional aspect, to the research. This panel will consider cross-referral to the Mathematical and Information Sciences and Technology Panel for an EP with NROs and major research contribution items in the software engineering field where the research focus is algorithmic development, programming languages, software interfacing and/or formal verification. This panel will consider cross-referral to the Education Panel for an EP with research outputs that focus predominantly on pedagogy rather than discipline-specific aspects of education.

Elaboration of the Definition of Research

Research undertaken individually or collectively, leading to the definition or refinement of standards or performance criteria, is an accepted form of research. Research involving the discovery, development and novel application of analytical techniques is also accepted.

Client-sponsored research, whether professional practice or consultancy, is recognised as an integral component of the engineering, technology and architectural disciplines. For these activities to be considered research, the original contribution needs to be documented, for example, establishing new methods, policy, guidelines, paradigms, benchmarks and/or standards that extend relevant bodies of knowledge. Rigorous and transparent evidence to show the activity meets these requirements must be supplied (for example, peer review in the form of publication by third parties, deliberate and planned assessment of the improvement developed, prizes, testimonials noting the assessors status, relationship to the researcher and any conflicts of interest).

Where the client-sponsored research activity results in new designs (either conceptual designs or physical artefacts) or performance works, such outputs must be clearly identified as innovative contributions to an area of design or technology, including aesthetic innovation or refinement, with evidence given as to how they depart from established concepts and practice. The aspect of creativity and innovation should be demonstrated (for example, through publication by third parties, award of patents, prizes, published peer review or public exhibition of works, and/or the successful commercialisation of the

design or technology). Routine production of designs following established concepts will not normally qualify.

Developing databases of routine engineering, technology or architecture information and practices would not generally be acceptable as research without a demonstrable research component being involved in producing some particular innovative feature and peer review or other independent validation of quality (which should be clearly outlined in the Description field of the NRO).

Platform of Research – Contextual Summary

Information in the Platform of Research – Contextual Summary and up to four keywords in the Panel Details (Description of Field of Research) sections of the EP should be used to clearly identify the main strengths of the EP and to help assignment to panellists. They can also signal components of the EP that may require assessment by panellists with commercial, environmental, professional practice or social impact knowledge and experience and possible cross-referral to other panels.

For example: a chemical engineer might have research in both environmental engineering and nanotechnology fields but has also made developments in engineering education and has undertaken product commercialisation. Thus, the Panel Details (Description of Field of Research) section of the EP might list the following keywords: environmental engineering; nanotechnology; commercialisation; engineering education.

Researchers whose quantity of research is impacted because they started research late in the assessment period can provide this information as part of the Platform of Research – Contextual Summary.

The panel recognises disciplines and specialisations beyond the lists provided. If a research focus is not listed, the appropriate keywords can be included in the Description of Field of Research. In addition, research within one EP may not be directly related. For instance, in architecture, an EP might be submitted that includes research outputs in both theory and sustainability.

The Engineering, Technology and Architecture Panel would consider the following useful to judge the full platform of research:

- › a brief summary of the total publication record for the assessment period (including research outputs not included in the EP) that may use metrics such as total number of research outputs and categorisation by research output type (taking into consideration the 2,500 character limit of the Platform of Research – Contextual Summary field).
- › a summary of the research contributions focusing on evidence of peer esteem, contribution to the research environment and impact of the research. Summary metrics such as *h*-index or similar may be provided.

If metrics are cited, the EP should contextualise the citation within a discipline or subdiscipline. Staff members should provide such relevant contextual information, because there is no agreed list of journal rankings in New Zealand or Australia in most disciplines.



For topics where these panel-specific guidelines do not provide guidance or information, the advice provided in the main guidelines on that topic is considered sufficient for submissions to the Engineering, Technology and Architecture Panel.

Research outputs

Types of research outputs

The following examples of research outputs will be considered in addition to the examples of research outputs listed by type in the main guidelines.

- › Creative works:
 - curated exhibitions of artefacts and design outputs including contributions to catalogues and curatorial organisation
 - designs or design artefacts, such as buildings, prototypes, products or software
 - design or architectural work, including realised, constructed, fabricated (of permanent or temporary nature) or unrealised building and design projects
 - textural creative works including collections of professional journal or magazine articles that show a sustained and original contribution to critical architectural and design practice discourse, scholarly contributions to published exhibition catalogues, scholarly editions or translations and critical reviews of built and conceptual works.
- › Edited volumes:
 - editorial contributions in relation to compilations of research publications (for example, substantive introductory chapters).
- › Journal article:
 - review articles in journals would be applicable as research outputs only if they critically review a body of work to provide an original interpretative synthesis, practice roadmap or consensus statement for the field or discipline.
- › Other form of assessable output:
 - design standards or other standards, codes of practice, or design guidelines that are attributable to individuals and contain, or are based on, original research. The term “standard” is restricted to outputs promulgated through an international or national process administered by an authoritative body; the term “code of practice” refers to a method accepted, promulgated and applied widely within a professional practising community; and the term “design guideline” is used to describe a practice identified and recommended by a formal group of practising professionals as being a good practice. If the research is separately reported, then its use in developing the standard, code of practice or design guideline may be considered as a research contribution item.
- › Reports:
 - commissioned analyses, reviews and policy advice for public or private bodies or non-governmental organisations that are informed by original research are acceptable even if they are confidential rather than available in the public domain.

Where the same work has multiple outputs covering the same material (for example, a technical report on a commissioned piece of research **or** a conference contribution **and** a peer reviewed journal publication), only one should be included in the EP as a research output.

Where the same work has related outputs that are different (for example, one research study with multiple publications), it may be appropriate for more than one to be selected as an NRO. The panel, however, still recommends care in NRO selection to avoid duplication and facilitate assessment of the breadth of the staff member's platform of research.

Quality assurance

For all refereed NROs, evidence of the extent and rigour of the review process should be provided. Reviewing processes within the author's organisations (in-house) would not normally be considered to provide quality assurance unless their independence from the authors and discipline expertise can be demonstrated.

Expectations for information to be provided about research outputs

Authors

The Engineering, Technology and Architecture Panel will not make any assumption of contribution based on author order. Where there are multiple authors, staff members must ensure that their contribution to the research output is clearly defined in the Individual Contribution section. In cases where co-authors include the same NRO in their EPs, staff members are encouraged to confer about the details of their contributions, to ensure there is no conflict in the information provided. Jointly produced research outputs of whatever form need to be assessed to determine the specific role and contribution of the staff member with a focus on intellectual and creative contributions, for example, creator or inventor of significant intellectual or creative concepts, ideas or hypotheses, senior author, research leader, student, advisor, methodology developer or results analyst.

The Engineering, Technology and Architecture Panel will equally value both sole-authored and collaborative authorship research outputs. In the case of outputs with collaborative authorship, evidence of significant levels of contribution to at least some of such research outputs is required for higher scores.

Description

Evidence of the quality and impact of NROs, whether they are traditional, such as academic journal or conference papers, or non-traditional, such as creative works, intellectual property (IP) or commissioned reports, could include some or all of the following (in no particular order):

- › demand for consultancy or professional practice based on the research outcomes or knowledge
- › how the research has led to further research developments or has been applied
- › funding support for the research or its continuation including co-investment by a relevant business (magnitude relative to the business size)
- › commercialisation of the research including licensing, formation of spin-out companies and IP protection
- › use of the research in standards, codes of practice or design guides
- › maintenance and defence of patents and other IP and/or expansion of coverage to other jurisdictions
- › commercialisation expenditure by the licensee or commercial revenue for IP
- › adoption of the research outcomes by other research groups

- › policy, strategy or statutory change introduced as a result of the research
- › change to professional practice in the relevant practice community including codification of the change with evidence of the degree of uptake and level of use
- › positive citations of the research
- › exhibition of the research by others, such as curated events
- › winning of national or international competitions, prizes or awards
- › the rigour of the peer-review process (including by the client for commissioned research), for example, as indicated by article acceptance rates if relevant and available
- › incorporation of the research findings into standard textbooks and industry handbooks or guides
- › commercial, environmental or social success of the research across a range of indicators, such as reduction in resource use or environmental impact (all of air, land and water), cost savings, sales of products or services, improved health, higher productivity, improvements to existing businesses, establishment of new businesses, new processes, new products, new services, improvements to existing products, improved quality or new employment. Evidence might include the scale and time span of the impact and industry, business or community perceptions and responses to the impact
- › quoted testimony from clients or end-users of the research that succinctly and independently verifies the impact of the research (for example, a senior industrialist might indicate the industry significance of the research outcomes); in such cases, the name, role and professional standing of the source and their relationship to the staff member should be declared to allow assessment of independence and significance of the evidence
- › the interaction between the researcher and the industry, business or community including responsiveness and/or awareness of industry, business or community needs.

For conference contributions, if direct evidence of quality and impact is not provided, refereed papers published in proceedings and invited keynote addresses would normally rank ahead of non-refereed papers (especially if not published in proceedings), poster presentations (where not published in proceedings), abstracts (where submitted alone and not as a full paper and not refereed), non-refereed papers and solely oral presentations that are not refereed. The exact type of contribution to a conference should be made clear in the submission.

For invited keynote and plenary addresses (conference contribution – other), evidence of the degree of exclusivity and importance of the forum and invitation should be provided. This might include the number of attendees at the conference, total number of invited keynote or plenary speakers, basis for the invitation and/or selection, and financial and/or other support for the invitation.

For journal articles, if direct evidence of quality and impact is not provided, refereed articles (particularly in leading world-class journals in the discipline) will normally rank ahead of a professional journal or magazine article under editorial scrutiny, and of non-refereed articles.

For a higher degree thesis, evidence could include examiners' comments, if available. Where a higher degree includes coursework, the proportion of the qualification attributed to original research should be identified.

Where the research output assessed is non-quality-assured or non-traditional, further reliance may be placed on the actual or potential downstream impact of the completed work, for example, through its influence on practice and standards in the profession, or through commercial outcomes such as new design paradigms, products and businesses. This must, however, have been measured and evidence must be supplied by the staff member.

EPs should only include evidence that is most relevant to the research. They are not expected to include all examples listed above or in the main guidelines.

Staff members are encouraged to provide any citation and publication metrics as supporting evidence for NROs and research contribution entries. Metrics will be considered in a disciplinary context. Therefore, evidence on how these metrics rank in their field should be provided where possible and can include things like average citation rates in the field or average publication rates or SNIP (Source-Normalized Impact per Paper).

Any metrics should include information on the source and basis of the metric value, for example, Google Scholar for the period 2012 to 2017 or any other parameters used in the search (for example, including or excluding self-citation). In particular:

- › for open access, and ease of assessment and comparison reasons, the Engineering, Technology and Architecture Panel suggests using Google Scholar for citation sources and www.scimagojr.com for journal rankings, impact factors and other journal rankings and scores
- › these sources are in place of or in addition to any other source you might prefer (for example, Scopus, Web of Science), as well as other preferred metrics
- › publication and citation indices might include: *h*-index, *g*-index, citations per year, *i10*-index, citations in the past six years, total impact factor points accrued, average impact factor, journal rank by value and/or quartile in one or more areas. For non-traditional research outputs, alternative metrics, such as those provided by Altmetric, may be appropriate to use.

In most EPs, a small number of metrics should be selected that are appropriate to the field and best support the case for quality and/or impact. It is noted that some of the above example metrics are better suited to the Platform of Research – Contextual Summary or Research Contributions sections than the Description narrative for an NRO.

New and emerging researchers

The Engineering, Technology and Architecture Panel views quality as the primary driver in assessing the research of staff members whether they are new and emerging or not. While the minimum quantity of research is one output, whether this would be sufficient for the EP to be graded research active (research output score ≥ 2) would depend on the nature of the research (for example, likely quantum of research input required to produce an output), the type of research output and rigour of quality assurance, and the fraction of the assessment period available for the researcher to undertake research. For example, for a new and emerging researcher who only completes their thesis late in the assessment period, the quantity of research output expected would

be less than if they complete their thesis and take up a PBRF-eligible position early in the assessment period. Normally, at least one research output in addition to their thesis would be expected, but for researchers starting late in the assessment period a single research output may be sufficient. Researchers in these or similar situations can provide this information as part of their Platform of Research – Contextual Summary.

PhD theses are considered the norm, but Master's theses (at least 90 credit equivalent of research) would be acceptable as a research output for new and emerging researchers. Master's with industry-style projects with a low research emphasis or low-credit value would not normally be acceptable.

Proportion of Nominated Research Outputs to be examined

It is intended that the Engineering, Technology and Architecture Panel will collectively examine 100 percent of NROs.

Research contribution

Types of research contributions

The Engineering, Technology and Architecture Panel considers the following examples of research contribution items as valid, in addition to those examples listed in the main guidelines. They are grouped below under the standard research contribution type categories.

- › Contribution to research discipline and environment:
 - research and disciplinary leadership, such as membership of research teams, contributions to disciplinary development, and debate and public understanding of the discipline
 - contribution to institutional vitality, that is, supporting the development of research both within and across institutions (for example, hosting visiting researchers) – may also be categorised as facilitation, networking and collaboration
 - number of postdoctoral fellows or equivalent working under supervision of the staff member – may also be categorised as researcher development
 - directorships of research centres or research groups (such as stating how many researchers working in centre or group, and the budget) – may also be categorised as appointment.
- › Research prizes, fellowships, awards and appointments:
 - invitation to serve on government, tertiary institution, business or industry task forces, commissions of enquiry, review panels or governance boards, on the basis of the staff member's research esteem in the relevant field.
- › Reviewing, refereeing, judging, evaluating and examining:
 - participation on relevant degree or professional qualification-accreditation panels
 - participation in research funding agency review panels.
- › Uptake and impact:
 - industry adoption of an output of the staff member as standard practice, for example, a type of design (engineering or architectural), an analytical method, a textbook, a research-based engineering or

architectural standard. This can include recent adoption of outputs produced outside this assessment period

- client-sponsored professional practice or consultancy that draws on research expertise and knowledge and leads to significant economic, environmental or societal impact for the client may be a valid research contribution item if it demonstrates the practical impact of the research (even if the work itself does not meet the Definition of Research)
- leadership in research commercialisation, spin-off companies and incubators
- leading or participating in policy development activities that have a national or international impact on the way in which research-investment or research-funding decisions are made by government or private sector agencies
- numbers, coverage and significance of granted patent families
- maintenance, uptake, defence and use of IP including licensing and creation of royalty income streams.

If providing information about **postgraduate supervision** under the Research Contribution component, the Engineering, Technology and Architecture Panel would recommend providing information including (any of the following that are applicable):

- › numbers supervised in the period by type (doctoral, research Master's, professional or taught Master's, honours, postgraduate diploma)
- › numbers completed in the period by type
- › numbers of Māori and Pacific postgraduate supervisions if relevant
- › level of supervision (number in a primary or lead, joint or co-supervising or assistant, adjunct or secondary supervising role, in line with institutional norms)
- › numbers of publications in the period co-authored with students (or alternatively as a separate Research Contribution student factor)
- › how postgraduates have contributed to the main area or areas of your research (for example, 10 of 12 in Area A and 2 of 12 in Area B; or by listing titles of research undertaken by students supervised) to link supervision to your overall research profile
- › prizes won by postgraduates under your supervision (or alternatively as a separate research contribution student factor)
- › names of postgraduate students **should not** be provided.

If providing information about **research grants** in your Research Contribution component, the Engineering, Technology and Architecture Panel would recommend providing information including (any of the following that are applicable):

- › total number and value received in the period
- › list of funders
- › your role in the funded project (for example, principal investigator, associate investigator)
- › contribution to preparing the grant application
- › success rates in the grants won or rarity of winning funding from the external body or company, or any other indicator of the rigour of the application and assessment process (competitive, peer reviewed)

- › whether it was continuing or first-time funding from the body, company or external group.

If providing information about an invitation to be a keynote or plenary speaker that was not taken up, reasons for this decision should be provided.

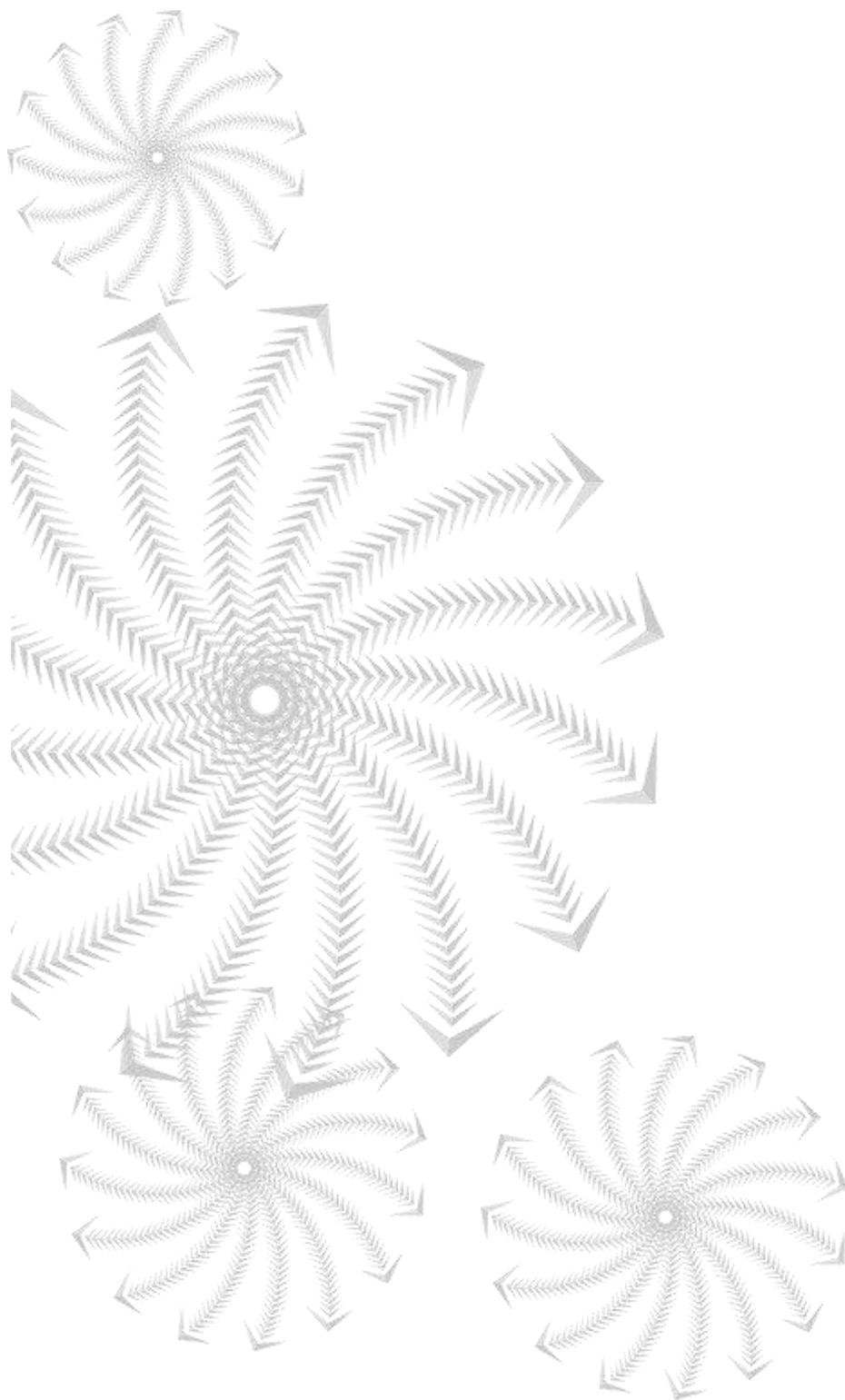
If providing information about **prizes or fellowships** in your Research Contribution component, the Engineering, Technology and Architecture Panel would recommend providing information including (any of the following that are applicable and noting that statements need to be verifiable and objective):

- › rarity or difficulty of achieving the prize or fellowship (for example, number awarded, frequency given, size of field)
- › rigour of nomination, application and/or assessment process.

If providing information about uptake and impact in the Research Contribution component, the Engineering, Technology and Architecture Panel would recommend noting the following points:

- › factual evidence is preferred, but where subjective evidence is provided, the onus is on the staff member to demonstrate, insofar as is possible, the independence of the evidence source and its authenticity
- › the panel is cognisant that there may not be sufficient time for significant commercial outcomes (impacts) to be achieved for research and research outputs produced in the assessment period (for example, from IP such as patents). In such cases, the EP should provide evidence of commercial support for the research and progress towards commercialisation
- › evidence of commercial outcomes and other impacts, such as adoption of design innovations that occur in the assessment period, based on research performed and reported outside to the assessment period, should be provided in the Research Contribution component section of the EP.

The section on *Expectations for information to be provided about research outputs – Description* above also provides examples of evidence of the type of uptake and impact information that could be provided for research contributions.



Health

Health

These guidelines are supplementary to and must be read in conjunction with:

- › the *Guidelines for tertiary education organisations participating in the 2018 Quality Evaluation*, containing information on completing Evidence Portfolios (EPs); and
- › the *Guidelines for the 2018 Quality Evaluation assessment process*, containing information on the scoring and tie-point descriptors used to assess EPs.

For topics where these panel-specific guidelines do not provide guidance or information, the advice provided in the main guidelines on that topic is considered sufficient for submissions to the Health Panel.

For more information, refer to *How to use these guidelines*.

Description of panel coverage

The Health Panel will assess Evidence Portfolios (EPs) in the subject areas described below.

The descriptions should be considered a guide – they are not intended to be exhaustive.

- › Audiology
- › Dentistry
- › Health psychology and mental health
- › Nursing
- › Nutrition and dietetics
- › Occupational therapy
- › Optometry and optical sciences
- › Pharmacy
- › Physiotherapy
- › Speech and language therapy
- › Sport and exercise science
- › Veterinary
- › Educational research associated with the above disciplines
- › Other health studies

EPs in the above subject areas may involve an intersection with subject areas considered by other panels. The Health Panel anticipates receiving EPs that may cross the boundaries with other panels. For example:

- › a health subject area (such as nursing, allied health, dentistry, sport and exercise science) intersecting with public health, health promotion or health services research (Medicine and Public Health Panel) or psychology (Social Sciences and Other Cultural/Social Sciences Panel)
- › a health subject area that intersects with Māori research (Māori Knowledge and Development Panel) or intersects with Pacific research (Pacific Research Panel) or intersects with education (Education Panel).

These are just examples, with other combinations likely including music therapy and research in other design disciplines that cross between health and work considered by the Creative and Performing Arts Panel.

The Health Panel would expect that EPs primarily relating to, and fitting with, subject area descriptions of the other panels would be submitted to that panel. If you are unsure as to whether to submit to the Health Panel or one of these panels, you should review their panel-specific guidelines to determine which of the panels represents the majority of your Nominated Research Outputs (NROs).

Cross-referrals

The Health Panel will make cross-referrals if important material within an EP is considered to be insufficiently covered by the Health Panel expertise. Cross-referrals are predominately anticipated between the Health Panel and: Medicine and Public Health; Māori Knowledge and Development; Pacific Research; Education; Social Sciences and Other Cultural/Social Sciences.

Elaboration of the Definition of Research

A revised Definition of Research has been agreed for the 2018 Quality Evaluation with additional information, specific to the subject areas relevant to the Health Panel, provided below.

- › Health research involves a wide range of approaches including both inductive and deductive enquiry, and different methodologies and methods (including both quantitative and qualitative work). Adequate information should be provided in the EP to inform panel assessment of the quality of the research.
- › Health research contribution to knowledge may include enhancing one or more of the following: new knowledge or understanding in the subject area, methodological advance or advance of theory.
- › It may also include knowledge translation research, sometimes called implementation science, undertaken to impact on practice and/or policy, and/or enhance societal, cultural or economic factors.
- › Health research may occur in a range of settings including laboratories, the clinical environment or the community setting (or other non-clinical environments).
- › Health research may on occasion be embodied in the form of creative or artistic works, such as theatre, narrative work or products such as devices. Information identifying how this work meets the Definition of Research should be provided in the EP.
- › Health research may include the use of existing knowledge to produce new or substantially improved materials, devices, products, communications or processes and/or comprise the synthesis and analysis of previous research (for example, a systematic review or metasynthesis) as long as it meets the Definition of Research (see section below on research outputs).
- › Research **does not** usually include activities that are part of routine health professional or teaching practice and evaluation. To be considered research, professional activities of this nature must meet the Definition of Research, for example: development and evaluation of innovative practice or teaching.

Platform of Research – Contextual Summary

The Health Panel encourages all staff members to fully use this section of the EP to provide a rich context for interpretation of the evidence given in the other sections of the EP.

This section may be used to make connections between different aspects of the portfolio, different themes of research undertaken by the staff member, or to address the overarching research contribution to the staff member's field and the impact of the research during the assessment period.

We recommend that staff members consider the tie-point descriptors to guide the emphasis they choose to pursue in this section.

We recommend that statements in this section be explicitly connected, and cross-referenced, to supporting evidence elsewhere in the EP.

Research outputs

Types of research outputs

The research outputs most commonly submitted to the Health Panel are likely to be journal articles, chapters, books or theses, although all other types of research outputs are acceptable.

Where the output type for an NRO is not a peer-reviewed publication in the scientific literature (for example, a conference presentation, technical report or other), the EP should provide a coherent explanation for why that particular output type has been selected, clearly indicate how the output meets the Definition of Research and provide an evidence-based account of the quality of that NRO.

An authored book (for example, a textbook) may meet the Definition of Research if it has a demonstrated research component.

An edited book may meet the Definition of Research for a staff member who was a contributor to the book. However, where the staff member's role was limited to that of editor it is unlikely to meet the Definition of Research but may be described as a contribution to the research environment for that staff member.

Articles that only provide commentary without a research component, or deal with issues of policy without providing either novel data or analysis, would not usually be considered to be research but may be described as a contribution to the research environment.

Outputs with similar content

Where the same work has multiple outputs covering the same material, the panel recommends care in selection to avoid duplication if this might impact on the breadth of the staff member's platform of research being able to be fully assessed. For example, a technical report on a commissioned piece of research, conference contribution and/or a peer-reviewed journal publication. Where the same work has multiple outputs, the Health Panel would expect to see the output that most strongly demonstrates high-quality research and, where text allows and would help assessment, the rationale for that selection.

Where the same work has related outputs that are different (for example, one research study with multiple publications that are different in content), it may

be appropriate for more than one to be selected as an NRO. The panel still recommends care in NRO selection, to avoid duplication and facilitate assessment of the staff member's platform of research.

In the specific circumstance of the same work having multiple outputs where one NRO is a doctoral or Master's thesis, including a PhD by publication, it is accepted that there may be a level of related publication in the NROs depending on the stage in the staff member's career. The degree of duplication in NROs will impact on the assessment of the portfolio. The specific and novel contributions of any related NROs (including over and above that of a thesis, if included) should be clearly stated to facilitate assessment of the EP.

Quality assurance

Quality-assurance processes used will vary between the different discipline areas within health and the output types that may be submitted. For journal publications, information concerning the ranking of a journal within a discipline and an explanation of NRO citation rates or specific citations of importance may help the panel in evaluating the research.

The panel is not in a position to assume knowledge of the specific quality-assurance process used for a number of output types because these may vary widely (for example, some conference papers and abstracts, books and technical reports). To that end, the process of quality assurance for such NROs should be clearly articulated. Where research has been sponsored by external funding bodies, specificity concerning the type of review before publication of reports may provide evidence of quality assurance.

Where the quality-assurance process used for a research output in the EP is unclear, the output will be assessed based on the data provided, its merit in meeting the Definition of Research and the panel's assessment of the quality of the research output.

Expectations for information to be provided about research outputs

Authors

For multi-authored papers where listing all authors would exhaust the character limit, staff members should note at least the first three author names and indicate their own position in the author list, for example, third in 20 authors or seventh in 35 authors.

Individual contribution

Health research is frequently a collaborative enterprise so outputs will often have multiple authors. The panel does not assume authorship position (for example, first or last) reflects a leadership role or a specific contribution although it may do so. Clear explanation of contribution will help the panel in its assessment.

The Health Panel recognises that more than one staff member may submit the same NRO in their respective EPs. This is acceptable but it is recommended that care be taken when describing each member's contribution to the NRO to avoid conflict between EPs.

Description

The Health Panel anticipates that the degree to which research in an EP is discipline specific and/or interdisciplinary research will vary and both will be assessed on their merits.



For topics where these panel-specific guidelines do not provide guidance or information, the advice provided in the main guidelines on that topic is considered sufficient for submissions to the Health Panel.

As noted above, EPs may reference citation metrics associated with the research output. A rationale should be provided for the choice of metric and all metrics cited need to be evidenced with a supporting reference.

Elaboration of the descriptor for the Research Output component

Reflection on the descriptor and tie-points should help selection and description of the outputs. It is likely to be advantageous to ensure the standing of any one NRO within the subdiscipline or specialist area is made clear to facilitate panel assessment. This is particularly the case where an NRO is of specialist interest (for example, a rare health condition, a specific population or targeted topic) or where a journal is new but has been selected for specific reasons (these reasons should be stated).

Contextual information such as this may have a bearing on how an NRO is assessed and, in particular, how it fits with the definition of “world class”, a description of quality not geography.

New and emerging researchers

While a PhD is increasingly considered the entry qualification for research in health-related disciplines, a research intensive Master’s (for example, a one-year full-time or two-year part-time research project and thesis) may meet the definition of research and, if so, can be included as an NRO for new and emerging researchers who choose to include a thesis in their EP.

In some disciplines, there is widespread uptake of taught Master’s programmes for skill or knowledge development. If a Master’s qualification is largely a taught qualification where any research component is of low-credit value, however, this would not be considered to meet the definition of research and would not be suitable for submission as an NRO.

Within a number of health discipline areas, people with significant professional experience may be employed in tertiary organisations before undertaking or being awarded a research degree. The criteria for determining whether or not a staff member is considered a new and emerging researcher apply whether or not a staff member holds a research degree.

The Health Panel views quality as the primary driver in assessing the performance of all portfolios, including those for new and emerging researchers.

Proportion of Nominated Research Outputs to be examined

It is intended that the Health Panel will collectively examine 100 percent of NROs.

Research contributions

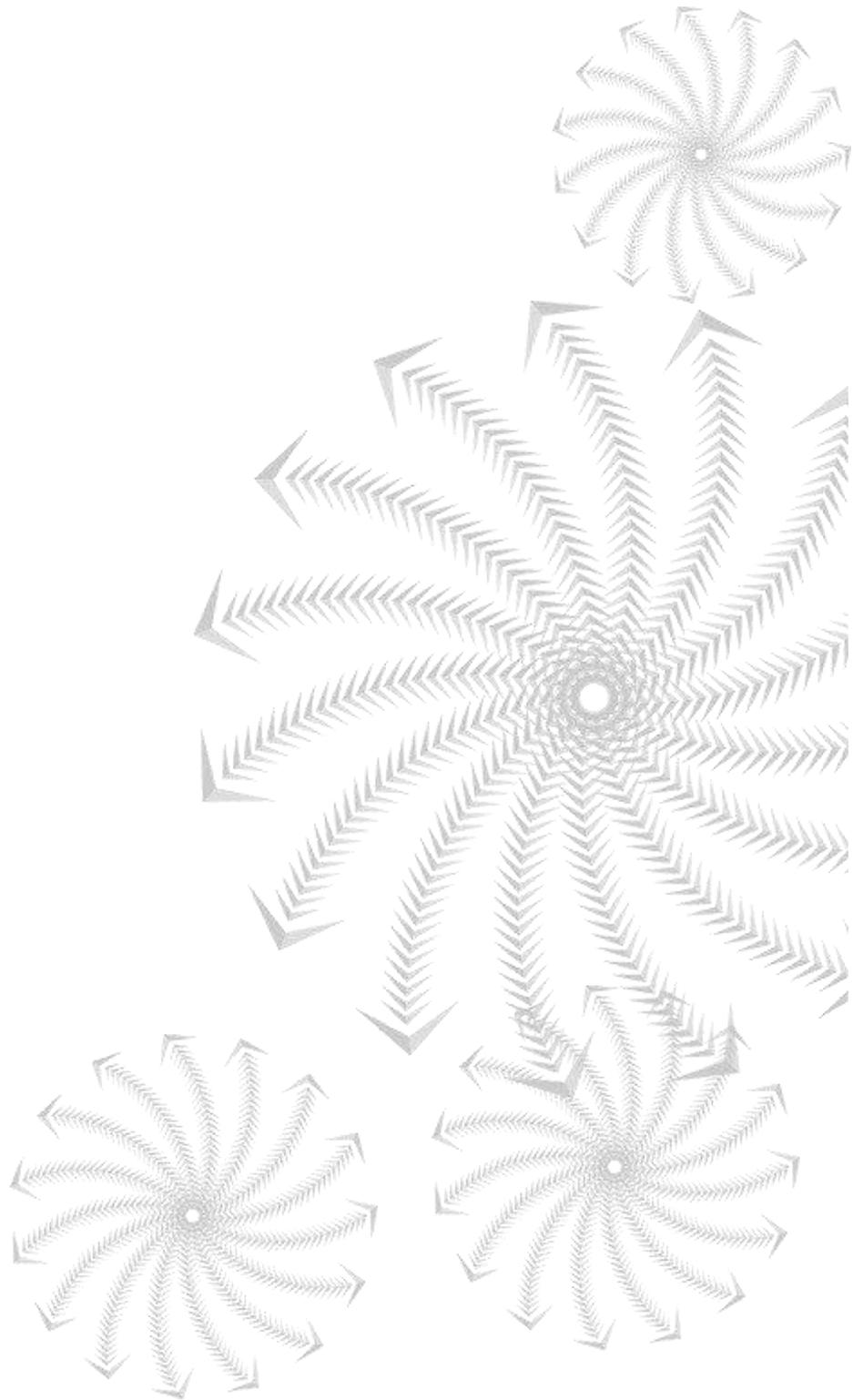
In health, a wide range of contributions may be referred to. Detail regarding three commonly cited areas is noted below, highlighting information that will facilitate evaluation of the EP.

- › Refereeing of papers and grants, editing journals and invitations to write editorials. Details of which journals and grant organisations a researcher referees for, and the frequency of reviewing or other activities should be supplied.

- › Invited presentations at conferences can be an important measure of peer esteem. Given the proliferation of new meetings, including those established by commercial organisations, the status of meetings should be specified, including whether this is a long-established conference and whether it is organised by an academic institution or society.
- › Research funding should make explicit the total funding, and the role of the researcher in acquiring that funding.
- › Research uptake and impact may include influencing practice, policy or education in the discipline. To that end, professional activities, such as professional or clinical work, and involvement with professional or external bodies where this is linked to research are research contributions. An explanation of the link to the Definition of Research should be included in the description to facilitate assessment of the portfolio.

Elaboration of the descriptor for the Research Contributions component

Reference to the descriptors and tie-points should facilitate selection and description of research contributions. Identifying a range of different types of contribution is likely to allow a richer picture of that contribution to be portrayed and will influence assessment.



Humanities and Law

Humanities and Law

These guidelines are supplementary to and must be read in conjunction with:

- › the *Guidelines for tertiary education organisations participating in the 2018 Quality Evaluation*, containing information on completing Evidence Portfolios (EPs); and
- › the *Guidelines for the 2018 Quality Evaluation assessment process*, containing information on the scoring and tie-point descriptors used to assess EPs.

For topics where these panel-specific guidelines do not provide guidance or information, the advice provided in the main guidelines on that topic is considered sufficient for submissions to the Humanities and Law Panel.

For more information, refer to *How to use these guidelines*.

Description of panel coverage

The Humanities and Law Panel will assess Evidence Portfolios (EPs) in the subject areas described below.

The descriptions should be considered a guide – they are not intended to be exhaustive.

- › English language and literature
- › Foreign languages and linguistics, including: foreign languages, literatures and cultures, translating and interpreting, English for speakers of other languages, applied linguistics and linguistics
- › History, history of art, classics and curatorial studies
- › Law, including: public law (including but not limited to constitutional law, Treaty of Waitangi law, human rights), private law (including but not limited to contract, torts, restitution, commercial law, tax law), criminal law and criminal justice, real and personal property law, natural resources law, environmental law, family law, jurisprudence, international law, comparative law, regional law systems (including but not limited to European Union law). Law also includes research relating to the practice and teaching of law
- › Philosophy
- › Religious studies and theology.

In relation to area studies, women's studies, cultural studies, gender studies, media studies and other multidisciplinary studies, the Humanities and Law Panel will only consider EPs that are primarily concerned with research outputs generated out of humanities or law paradigms. Criminology EPs should be submitted to the Social Sciences and other Cultural/Social Sciences Panel.

EPs submitted to the Humanities and Law Panel that contain one or more creative outputs, such as literary or artistic works, may be cross-referred by the panel Chair to the Creative and Performing Arts Panel.

If you are unsure as to whether to submit to the Humanities and Law panel or one of the other panels, you should review their panel-specific guidelines to determine which of the panels represents the majority of your Nominated Research Outputs (NROs).

EPs that primarily contribute to a better understanding of issues relating to language learning and teaching (for example, learner-oriented grammars and lexicographic research, and applied linguistics research with implications for language teaching practices) should be submitted to the Education Panel. Examples of research outputs that should be submitted to the Education Panel include:

- › second language learning theory with implications for language teaching and learning
- › corpus analysis identifying academic word lists for language learners
- › grammatical analysis identifying problematic structures for language learners
- › analysis of linguistic features of different writing genres and their implications for language learners.

EPs that primarily contribute to linguistic theory and methodology and the better understanding of linguistic issues, where “linguistic” includes sociolinguistic and psycholinguistic issues, as well as those illuminated by discourse analysis, should be submitted to the Humanities and Law Panel. Examples include:

- › language variation and change
- › the structure of language (phonology, syntax, morphology, lexis)
- › the use of language in different social contexts
- › the use of language in interaction
- › discourse analysis
- › the psycholinguistic processes involved in language production and comprehension.

Literary translations must show evidence of research input, with an introduction, notes or other evidence of scholarly apparatus; translations that are to be viewed as forms of creative output should be contextualised as such and may be cross-referred to the Creative and Performing Arts Panel.

EPs on the border of linguistic research that could form the basis for language teaching texts, but where language teaching implications are not the primary focus of the output (for example, research involving discourse analysis of interaction), should be submitted to the Humanities and Law Panel.

Cross-referrals

It is expected that most cross-referrals from the Humanities and Law Panel will be with the Education Panel; Social Sciences and Other Cultural/Social Sciences Panel; Māori Knowledge and Development Panel; Pacific Research Panel; and Creative and Performing Arts Panel.

Elaboration of the Definition of Research

A book published to accompany an exhibition that is a major stand-alone research publication in its own right with a shelf-life longer than the exhibition may be considered a separate output and be submitted as an authored (or edited) book. The researcher should indicate the connection between the book and the exhibition.

Professional practice outputs such as opinions, submissions, book reviews, bibliographies, dictionary entries, exhibition curating, film or video production may fall within the PBRF Definition of Research. While routine professional practice in language teaching does not fall within the PBRF Definition of Research, research-based commentary on language teaching and pedagogy, as well as research-based curricula and products, may be considered research. Staff need to explain the research component of these types of outputs and specify in the Description field of the NRO how the output meets the PBRF Definition of Research.

Digital humanities crosses the boundaries between computer science and humanities disciplines, such as archaeology, classics, English, history, modern languages and literatures, and the arts. Digital scholarship possesses a technical component, is interdisciplinary in form and substance, and is often (and necessarily) pursued through collaborative efforts. EPs in digital humanities should make clear the research significance and achievement of NROs in digital humanities and specify how the digital component contributes to its originality, research quality and impact.

Platform of Research – Contextual Summary

The Platform of Research – Contextual Summary allows researchers to describe the overall trajectory of their research and show how their work in the assessment period reveals a cohesive domain of critical inquiry. The contextual summary also shows how a researcher’s work contributes to the relevant contexts, discourses, paradigms and intellectual underpinnings of the discipline and of the wider domains of humanities and law.

This section of the EP is the place to describe how the work may have challenged or advanced modes of practice through, for example, contributions to theory and methodology, research-based creative, literary or curatorial works and research-based professional practice, such as opinions, bibliographies and book reviews. Researchers should also make clear the significance and achievement of digital humanities research and specify how the digital component contributes to the overall domain of inquiry. If the work is interdisciplinary, the researcher should describe how it contributes to a wider research platform.

The Platform of Research – Contextual Summary enables researchers to elaborate on contexts of dissemination.

This section also provides researchers with the opportunity to include information about their specific research context that is relevant to assessment. Such information could include employment status, such as part-time employment, or other factors that could restrict opportunities for postgraduate supervision or other research contributions.

Research outputs

Types of research outputs

Research outputs generated in the fields of humanities and law are diverse.

Applied research outputs could include exhibitions, film or video, professional law practice, such as reports, and paid advocacy. Non-typical research outputs (such as web-based data sets or creative works) will be assessed in relation to

their use of humanities and law paradigms, eligibility within the PBRF Definition of Research and connection to the EP as a whole.

Textbooks and handbooks in humanities and law may comprise important research within the discipline. This may include a contribution to the intellectual infrastructure of the discipline, teaching or practice, or the development of new paradigms. Similar specific referencing and commentary is required when the claim is made in respect of a new edition or the updating or adaptation of an existing text. Similarly, an edition of collected essays may be a strong research output if it can be shown that it contributes to the intellectual infrastructure of the discipline, teaching or practice or introduces new paradigms into the discipline.

Within humanities and law disciplines, citation metrics are not typically used to assess the quality or impact of an output. However, EPs may include in the Description field information on the citation of an output, the outlet quality, such as the relative ranking of a journal in its subfield, or acceptance rates of articles for journals. There is no agreed list of journal rankings in New Zealand or Australia in most disciplines. The panel confirms that peer assessment of individual output quality on a case-by-case basis is an essential aspect of the evaluation. Outputs will be assessed on their intrinsic research merit according to the PBRF Definition of Research.

Quality assurance

It is expected that, for the majority of disciplines covered by the Humanities and Law Panel, research outputs submitted will be quality assured. Quality assurance will include peer review for journals, referee reports for conference papers and/or a documented process of competitive selection, referee reports and/or pre-publication peer reviews for books, and other equivalent quality-assurance processes. If a non-standard quality-assurance process has been used, for example, in relation to practice-based research outputs (such as a commissioned report) or creative research outputs (such as a film, video or exhibition), staff members are expected to explain in the NRO Description field precisely how quality has been assured.

Expectations for information to be provided about research outputs

Authors

A range of conventions may be used to order the authors in the bibliographic record. In humanities and law these are most often alphabetical or contributive. The convention chosen should be stated in the Description section for the NRO.

Where there is more than one author, staff members must ensure their contribution to the research output is clearly defined in the Individual Contribution section of the NRO. Staff are encouraged to confer with co-authors to ensure that there is no conflict in the information provided.

Description

Where there are research outputs that may not obviously meet the PBRF Definition of Research, such as those generated by standard professional practice, the Description field should explain their inclusion as an NRO.



For topics where these panel-specific guidelines do not provide guidance or information, the advice provided in the main guidelines on that topic is considered sufficient for submissions to the Humanities and Law Panel.

New and emerging researchers

The minimum requirement for an EP to be accepted for assessment is one NRO. The submission of a thesis is not a requirement for new and emerging researchers; however, if a doctoral, Master's or professional qualification thesis is submitted as one of the NROs, it is expected at least one other quality-assured NRO is also submitted. In law, a PhD or LLM is the entry-level degree.

Elaboration of the descriptor for the Research Output component

The Humanities and Law Panel will use the same standards to assess all types of research outputs. The panel will specifically consider the extent to which the research:

- › is recognised as being of high quality
- › is original, representing an intellectual advance or a significant contribution to knowledge
- › exhibits intellectual and methodological rigour and coherence
- › demonstrates intellectual and/or disciplinary impact
- › may demonstrate impact in the wider community, for example, through influencing the direction of policy or practice.

Proportion of Nominated Research Outputs to be examined

It is intended that the Humanities and Law Panel will examine a minimum of 50 percent of NROs, with a higher percentage examined where appropriate and necessary.

Research contributions

The Humanities and Law Panel recognises that a number of activities contribute to the research environment in humanities and law, including but not limited to: translations; significant language teaching materials; academic writing and commentaries on existing works and research; academic writing, commentaries and advice to public bodies on law reform and policy development; book reviews; peer reviewing journal articles and book manuscripts; membership of editorial boards; refereeing and reviewing; assessing research grant applications; external examining of theses; leadership in conference planning; hosting department and/or professional colloquia; research related collegial activities and supervision of students; mentoring students and support of honours and honours-equivalent students, particularly in law; providing advice and commentary to law commissions and government ministries on proposed law reforms.

Staff members should ensure that their description of these activities clarifies the status and importance of the invitation or contribution.

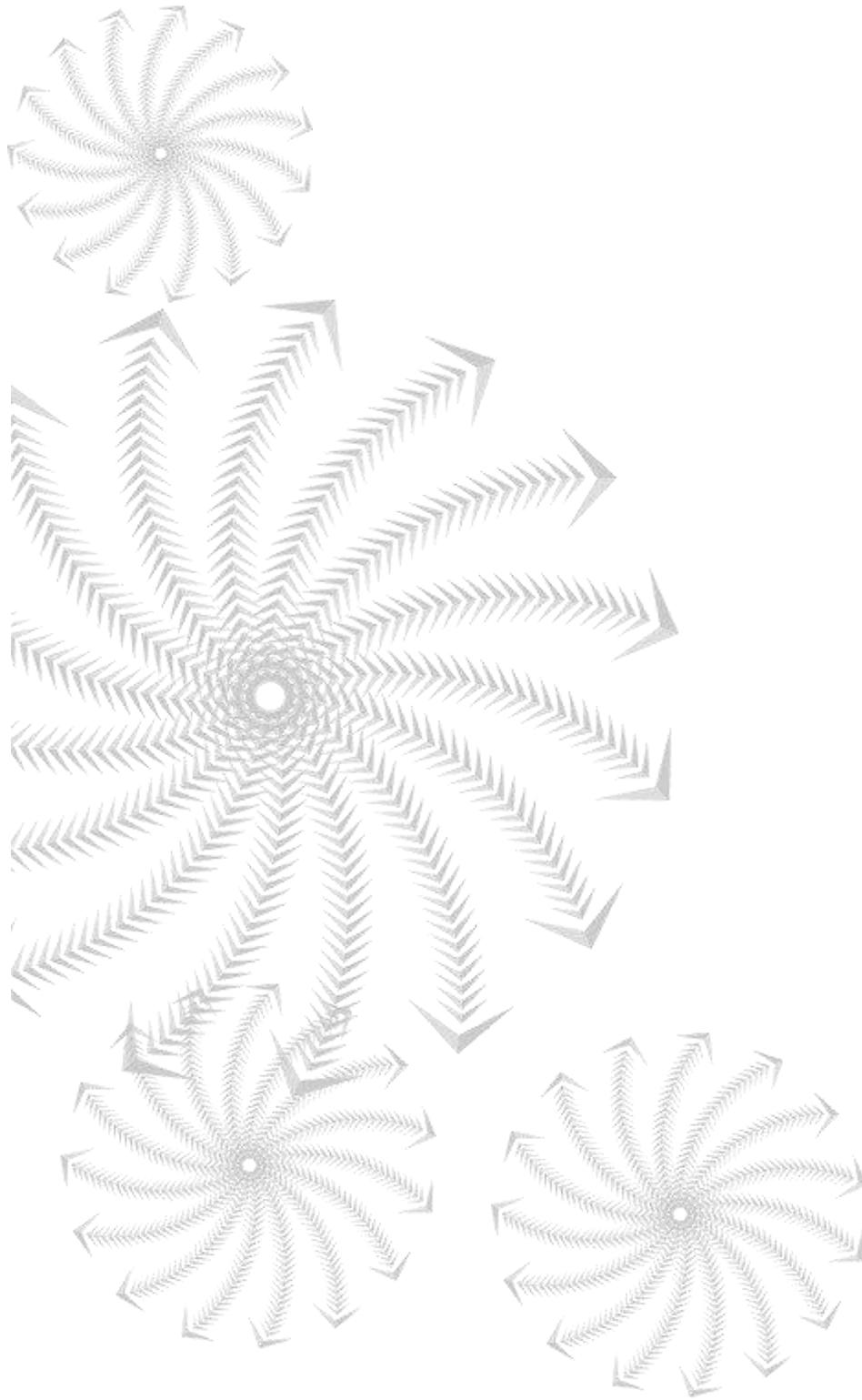
In law, impact may be intellectual or disciplinary (demonstrated through, for example, citation, whether in other literature or by judges) or policy or practice (demonstrated through, for example, influencing the direction of public policy or the practice or teaching of law).

Impact may be demonstrated in the humanities by citation, or disciplinary change, as in the uptake of research in school curricula, or in media or other forms of public dissemination, or in other professional activities such as involvement with professional or external bodies linked to research. An explanation of the link to the Definition of Research should be included in the description. There may also be a range of other impacts including policy

impact, social or cultural impact, political, environmental or economic. The researcher should explain impacts with examples and may include an appropriate measure of assessment.

Elaboration of the descriptor for the Research Contributions component

Reference to the descriptors and tie-points should facilitate selection and description of research contributions. Identification of a range of different types of contribution is likely to allow a richer picture of that contribution to be portrayed.



Māori Knowledge and Development

Māori Knowledge and Development

These guidelines are supplementary to and must be read in conjunction with:

- › the *Guidelines for tertiary education organisations participating in the 2018 Quality Evaluation*, containing information on completing Evidence Portfolios (EPs); and
- › the *Guidelines for the 2018 Quality Evaluation assessment process*, containing information on the scoring and tie-point descriptors used to assess EPs.

For topics where these panel-specific guidelines do not provide guidance or information, the advice provided in the main guidelines on that topic is considered sufficient for submissions to the Māori Knowledge and Development Panel.

For more information, refer to *How to use these guidelines*.

Description of panel coverage

The Māori Knowledge and Development Panel will cover a wide range of research areas. The guiding principle for coverage is that the panel will consider all Evidence Portfolios (EPs) where there is evidence of research based on Māori world views (both traditional and contemporary) and Māori methods of research. While other methodologies may also be used in the research, the inclusion of Māori methodologies will be the important consideration. Consequently, there is potential for the panel to consider research across all subject areas. However, in practice, it is likely that the broad theme areas covered by the panel will be:

- › te Reo Māori
- › tikanga Māori
- › wairuatanga
- › cultural development
- › indigenous studies
- › social development
- › economic development
- › toi Māori
- › political development
- › hauora
- › iwi development
- › environmental sustainability.

It is expected that all or most of the Nominated Research Outputs (NROs) will primarily investigate issues of importance to Māori, with Māori-specific measures and processes. The EP is likely to show significant involvement with Māori and outcomes that are relevant to and significant for Māori while also demonstrating intent to produce outcomes that benefit Māori.

EPs that include some Māori components (for example, in their subject area) but do not involve Māori methodologies will not be assessed by the panel. They will be assessed by the panel that best covers the subject area of the staff member's EP.

The Māori Knowledge and Development Panel will refer EPs to other relevant panels. Where an EP is written in te Reo Māori, it should be assessed according to the research method employed rather than the language used. Māori members in other panels will be able to advise the panel further.

Ethnicity of the staff member is not a factor in the submission of EPs to the Māori Knowledge and Development Panel. EPs compiled by Māori and non-Māori researchers will be assessed by the panel if the EP primarily consists of research based on Māori world views and methods.

Cross-referrals

The Māori Knowledge and Development Panel will consider cross-referrals of EPs:

- › where they fit or overlap with the description of panel coverage and/or Definition of Research in these panel-specific guidelines
- › where one or more NROs address an issue of importance for Māori and clearly show evidence of involvement with Māori or specific relevance to Māori
- › where they are of such a nature that they are able to contribute to the understanding of issues affecting Māori.

In the case where either an EP or a research output is submitted in the Māori language, this does not necessarily qualify for cross-referral. In such cases, the Chair of the primary panel will seek appropriate translation of the EP.

Elaboration of the Definition of Research

Evidence of service to and impact of the research for or with whānau, hapū and iwi is important to the panel. The panel will be looking to recognise quality research wherever it lies, and acknowledges that the outcomes of Māori knowledge and creative arts research may enter the public domain in a wide range of traditional, experimental and commercial contexts.

The Māori Knowledge and Development Panel will adopt an inclusive interpretation of the PBRF Definition of Research in regard to those practices traditionally viewed as professional practice.

The Māori Knowledge and Development Panel recognises that researchers in many of the subject areas under review will be extending and testing the boundaries of research, forms of publication and the conventions of dissemination in their field. The panel will not advantage or disadvantage any type of research or form of output, whether it is in physical or virtual, textual or non-textual, visual or sonic, static or dynamic, digital or analogue form.

To help the assessment, it is essential that each researcher clearly communicates the platform of their research and each NRO descriptor and commentary accurately describes the work, elucidates the nature of the enquiry, the context, the research processes involved and provides the evidence necessary for panel members to assess its quality. Evidence of any relevant external peer-review processes should be provided.

The panel will assess whether an EP provides evidence of world-class research. World-class Māori research outputs are those that rank with the best regardless of the topic, theme or location. Research outputs that deal with Māori topics or themes of primarily community-specific, regional or national

focus or interest can be of world-class standard, and they may rank with the best research of its discipline conducted anywhere in the world.

Platform of Research – Contextual Summary

Staff members can provide information and emphasis on how the research has impacted on the discipline itself, and this may include its innovative nature in the context of indigenous studies when considered in local, national and/or global contexts.

Staff members are encouraged to provide information that clearly demonstrates the impact of their research within their specific disciplinary fields and/or to the broader area of indigenous research. They may include evidence of novelty or innovation in their work and the way it contributes at the local, national or/ global level.

Research outputs

Types of research outputs

Given the diverse nature of the subject areas covered, the Māori Knowledge and Development Panel expects to receive a broad range of research outputs. Full consideration will be given to the wide range of types of research outputs noted in the main guidelines. In particular, the panel will be prepared to assess the following types of research outputs that may especially contribute to Māori knowledge and development, provided they are research-based:

- › presentations at hui or wānanga
- › oral presentations including whaikōrero and waiata
- › performances such as haka and waiata-ā-ringa
- › reports for external bodies, including submissions to the Māori Land Court and Waitangi Tribunal, or research for iwi rūnanga
- › new artefacts including material cultural creations such as whakairo, raranga and whare
- › compositions – haka and waiata-ā-ringa both traditional and contemporary
- › creative works including new toi Māori and mahi hoahoa artefacts including visual and material culture creations such as whare, moko, raranga, film and digital forms
- › other types of research outputs, for example, new kai, products and processes.

If any research output is delivered in a specific Māori context (such as an art work, whakairo or whaikōrero), the evidence of the research and the supporting information may be provided in an alternative form, such as a photograph, audio recording, audio visual format, transcription, commentary or attestations from kaumātua or peers.

Literary translations must show evidence of research input, with an introduction, notes or other evidence of scholarly apparatus.

Expectations for information to be provided about research outputs

Description

Formal quality-assurance processes are many and varied across the breadth of Māori knowledge and development. The assessment is inclusive of innovative, experimental and culturally specific research approaches some of which may

not have been through standard quality-assurance processes. Accordingly, outputs that have not gone through a standardised quality-assurance process before publication will not necessarily be deemed to be of lesser quality, but they will need to be described in the Description field of the NRO. Where a researcher is unable to verify the quality-assurance process through evidence or commentary then the panel will consider these as non-quality assured.

All kinds of evidence of independent peer review can help the panel members in their analysis of the work submitted. This may also include, whānau, hapū, iwi and kaumātua endorsements. This evidence can be submitted as supporting information for the NRO.

Elaboration of the descriptor for the Research Output component

The Māori Knowledge and Development Panel will look for evidence of quality in the work itself, supported by a range of other quality measures, such as review, citation, inclusion in curated exhibitions, impact evidence and endorsements. Specific consideration will also be given to a range of quality measures, including formal quality-assurance processes, peer esteem and impact indicators, which offer clear evidence of the independent judgement of others expert in the field.

The assessment process will also be informed by the platform of research commentary, the evidence submitted for NROs and the descriptive elements relating to each NRO, and the research contribution sections of the EP where evidence of its quality through citation, review, receipt of awards and its impact can be presented.

New and emerging researchers

While PhD theses are considered the norm, Master's theses (at least 90 credit equivalent of research) would be acceptable as an NRO. Master's with industry-style projects with low research emphasis or low-credit value would not normally be acceptable as an NRO.

Proportion of Nominated Research Outputs to be examined

It is intended that the Māori Knowledge and Development Panel will collectively examine 100 percent of NROs.

Research contribution

Types of research contributions

The panel recognises that a wide range of research contributions are relevant to the subject areas covered by the panel. The research contribution component describes the contribution and recognition of a staff member's research and research-related activities.

The impact of Māori research can be acknowledged in ways unique to te Ao Māori, for instance, the performance of a creative piece of work, such as haka or waiata-ā-ringa, in multiple venues or sites could be considered analogous to multiple journal citations. Similarly, the esteem of the site or event where the creative work is performed could be considered analogous to the varying esteem afforded to publication sites, such as journal rankings.

The Māori Knowledge and Development Panel will consider examples of the 12 research contribution types, including but not limited to:



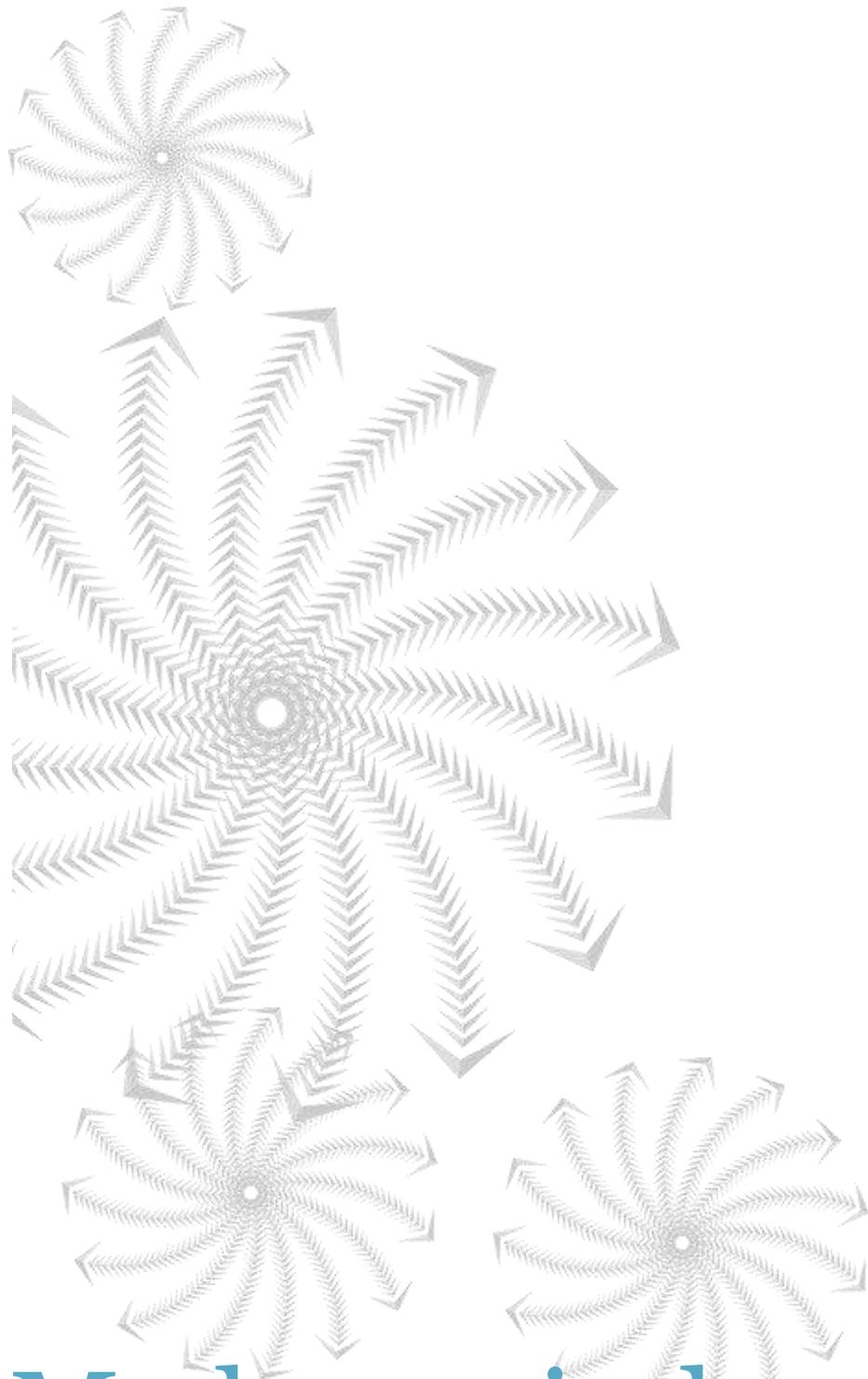
For topics where these panel-specific guidelines do not provide guidance or information, the advice provided in the main guidelines on that topic is considered sufficient for submissions to the Māori Knowledge and Development Panel.

- › development and maintenance of strong, meaningful and responsive links with end users of research, including the transfer of knowledge (in te Reo Māori and other languages) to participants and/or stakeholders in research, such as Māori communities, agencies and organisations working with Māori
- › the use of research methodologies and methods developed from Māori research to expand knowledge and research practices in disciplines and subject areas outside the study of New Zealand
- › promotion of research culture and practices with Māori through capacity and capability development, facilitation and leadership
- › expanding Māori research capacity through mentoring, supervision and promoting Māori research
- › evidence of peer esteem that may include evidence unique to te Ao Māori.

Research contributions that reflect the esteem of peers considered as experts in their field or that show how the staff member contributes to a world leading research environment could be considered world class.

Research contributions can be activities inside academia and society generally that are based on Māori research methodologies and methods, Māori centred-subject matter, and research that impacts on Māori. Where information in the form of impact indices is available, that information may be included in the Description field when describing why a research contribution represents one of the staff member's best outputs.

The Māori Knowledge and Development Panel is aware that some staff members will be working across a combination of community-based, profession-based and academic research positions. If any research contribution is delivered in a specific Māori context it can be submitted for the panel to consider.



Mathematical and Information Sciences and Technology

Mathematical and Information Sciences and Technology

These guidelines are supplementary to and must be read in conjunction with:

- › the *Guidelines for tertiary education organisations participating in the 2018 Quality Evaluation*, containing information on completing Evidence Portfolios (EPs); and
- › the *Guidelines for the 2018 Quality Evaluation assessment process*, containing information on the scoring and tie-point descriptors used to assess EPs.

For topics where these panel-specific guidelines do not provide guidance or information, the advice provided in the main guidelines on that topic is considered sufficient for submissions to the Mathematical and Information Science and Technology Panel.

For more information, refer to *How to use these guidelines*.

Description of panel coverage

The Mathematical and Information Sciences and Technology Panel will assess Evidence Portfolios (EPs) in disciplines identified by:

- › level 1 of the American Mathematical Society Mathematics Subject Classification MSC2010, with specificity being delivered at levels 2 and 3 in the hierarchy, including all of pure mathematics, applied mathematics and statistics but subject to the caveat about education below
- › level 1 of the 2012 ACM Computing Classification System (ACM-CCS2012), with specificity delivered at lower levels of the hierarchy but subject to caveats regarding education and hardware engineering below
- › management of both tacit and recorded knowledge, including librarianship and information science, record and archive studies and information management.

EPs should be submitted to the Education Panel rather than the Mathematical and Information Sciences and Technology Panel if the motivation and focus of the EP is primarily pedagogical, rather than mathematical or statistical, or if it relates more closely to computer science and information systems.

EPs should be submitted to the Engineering, Technology and Architecture Panel rather than the Mathematical and Information Sciences and Technology Panel if the focus of the EP is on hardware aspects of technology.

It is expected that most cross-referrals to the Mathematical and Information Sciences and Technology Panel will originate from the following panels: Engineering, Technology and Architecture; Business and Economics; Physical Sciences or Biological Sciences. Cross-referrals would most likely be triggered by a need to assess the technical sophistication, novelty and/or appropriateness of the methods employed in the Nominated Research Outputs (NROs) appearing in the EP being evaluated.

Elaboration of the Definition of Research

Professional activities that do not embody original research might comprise routine software development and statistical support for research conducted in a non-mathematical field, such as the life sciences, including health, and geophysics. Outputs, however, completed as part of standard professional activities will need to be calibrated and authenticated against the PBRF Definition of Research.

Professional activities could meet the Definition of Research when, for example, they:

- › underpin innovations that depend on parsimonious and robust mathematical and statistical modelling (for example, optimisation of professional practice procedures on the basis of an illuminating theoretical analysis)
- › enable generalisable insights into software development processes.

NROs perceived to be on the border of research with professional practice will need to demonstrate the existence of a robust process of quality assurance and provide details of this in the Description section. If no quality assurance is in place, an indication of the significance of the NRO must be included in the Research Contribution component.

The influence of the research reported may be an optional adjunct measure in other cases, which would usually be expressed through the academic credibility and quality of journals and the prominence of conferences, including citation counts if advantageous. But applications or uptake beyond the field could also be worthy indicators of impact if appropriately validated. For example, a statistical method in clinical medicine or geophysical prospecting, a mathematical model that has gained acceptance by the professional community, a mathematical or statistical result that has had a major impact in the field of application or the uptake of a quantitative tool or software.

Platform of Research – Contextual Summary

As well as placing an EP in the wider context of the individual's research over the assessment period, this section allows the EP to be viewed holistically.

This may be particularly important in providing an understanding of the impact the research has had on the subject area as a whole or to other subject areas that benefit from research results and outcomes. For example, in applied mathematics and statistics, the mathematics is often a “means to an end”, such as models of a physical process of significant importance nationally, internationally or globally. Examples are:

- › a mathematician working to develop better models of physical phenomena that relate to global climate change that will produce more accurate global climate models
- › building authentic models of ignition and combustion that are influencing the way forest fires propagate and are subdued
- › an epidemiologist modelling a pandemic
- › proven conjectures in pure mathematics that have the potential to totally change the direction of a research field
- › outcomes from computer and information sciences, for example, software, that influence the way humans and machines interact.

Research outputs

Types of research outputs

For most subject areas covered by the Mathematical and Information Sciences and Technology Panel, a wide range of journals and refereed conference proceedings is available for publishing research outputs. The standing and impact of the journals and conference proceedings covered by the panel is diverse, including some with especially low acceptance rates. Research outputs of any type will be considered on their merits and will be assessed in relation to the quality of the output. The reputation of the medium in which the research is published can provide ancillary endorsement of the quality of the research presented.

- › Textbooks must have a demonstrated research component for them to be considered as a research output.
- › Research-informed case studies will be considered as a legitimate research output in software engineering and information systems.
- › Research conducted to address a specific research inquiry raised by a reputable national or international organisation, where a quality-assurance process exists, will be considered as a legitimate research output.
- › Leading conferences and symposia in the computational and information sciences with low acceptance rates, with proceedings that are commensurate with premium journals, will be considered accordingly.

Quality assurance

Quality assurance of the NROs listed in Mathematical and Information Sciences and Technology EPs will primarily be achieved by peer review, because journal articles and conference proceedings papers are the most common medium used to express research productivity in this field.

- › Where software or an unpublished but disseminated case study is listed as an NRO and is said to be quality assured, the nature of the quality-assurance process that has taken place must be clearly explained in the Description section.
- › Where research has resulted in a commercial product for a firm, the quality-assurance process used by the firm to evaluate the research results should be described with any formal reporting on the outcome of the process and supporting statements by the firm included in the Description section.
- › All quality-assured software will be considered to have non-standard quality assurance that needs to be explained.
- › Evidence about the impact of non-quality-assured Mathematical and Information Sciences and Technology Panel outputs, which could include software or mathematical or statistical tools, for example, must be provided in the Description section for each NRO.

Expectations for information to be provided about research outputs

Authors

The Mathematical and Information Sciences and Technology Panel acknowledges that a range of conventions are used to order the authors in its research outputs, for example:

- › equal contributions
- › alphabetical

- › contributive
- › placing the project head last
- › placing postgraduate students and postdoctoral fellows first on the grounds that they have the most to gain from the publication.

The convention chosen should be stated in the Description section for the NRO.

Individual contribution

In the researcher's qualitative description of their substantial and distinctive contribution to an NRO, the detailed information the panel needs to be able to assess an individual's contribution can include leadership elements that have led to the research outcome where appropriate. For example, the project leader:

- › may have obtained the funding to do the research, which would have involved the original inspiration for it in the context of its importance to the wider field of study
- › might have had the specific idea for the paper itself and have contributed to its scholarship through the technical development, guidance, removal of roadblocks and mentoring of a more junior staff member or student
- › will probably have shared the writing and other tasks.

Description

Information about the standing of journals is always helpful, reflecting that some mathematical and information sciences and technology subject areas have low citation counts and, consequently, low journal impact factors as a result. This is well known, especially in the mathematical and computer sciences, where annual publication rates tend to be less than the other sciences and citing is more restrained.

The Mathematical and Information Sciences and Technology Panel recognises that, consequently, journal impact factors will generally be lower than those of other disciplines. For these reasons, considerable care has to be exercised in over-interpreting the various metrics, and relativities between diverse fields should be avoided because they are meaningless.

Recalling the PBRF's six-year cycle, the Mathematical and Information Sciences and Technology Panel recognises that indices relating to lifetime performance, such as the *h*-index, may still be a helpful indicator of uptake within each subject area. Nevertheless, because *h*-indices calculated from different input data sets, notably Google Scholar (typically with Publish or Perish), Scopus and the Web of Knowledge, are also often different: if an *h*-index is declared, an EP should say which data set it is based upon.

The Mathematical and Information Sciences and Technology Panel will not calculate an *h*-index if it is unstated in the EP and it will not compare an *h*-index with other subject areas within or outside of its scope.

Minimum evidence requirements for research outputs

Case work and software arising from any of the subject areas covered by the Mathematical and Information Sciences and Technology Panel are areas that may require non-standard quality assurance. Researchers must provide sufficient supporting information to support their inclusion in the EP as a quality output.



For topics where these panel-specific guidelines do not provide guidance or information, the advice provided in the main guidelines on that topic is considered sufficient for submissions to the Mathematical and Information Sciences and Technology Panel.

Elaboration of the tie-points for the Research Output component

Only applied statistics has been specifically identified in the elaboration of the tie-point descriptors for six and four below.

Tie-point six

In applied statistics, staff members will need to establish that they have made a significant original contribution to the research. They should provide evidence that the application area is either one of their primary areas of research or involves the novel application of statistical methods to a new application area.

Tie-point four

In applied statistics, staff members will need to demonstrate that their involvement in the research contributes to more than a routine analysis of the data. They might show that they have made a major contribution; for example, by contributing to the design of a complex study, the collection and analysis of information and the preparation of a report.

Proportion of Nominated Research Outputs to be examined

The Mathematical and Information Sciences and Technology Panel intends to collectively examine 100 percent of the NROs included in the Research Output component of each EP submitted to the panel.

Research contribution

Types of research contributions

In mathematics, in addition to journal pre-publication reviews, synopses published in mathematical reviews and Zentralblatt für Mathematik are considered to be a valid contribution to the research environment.

Research programmes, summer schools and invitation-only conferences and workshops run under the aegis of organisations of good standing will be considered valid contributions to the research environment. The following examples are particularly highly regarded in the mathematical and statistical sciences and in information technology, both with respect to participation because delegates are usually invited and by way of membership or organising and/or scientific committees: the Royal Society of London, Isaac Newton Institute for Mathematical Sciences, International Centre for Mathematical Sciences, International Centre for Theoretical Physics, Mathematical Sciences Research Institute, Gordon Research Conferences, Pacific Institute for the Mathematical Sciences, European Consortium for Mathematics in Industry, Mathematisches Forschungsinstitut Oberwolfach, Banff International Research Station, Schloss Dagstuhl – Leibniz Center for Informatics.

In computer and information science and information systems, particularly, activities including, but not limited to, membership of conference programme committees, invitations to contribute to conference panels, membership of standards committees will be recognised as valid research contributions.

Influence and impact of research beyond the subject areas covered by the Mathematical and Information Sciences and Technology Panel is recognised as a valuable research contribution that is expected to occur predominantly in applied mathematics, applied statistics and the computer and information sciences. Evidence of uptake and of the level of influence the contribution is

having on the sector to which it has been applied should be provided to allow the panel to determine the scope and significance of the contribution.

Elaboration of the descriptor and tie-points for the Research Contributions component

Only applied mathematics and applied statistics have been specifically identified in the elaboration of the tie-point descriptors for six and four below.

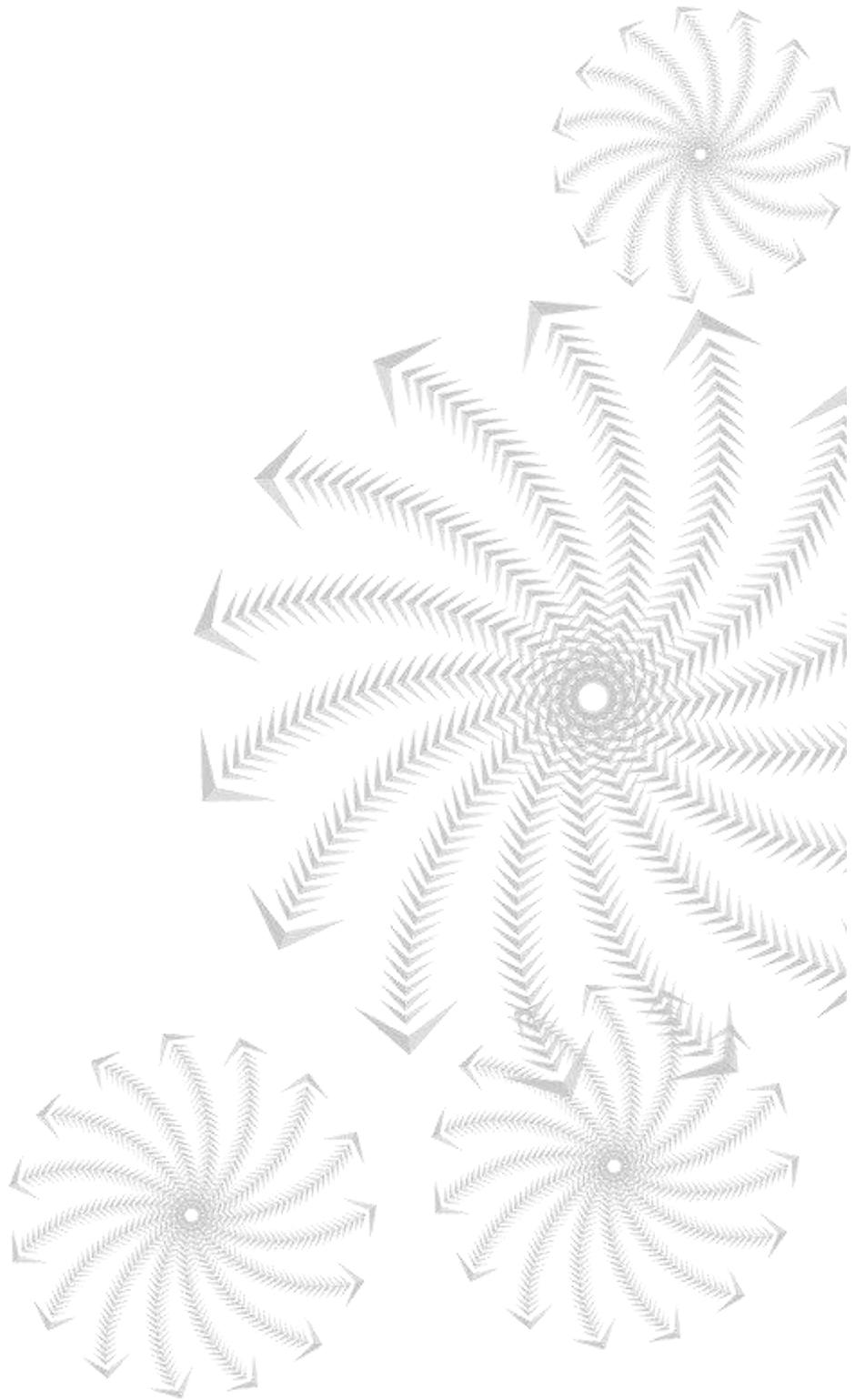
Tie-point six

Reflecting the far-reaching currency of modelling generally, as well as in technical mathematics and statistics, a strong element of international uptake within the target discipline may be present for applied mathematics and applied statistics. This may be evidenced by published papers and citations in journals that have audiences other than mathematicians and statisticians, by membership of prestigious consortia of wide-ranging expertise and/or by research grants focused on topics other than mathematics or statistics.

Programme committees, conference panels, organising committees and scientific communities with the responsibility for content and quality assurance will normally, although not exclusively, be of international standing.

Tie-point four

Uptake of method and results, and memberships of overseeing panels of national standing.



Medicine and Public Health

Medicine and Public Health

These guidelines are supplementary to and must be read in conjunction with:

- › the *Guidelines for tertiary education organisations participating in the 2018 Quality Evaluation*, containing information on completing Evidence Portfolios (EPs); and
- › the *Guidelines for the 2018 Quality Evaluation assessment process*, containing information on the scoring and tie-point descriptors used to assess EPs.

For topics where these panel-specific guidelines do not provide guidance or information, the advice provided in the main guidelines on that topic is considered sufficient for submissions to the Medicine and Public Health Panel.

For more information, refer to *How to use these guidelines*.

Description of panel coverage

The Medicine and Public Health Panel will assess Evidence Portfolios (EPs) in the subject areas described below.

The descriptions should be considered a guide – they are not intended to be exhaustive. Educational research associated with each of these disciplines is included.

Biomedical

Biomedical includes disciplines of physiology; pathology; biochemistry; molecular biology; genetics; cell biology; immunology; microbiology; neuroscience; genomics; developmental biology; pharmacology and bioinformatics when research outputs presented in EPs are being used primarily in medical science, clinical practice, public health and health interventions.

Clinical medicine

Clinical medicine includes all clinically oriented research including research in medical disciplines such as psychiatry, surgery, obstetrics and gynaecology, general practice, paediatrics, anaesthesiology and internal medicine.

Public health

Public health includes epidemiology; hauora (Māori health); environmental health; occupational health; community health; health education; health promotion; biostatistics; health policy; health services; and health management.

Cross-referrals

The panel Chair can cross-refer EPs to one or more other panels if they believe the Medicine and Public Health Panel does not have the expertise to fully evaluate the EP. It is expected that most cross-referrals from this panel will go to the following panels: Biological Sciences; Health; Māori Knowledge and Development; Mathematical and Information Sciences and Technology; and Pacific Research.

Elaboration of the Definition of Research

Simple data collection and collation (for example, clinical or laboratory audit) in itself is not research, but analysis and interpretation of such data may produce research outputs. Management guidelines or descriptive reviews would not usually be considered to be research outputs, but systematic reviews that comprehensively survey the literature, particularly if they appropriately apply techniques such as meta-analysis to the resulting data, are accepted as research outputs as long as they meet the PBRF Definition of Research. For participation in large multi-investigator studies to qualify as research, the individual must have had substantive intellectual input into the study, usually into design, analysis and interpretation, and not simply acted as a data gatherer. Articles that only provide commentary or deal with issues of policy, without providing either novel data or rigorous analysis, would not usually constitute research.

Platform of Research – Contextual Summary

This summary describes the scope of the individual's research over the assessment period and allows the EP to be viewed holistically. This section can also provide an understanding of the impact the research has had on the subject area as a whole, on other areas of research (if applicable) and on practice or policy. Individuals may wish to highlight leadership roles held that represent recognition of their contributions to scholarship.

If publication metrics (such as the number of papers published, the number of citations received in the assessment period, *h*-index) are provided in this section they should be contextualised as part of the wider story about the quality of the research. If metrics are given, their source (for example, Google Scholar, Web of Science) should be specified, and these may be checked by the panel.

The Summary section provides staff members with the opportunity to include information about their employment status and its impact on their research. Such information could include part-time employment and proportions of time spent in clinical or other service roles that restrict opportunities for postgraduate supervision or research contributions.

Individuals can also signal components of the EP that may require assessment by members of the panel with specific expertise (for example, commercial, professional practice, social or environmental impact) or cross-referral to other panels. The statements throughout the summary should be supported by the evidence elsewhere in the EP.

Research outputs

Types of research outputs

The research outputs most commonly submitted to the Medicine and Public Health Panel are journal articles, chapters, books or theses, although all other types of research outputs are acceptable.

Quality assurance

It is expected that research outputs should be peer reviewed. For original articles in major journals this can be assumed, but if books, chapters,

conference papers or other outputs are submitted as Nominated Research Outputs (NROs), then the reviewing or other quality-assurance process should be described.

It is recognised that sometimes a staff member may have chosen to disseminate research findings directly to communities, to practitioners or in arenas that are not subject to traditional forms of refereeing. Under these circumstances, the EP should comment in the Description field on the nature of any quality-assurance process.

Expectations for information to be provided about research outputs

Authors

Preferably, all authors of a research output should be listed. If character limits do not permit this, then an abbreviated form that makes clear the total number of authors and the position of the staff member in the author list should be provided (for example, 23rd of 59 authors).

Individual contribution

The Medicine and Public Health Panel recognises the importance of multi-authored papers in the subject areas it assesses. Researchers should make clear which aspects of a research output they have contributed to (for example, study design, data collection, data analysis, data interpretation, drafting or revision of manuscript). This should be consistent with any similar statements in the research output itself and with statements made by other researchers using the same NRO in their EP.

Description

For all types of research outputs, evidence of the quality, scientific importance and impact of the research should be provided. This is likely to include citation metrics, qualitative or quantitative descriptions of a journal's standing in its field, as well as other measures, such as changes in clinical practice or health policy. Where appropriate, other forms of evidence of scientific importance and impact of the research should be provided.

New and emerging researchers

If a Master's thesis is submitted as an NRO, this would be expected to be equivalent to at least 90 points (three-quarters of a full-time course for one year).

Proportion of Nominated Research Outputs to be examined

It is intended that the Medicine and Public Health Panel will examine at least 50 percent of NROs, with a higher percentage examined where appropriate and necessary.

Research contribution

Types of research contributions

Within medicine and public health, refereeing of papers and grants, editing journals and invitations to write editorials are important contributions.

Details of which journals and grant organisations a researcher referees for, and the frequency of reviewing or other activities, should be supplied.



For topics where these panel-specific guidelines do not provide guidance or information, the advice provided in the main guidelines on that topic is considered sufficient for submissions to the Medicine and Public Health Panel.

Invited presentations at conferences are an important measure of peer esteem. With the proliferation of new meetings (many established by commercial organisations) the status of such meetings needs to be set out, possibly including whether this is a long-established conference and whether it is organised by an academic institution or society.

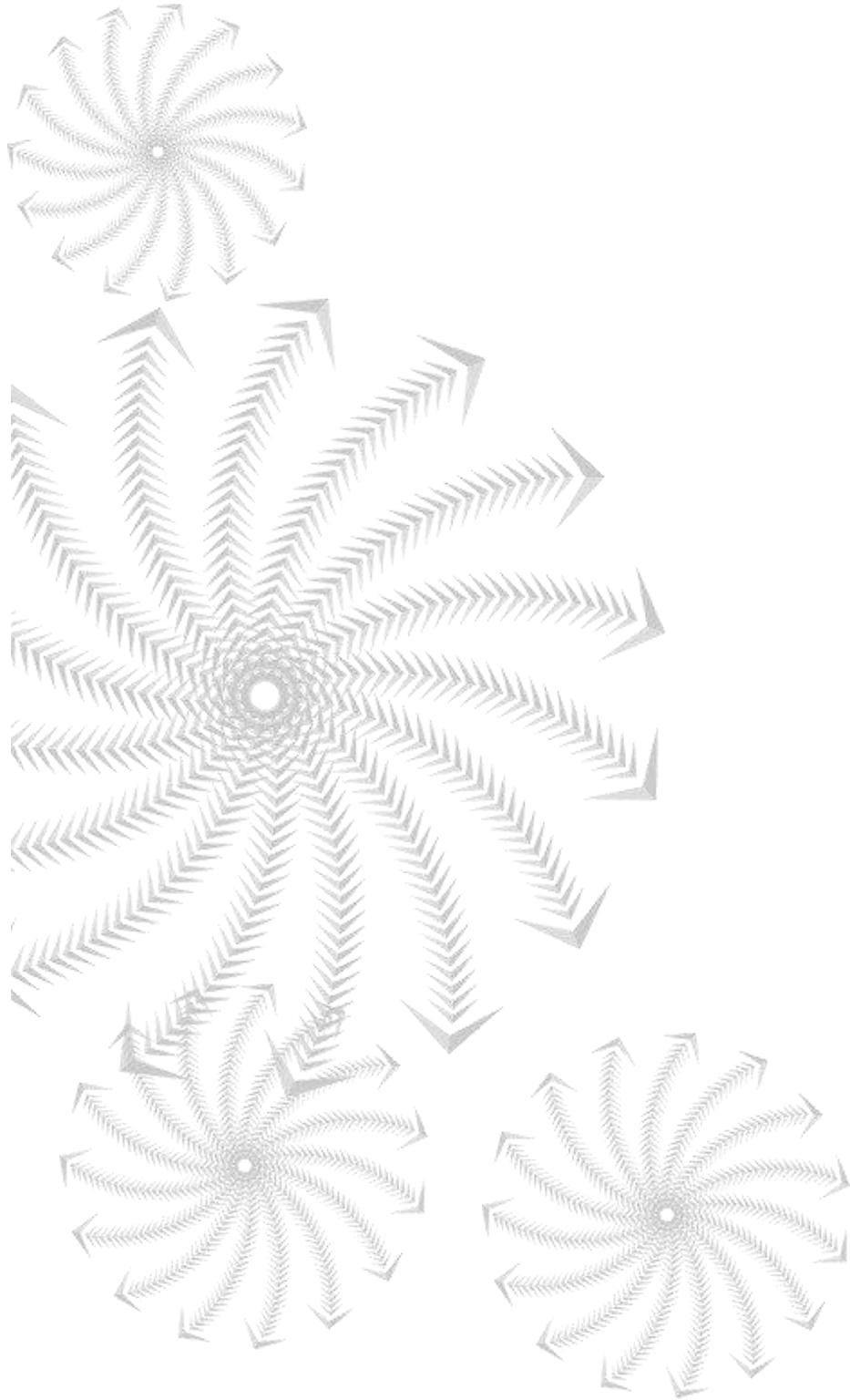
Research funding should make explicit the total funding and whether the researcher was principal investigator or a co-investigator. If a co-investigator, then the total number of investigators should be stated.

Research impact (for example, reflected in changes in clinical practice or health policy, the introduction of innovative medicines or devices, or changes in health outcomes) should be documented, where applicable.

Where possible, items falling within each type of research contribution should be clustered together (for example, conference presentations, refereeing duties, research grants) to help the panel form a coherent view of the individual's activities.

Elaboration of the descriptor for the Research Contributions component

The panel will consider evidence of peer esteem in relation to professional activities (for example, clinical and public health work) where it is explicitly linked to research.



Pacific Research

Pacific Research

These guidelines are supplementary to and must be read in conjunction with:

- › the *Guidelines for tertiary education organisations participating in the 2018 Quality Evaluation*, containing information on completing Evidence Portfolios (EPs); and
- › the *Guidelines for the 2018 Quality Evaluation assessment process*, containing information on the scoring and tie-point descriptors used to assess EPs.

For topics where these panel-specific guidelines do not provide guidance or information, the advice provided in the main guidelines on that topic is considered sufficient for submissions to the Pacific Research Panel.

For more information refer to *How to use these guidelines*.

Description of panel coverage

The Pacific Research Panel's description of coverage is designed to fully recognise quality in Pacific-related research, to encourage the further advancement of Pacific research capability and to enable research to accelerate Pacific development.

The Pacific Research Panel will evaluate all Evidence Portfolios (EPs) where there is evidence of research that reflects any or all of the following:

- › is based on Pacific research methodologies and methods
- › involves Pacific-centred subject matter
- › impacts on Pacific communities.

Pacific research is likely to include at least some of the following.

1. *Pacific methodologies and methods:*

- › drawing on research methods that are specific to Pacific cultures, languages and communities
- › researching in ways that are meaningful to various means of grouping Pacific peoples, for example, Pacific, Pasifika, Pasifeka, Pasefika
- › using research methods and methodologies from studies of the Pacific and that may be Pacific related, Pacific sensitive or Pacific inclusive
- › building the capacity and capability of Pacific peoples in research, for example, actively involving Pacific peoples as researchers and research leaders
- › conducting research in accordance with disciplinary and ethical standards and values and aspirations characteristic of the Pacific region.

2. *Pacific-centred subject matter:*

- › focusing on Pacific-centred subjects or content
- › responding to Pacific experiences – past, present and future
- › contributing to development in the Pacific region and advancing global knowledge relevant to indigenous and diasporic communities.

3. *Impacts on Pacific communities:*

- › identifying innovations and solutions that impact on Pacific peoples and communities

- › aiming to deliver benefits that improve the outcomes of Pacific peoples and communities
- › using and devising research approaches that are responsive to Pacific contexts
- › producing knowledge that has an impact on outcomes for Pacific peoples, indigenous peoples and others
- › exploring areas not traditionally considered Pacific knowledge yet that are relevant to Pacific development, such as environment, policy and security.

The Pacific Research Panel will consider research from across disciplines and ensure equitable treatment of multidisciplinary research, along with single-discipline research. This panel welcomes EPs that include evidence written and presented in one or more Pacific languages and that enquire into Pacific research methods and methodologies. Each EP will be assessed against the standards from a strengths-based view. Members with Pacific expertise on other panels may be able to advise the Pacific Research Panel further.

The Pacific Research Panel recognises that research may be transformative, innovative and adaptive. This includes research that is **reflective** of the changing realities and globalisation of Pacific peoples, as well as research that examines the significance of local identities, cultural ethos and indigenous knowledge systems and their roles in sustaining Pacific communities.

The panel will take into consideration the diverse range of discourses, methods and methodologies used by Pacific-related researchers in their respective research areas. It is expected, however, that staff will provide evidence derived from methods that are robust and that lead to trustworthy (including valid and reliable) conclusions.

Cross-referrals

The Pacific Research Panel will cross-refer where necessary. It is important that staff include sufficient information in their EP to enable the panel Chair to determine whether an EP should be cross-referred to another panel. Staff members need to be explicit in the Field of Research Description and the Platform of Research – Contextual Summary about the nature of the research presented in the EP so that panel Chairs can easily identify the primary orientation of the research outputs.

It is expected that cross-referrals to the Pacific Research Panel will come from most, and potentially all, panels. For example, an EP with a focus on climate change in the Pacific submitted for review by the Physical Science Panel could potentially be cross-referred by that panel Chair to Pacific Research. This would occur where evidence of at least one Nominated Research Output (NRO) related to Pacific Research has been documented in the EP and the Field of research description signals Pacific research methodology, method, subject matter and community impact for some work in that EP.

The Pacific Research Panel affirms that multidisciplinary and interdisciplinary EPs will be given the same weight as single-discipline EPs. This panel covers a broad range of subjects within Pacific research and is structured to optimise the evaluation of multidisciplinary and interdisciplinary research.

Where an EP has a focus on indigenous studies and/or is in an area relevant to Pacific research, the following guide should apply.

- › If the NROs are primarily concerned with any or all of the following:
 - is based on Pacific research methodologies and methods
 - involves Pacific-centred subject matter
 - impacts on Pacific communities

the EP should be assessed by the Pacific Research Panel. The Chair will determine whether a cross-referral to the Māori Knowledge and Development Panel or another relevant subject-specific panel is warranted based on the evidence provided.

Elaboration of the Definition of Research

The Pacific Research Panel will evaluate the extent to which EPs meet the PBRF Definition of Research with reference to the use of Pacific research methodologies and methods, the attention given to Pacific-centred subject matter and extent to which the research impacts on Pacific communities.

The Pacific Research Panel welcomes research outputs that are original research produced through professional practice or consultancy. The panel seeks to recognise quality research and its outcomes wherever they occur. The outcome of a professional practice or consultancy is considered research where there is evidence of a research enquiry underpinning it. To this end, the Panel acknowledges that outcomes of Pacific research may enter the public domain through a wide range of contexts. Examples include but are not limited to government policy development, culturally specific Pacific spaces and events, the World Wide Web, audio and visual recordings and commercial design.

To help the assessment of EPs, staff must clearly communicate the platform of their research and ensure that each NRO descriptor and commentary accurately describes the work, the nature of the enquiry, the context, the research processes involved and provides the evidence necessary for panel members to assess its quality. Evidence of relevant external research peer review processes should be provided.

The Pacific Research Panel will accept research that draws on professional, community and industry commissions and contracts in ways that benefit Pacific communities and meets the PBRF Definition of Research.

The Pacific Research Panel will interpret dissemination and/or publication broadly as inclusive of processes that give community and/or wider public access to the research under consideration.

The Pacific Research Panel will assess whether an EP provides evidence of world-class research. World-class Pacific research outputs are those that rank with the best regardless of the topic, theme or location. Research outputs that deal with Pacific topics or themes of primarily community-specific, regional or national focus or interest can be of world-class standard, and may rank with the best research of its discipline conducted anywhere in the world.

Platform of Research – Contextual Summary

The Pacific Research Panel encourages all staff members to fully use this section of the EP to provide a rich context that allows the EP to be viewed holistically. Staff members are expected to use this section to make connections between different aspects of the portfolio, different themes of

research undertaken, to address the overarching research contribution to the staff member's field and the impact of the research during the assessment period.

This section allows staff members to elaborate on how their work forms a cohesive, critical and original area of inquiry that contributes new knowledge and understandings. For applied areas of Pacific research, in particular, this section should highlight how published work builds systematically on previous research, is guided by theory and contributes to knowledge and understanding relevant to Pacific issues and concerns in and/or outside New Zealand.

Staff members may also wish to showcase roles in New Zealand and/or internationally that recognise their contributions to Pacific scholarship. Such contributions may be interdisciplinary and/or within specific discipline(s). This is the place to highlight discipline leadership within and beyond the tertiary education organisation and to highlight contributions at local, regional, national and international levels. It can also be the place to describe relevant social, cultural, educational or economic impacts resulting from the research. Staff members should explain how such work contributes or links to a wider research platform.

The contextual summary is the place to describe how the staff member's research work may have advanced modes of practice and contexts of dissemination and to highlight relevant peer esteem factors related to the research, such as external funding, awards and other relevant forms of external recognition.

This section also provides staff members with the opportunity to include information about their specific research context that is relevant to assessment. Such information could include employment status such as part-time employment, sub-degree programme level teaching (for example, community education) and/or factors regarding the nature of their tertiary education organisation that could restrict opportunities for postgraduate supervision or other research contributions.

Research outputs

Types of research outputs

The Pacific Research Panel expects to receive a broad range of research outputs that reflect the breadth of Pacific research. The following are examples of types of research outputs that may especially contribute to Pacific research and development:

- › presentations at Pacific community gatherings
- › oral presentations including those in Pacific languages and using Pacific cultural protocols
- › performance
- › reports for external bodies, including submissions to government, global organisations, such as the United Nations, or research for Pacific community bodies and nations
- › new artefacts including material cultural creations, such as fale, woven mats, tivaevae
- › other types of research output, for example, new sustainable fisheries management processes, energy systems, food production.

If a research output is delivered in a specific Pacific context and is submitted to the Pacific Research Panel, it may be provided in an alternative form (another type of research output). Staff must make explicit in the Description field precisely how quality has been assured, along with impact.

Pacific researchers are highly engaged in meeting community and government needs for oral research reports and presentations on Pacific development. Staff may submit evidence of repeated oral presentations associated with a specified area of Pacific development in a thematic bundle. Such bundles of oral presentations may be submitted as one research output, identifying cumulative knowledge creation. Staff members must ensure that the multiple instances of presentations are submitted as one output only and that the first (and all subsequent) instance of the presentation was within the assessment period.

Repeated invited research presentations around a Pacific development theme are evidence of meaningful engagement, potential cumulative impact and the end-users regard for the relevance of the research to Pacific communities.

For topics where these panel-specific guidelines do not provide guidance or information, the advice provided in the main guidelines on that topic is considered sufficient for submissions to the Pacific Research Panel.

Quality assurance

While it is expected that most research outputs submitted to the Pacific Research Panel will be quality assured, non-standard quality-assurance processes might also be included. If a non-standard quality-assurance process has been used (for example, in communities, culture-specific settings, organisations and government agencies), staff members are expected to explain in the Description field precisely how quality has been assured, along with impact. For example, a non-standard quality-assurance process in a government agency might be that researchers who have relevant disciplinary expertise and relevant Pacific research expertise independently review a commissioned Pacific research output.

As signalled above, under types of research outputs, research outputs can be delivered in a specific Pacific context and submitted to the Pacific Research Panel in an alternative form, including in thematic bundles. Greater scrutiny may be applied by the panel to non-quality-assured or non-standard research outputs than a quality-assured and standard research output.

EPs may include information in the Description field on the citation of an output and the relative standing of a journal, publisher or conference. If metrics are cited (including Google Scholar), the EP should contextualise the citation within a discipline or subdiscipline. Staff members should provide such relevant contextual information, because there is no agreed list of journal rankings in New Zealand or Australia in most disciplines.

Staff members are encouraged to indicate the relative ranking of a journal in its field or subfield. For example, the acceptance rate for articles for that journal (if known) or other useful contextual information may be provided. Staff members should note, however, that although journal rankings may inform the assessment of journal quality, the primary focus of the Pacific Research Panel will be on the NRO itself. The Pacific Research Panel will assess outputs on their research merits according to the PBRF Definition of Research.

Expectations for information to be provided about research outputs

Authors

Where there are multiple authors, staff members must ensure that their contribution to the research output is clearly defined in the Individual

Contribution section. In cases where co-authors include the same NRO in their EPs, staff members are encouraged to confer about the details of their contributions, to ensure that there is no conflict in the information provided.

Individual contribution

The staff member's original research contributions to research outputs should be carefully stated. Outputs that are multi-authored must be supported by a full description of the contribution being claimed, such as intellectual input, planning and writing.

A description of the staff member's role and their relationship to co-authors might also be helpful, whether the co-authors are students, postdoctoral fellows, New Zealand or overseas colleagues or collaborators. The presence of Pacific community members as co-authors may be evidence of enacting Pacific research methodologies (for example, actively involving Pacific peoples as researchers and research leaders and building the capacity and capability of Pacific peoples in research).

Description

A number of dissemination channels are broadly recognised as premier research outlets. These can be general (but high-profile) journals relevant to the transdisciplinary nature of Pacific research. Equally, there are specialist outlets for Pacific research that are leading in their specific field. Staff members must make their own judgements as to the relative weight they give to presenting research outputs through general and specialist channels.

It is recognised that a staff member may have chosen to disseminate research findings directly to communities, to practitioners or in arenas that are not subject to traditional forms of refereeing. Under these circumstances, the EP should indicate in the Description field whether any quantified measures of quality or impact of those outputs exist and should explain precisely how quality has been assured, along with impact.

Staff members completing EPs may wish to indicate in some way the relative ranking and impact factor a journal may have. Where information in the form of impact indices is available, that information may be included in the Description field when describing why a research output represents one of the staff member's best outputs. Similarly, staff could indicate the impact of one's research for users of that research (including Pacific-focused users) drawing on robust but non-standard factors. The Pacific Research Panel recognises that subject areas have different impact indices and these indices will not be used as proxy for quality.

New and emerging researchers

The Pacific Research Panel will focus primarily on quality when assessing the research performance of both established and new and emerging staff members. The minimum requirement for an EP to be accepted for assessment is one output. In determining whether this would be sufficient for the EP to be evaluated as research active, the Pacific Research Panel will consider the nature of the research (such as how much research time is required to produce an output), the type of research output and rigour of quality assurance, along with how much of the assessment period was available for the researcher to do research.

While the Pacific Research Panel views doctoral theses as the norm, Master's theses (at least 90 credit equivalent of research) would be acceptable as an NRO for new and emerging researchers. This is particularly the case for disciplinary areas where a Master's degree has been the customary degree required for employment in a tertiary education organisation in New Zealand. Master's degrees with industry-style projects with low research emphasis or low-credit value would not normally be acceptable as NROs for submission to the Pacific Research Panel.

Elaboration of the descriptor and tie-points for the Research Output component

Tie-point six

The Pacific Research Panel recognises that world class denotes a standard, not a type, focus or location of research. Other indigenous research will also provide an opportunity for benchmarking at a world-class level. The significant and substantial contribution of research outputs to Pacific knowledge and development, in particular, will be important in demonstrating performance at this level.

Proportion of Nominated Research Outputs to be examined

It is intended that the Pacific Research Panel will collectively examine 100 percent of NROs.

Research contribution

Types of research contributions

The Pacific Research Panel recognises that a wide range of research contributions are relevant to the subject areas covered by the panel. The research contribution component describes the contribution and recognition of a staff member's research and research-related activities.

The Pacific Research Panel will consider examples of the 12 research contribution types, including but not limited to:

- › development and maintenance of strong, meaningful and responsive links with end users of research, including the transfer of knowledge (in Pacific and other languages) to participants and/or stakeholders in research, such as Pacific communities, and agencies and organisations working with Pacific peoples
- › the use of research methodologies and methods developed from Pacific research to expand knowledge and research practices in disciplines and subject areas outside the study of the Pacific
- › promotion of research culture and practices within Pacific communities through capacity and capability development, facilitation and leadership
- › expanding Pacific research capacity through mentoring, supervision and promoting Pacific research.

A number of Pacific research contribution activities are broadly recognised as world-class research outlets. Research contributions that reflect the esteem of peers considered as experts in their field or that show how the staff member contributes to a world-leading research environment could be considered world class.

Research contributions can be activities inside academia and society generally that are based on Pacific research methodologies and methods, Pacific centred-subject matter and research that impacts on Pacific communities. Where information in the form of impact indices is available, that information may be included in the Description field when describing why a research contribution represents one of the staff member's best outputs.

The Pacific Research Panel is aware that some staff members will be working across a combination of community-based, profession-based and academic research positions. If any research contribution is delivered in a specific Pacific context it can be submitted for the panel to consider.

Uptake and impact

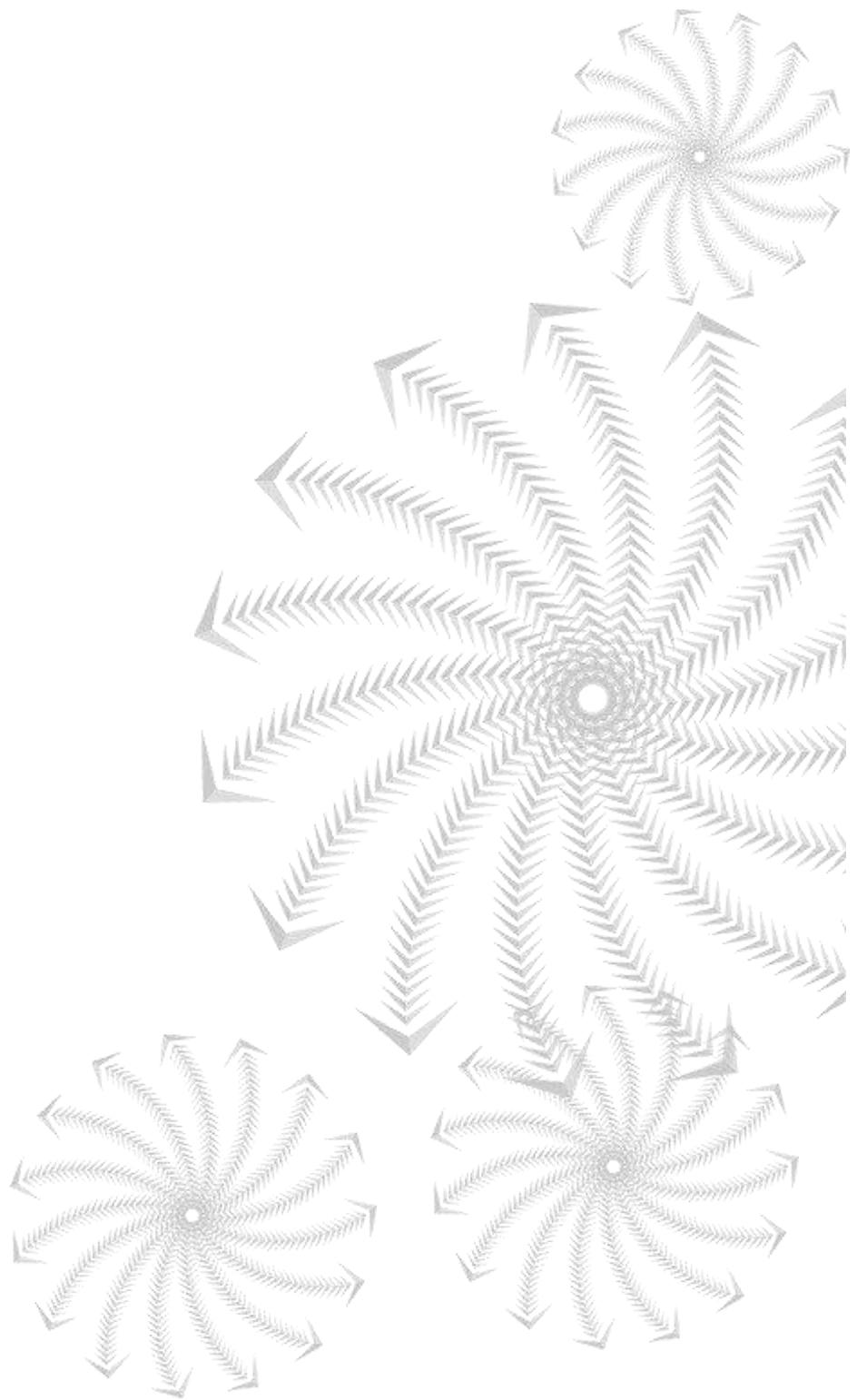
Factual evidence is preferred, but where subjective evidence is provided, the staff member is expected to demonstrate, insofar as is possible, the independence of the evidence source and its authenticity.

- › Development and maintenance of strong, meaningful and responsive links with end users of research, including the transfer of knowledge with Pacific communities.
- › Leading or participating in policy development activities that have a national or international impact on the way in which research-investment or research-funding decisions are made by government or private sector agencies.
- › Leading or participating in Pacific research capacity- and capability-raising activities that have an impact within Pacific communities nationally or internationally through building the research knowledge of research participants, providing formal research qualification opportunities for Pacific peoples and/or providing training opportunities in research.
- › Adoption of an output of the staff member as standard practice – for example, a type of design, an analytical method, paradigm, a textbook, a research-based standard. This can include recent adoption of outputs produced outside this assessment period.
- › Sponsored professional practice or consultancy that draws on research expertise and knowledge and leads to significant societal, economic or environmental impact for the sponsor may be a valid research contribution item if it demonstrates the practical impact of the research (even if the work itself does not meet the definition of research).
- › Leadership in research commercialisation. Where there has not been sufficient time for significant commercial outcomes (impacts) to be achieved for research and research outputs produced in the assessment period (for example, from Intellectual Property such as patents), the EP should provide evidence of commercial support for the research and progress towards commercialisation.

Elaboration of the tie-points for the Research Contributions component

Tie-point six

Extensive networks and/or collaborations may include those with indigenous researchers and research institutions within and outside New Zealand. Research and disciplinary leadership may include contributions to Pacific knowledge and the knowledge of other indigenous peoples in New Zealand, the wider Pacific and beyond.



Physical Sciences

Physical Sciences

These guidelines are supplementary to and must be read in conjunction with:

- › the *Guidelines for tertiary education organisations participating in the 2018 Quality Evaluation*, containing information on completing Evidence Portfolios (EPs); and
- › the *Guidelines for the 2018 Quality Evaluation assessment process*, containing information on the scoring and tie-point descriptors used to assess EPs.

For topics where these panel-specific guidelines do not provide guidance or information, the advice provided in the main guidelines on that topic is considered sufficient for submissions to the Physical Sciences panel.

For more information refer to *How to use these guidelines*.

Description of panel coverage

The Physical Sciences Panel will assess Evidence Portfolios (EPs) in the subject areas described below.

The descriptions should be considered a guide – they are not intended to be exhaustive.

Chemistry and physics

These two subject areas include but are not limited to theoretical, experimental and applied physics and chemistry, and inorganic, organic, physical and analytical chemistry including condensed matter and low temperature physics; astrophysics and astronomy; nuclear and high energy physics; instrumentation and engineering physics; environmental physics and chemistry; biophysics; medicinal chemistry; medical physics and chemistry and biological chemistry; optics and electronics; atmospheric, oceanic and climate physics and chemistry; materials physics and chemistry; organometallic chemistry; forensic physics and chemistry; spectroscopy; polymers; food chemistry; computational chemistry; structural chemistry; crystallography and natural products chemistry.

Earth sciences

This subject area includes but is not limited to meteorology and climatology; climate change; hydrology; soils; coastal processes; geomorphology; glaciology; physical geography; petrology; geochemistry; mineralogy; stratigraphy; paleontology; paleobiology; geophysics; engineering geology; volcanology; sedimentology; tectonics; structural geology; marine geology; hydrography; paleo-environmental geology; remote sensing; numerical modelling; Antarctic geosciences; and all other branches of geology and surveying.

Cross-referrals

The Physical Sciences Panel affirms that multidisciplinary and interdisciplinary EPs will be given the same weight as single-discipline EPs. The panel is structured to optimise the assessment of multidisciplinary and interdisciplinary research.

Staff members with at least one NRO in an area covered by another panel and who consider their research to be interdisciplinary should indicate in the Field of Research Description that they also work in another discipline and include

sufficient information in their EP to enable the panel Chair to determine whether an EP should be cross-referred to another panel.

It is expected that most cross-referrals to and from this panel will be with the following panels: Biological Sciences; Engineering, Technology and Architecture; Mathematical and Information Sciences and Technology.

Platform of Research – Contextual Summary

This section allows the EP to be viewed holistically and should be used to make connections between different aspects of the EP and different themes of research undertaken by the staff member. We recommend that statements in this section be explicitly connected and cross-referenced to supporting evidence elsewhere in the EP.

Staff members are encouraged to describe the scope of their research over the assessment period. The Physical Sciences Panel would consider it useful to see a brief summary of the total publication record for the assessment period (including research outputs not included in the EP), which may include metrics such as total number of research outputs and categorisation by research output type (taking into consideration the 2,500 character limit of the Platform of Research – Contextual Summary field).

This section may also be particularly important in providing an understanding of the impact the research has had on the subject area as a whole or to other subject areas that benefit from research results and outcomes, for example, chemical synthesis of materials subsequently used for biological studies.

Staff members may wish to provide total publication metrics (such as the number of citations received or the number of papers published in the assessment period) in this section.

All metrics should be contextualised by the staff member as part of the wider “story” about the quality of their research. If these are included, for example, total citations or *h*-index, the source of the information should be clearly stated (for example, Scopus, Web of Science, Google Scholar). The panel may check the number given but will not use an individual’s publication metric in assessing an EP if it is not quoted in the EP.

Research outputs

Types of research outputs

It is expected that most research outputs submitted to the Physical Sciences Panel will be fully refereed publications in relevant literature that describe original research. This may include international and New Zealand literature of world-class standing. All types of research outputs will be considered on their merits.

Atypical but acceptable research outputs could include (but are not limited to) open-file reports or other evidence of research of significant relevance, granted patents, and other types of intellectual property.

Determining the research component of atypical NROs is more subjective and staff members should provide a clear and evidenced statement of the research content and their contribution.

Staff members are encouraged to indicate in some way the relative ranking of a journal within a discipline or subdiscipline along with any application and impact of their research.

Quality assurance

Staff members are expected to explain how quality has been assured in the Description section of the NRO. This is particularly important where a non-standard quality-assurance process has been used, where quality assurance varies significantly and/or is unlikely to be common knowledge, for example with book chapters, conference contributions and reports. Generally, quality-assured research outputs will be given more weight than their non-quality-assured counterparts, however, the absence of quality assurance will not automatically be taken to imply low quality.

For journal articles and books, the Physical Sciences Panel will take note of information provided to it about the rigour of the editorial review process and standing of members of the editorial board and/or book publishers. The panel cannot be assumed to have knowledge of the specific quality-assurance process used for a number of output types (for example, some conference papers and abstracts, books and technical reports). To that end, the process of quality assurance for NROs that are not independently peer reviewed journal articles should be articulated and supported by evidence.

Staff are encouraged to indicate the relative ranking of a journal in its field or subfield. For example, the acceptance rate for articles for that journal (if known) or other useful contextual information may be provided.

The panel, however, emphasises that while journal rankings may inform assessment of journal quality, it is the NRO that is being assessed.

Citations for NROs may be included and will be considered as part of a holistic appraisal of the EP. The source of the citation must be stated (for example, Scopus, Web of Science, Google Scholar).

Evidence of quality-assurance standards for a confidential report may be:

- › review processes employed by users of commissioned or funded research including commercial clients and public bodies
- › a statement made by a client representative, a client's contractor or consultant where they are an expert in the field (this should be able to be validated)
- › evidence of client investment in development activities consequent upon the confidential report.

Such evidence from end users that pertains to quality assurance should be submitted as supporting information.

Where research has resulted in a commercial product for a firm, the quality-assurance process used by the firm to evaluate the research results should be described in the Description section with any formal reporting on the outcome of the process and supporting statements by the firm included.

Expectations for information to be provided about Nominated Research Outputs

Authors

The panel is aware that in the physical sciences there are different conventions for the order in which author names appear in journal articles. An indication of what is implied by the position of the staff member in the list of authors should be given.

A description of the staff member's role and their relationship to co-authors might also be helpful – that is, whether the co-authors are students, postdoctoral fellows, New Zealand or overseas colleagues or collaborators.

Some journals require authors to articulate the contributions made by each author in the publication. This information would be helpful in assessing the NRO if it is not presented in the submitted version of the NRO.

In cases where co-authors include the same NRO in their EPs, staff members are encouraged to confer about the details of their contributions, to ensure that there is no conflict in the information provided.

Individual contribution

Where there are multiple authors, staff members must ensure that their contribution to the research output is clearly defined in this section.

Contributions can include leadership elements that have led to the research outcome, where appropriate, for example:

- › involved with the original inspiration for it in the context of its importance to the wider field of study
- › obtained the funding to do the research
- › had the specific idea for the paper itself and have contributed to its scholarship through the technical development, guidance, removal of roadblocks
- › mentored a more junior staff member or student
- › shared the writing and other tasks.

Description

When a journal article is cited as a research output, staff members are encouraged to provide any citation and publication metrics as supporting evidence. The source and basis of the metric value should be identified, for example, Google Scholar for period 2012 to 2017, or any other parameters used in the search (for example, including or excluding self-citation).

In most EPs, a small number of metrics should be selected that are most appropriate to the field and best support the case for quality and/or impact.

The *relative* ranking that a journal has in a disciplinary or subdisciplinary context may be provided and the source made explicit.

When a book is cited as an NRO, it will be important to identify how it meets the Definition of Research.

When a granted patent is cited as an NRO, the panel will consider the number of countries selected at national phase, details from PCT ISR/IPER, licensing or other commercialisation outcomes, commercialisation revenue to the tertiary education outcome and commercialisation expenditure by the licensee or others. This information must be included in the Description section of the NRO.

When a conference contribution is cited as an NRO, refereed papers published in proceedings and invited keynote addresses would normally rank ahead of non-refereed research outputs such as oral presentations, posters, abstracts, especially if not published in proceedings.

When an invited keynote or plenary addresses (Conference Contribution – Other) are cited as an NRO, evidence of the degree of exclusivity and importance of the forum and invitation should be provided. This might include the number of attendees at the conference, total number of invited keynote or plenary speakers, basis for the invitation or selection and financial and/or other support for the invitation. If the invitation was not taken up, reasons for this decision should be provided.

For all types of research outputs, evidence of the quality, scientific importance and impact of the research should be provided. Where the research output is non-standard or non-quality-assured, however, more reliance may be placed upon the actual or potential downstream impact of the completed work. The assessment of quality and impact would then be helped by provision of evidence of the following types (in no particular order):

- › demand for consultancy or professional practice based on the research outcomes or knowledge
- › how the research has led to further research developments or has been applied
- › funding support for the research or its continuation including co-investment by a relevant business (magnitude relative to the business size)
- › commercialisation of the research including licensing, formation of spin-out companies and intellectual property (IP) protection
- › use of the research in standards, codes of practice or design guides
- › maintenance and defence of patents and other IP and/or expansion of coverage to other jurisdictions
- › adoption of the research outcomes by other research groups
- › policy, strategy or statutory change introduced as a result of the research
- › positive citations of the research
- › winning of national or international competitions, prizes or awards
- › the rigour of the peer-review process (including by the client for commissioned research)
- › incorporation of the research findings into standard textbooks and industry handbooks or guides
- › commercial, environmental or social success of the research across a range of indicators, such as reduction in resource use or environmental impact, cost savings, sales of products or services, improved health, higher productivity, improvements to existing businesses, establishment of new businesses, new processes, new products, new services, improvements to existing products, improved quality, new employment and so on. Evidence might include the scale and time span of the impact and industry, business and community perceptions and responses to the impact
- › quoted testimony from clients or end users of the research that succinctly and independently verifies the impact of the research (for example, a senior industrialist might indicate the industry significance of the research outcomes). In such cases, the name, role and professional standing of the source and their relationship to the staff member should be declared to allow assessment of independence and significance of the evidence

- › the interaction between the researcher and the industry, business and community including responsiveness and/or awareness of industry, business and community needs.

Proportion of Nominated Research Outputs to be examined

It is intended that the Physical Sciences Panel will examine at least 50 percent of NROs, with a higher percentage where appropriate and necessary.

Elaboration of the descriptor and tie-points for the Research Output component

Tie-point six

Evidence of a major contribution to all NROs, with some NROs published in major well-recognised journals. In this regard, a “major contribution” could include being the primary researcher who carried out a major part of the work, or a research group leader responsible for securing funding and resources and being the primary supervisor. One or more NROs might be the equivalent of this in another form, for example, books, book chapter, refereed conference paper or a patent.

Tie-point four

Evidence of a significant contribution to all NROs, with some NROs published in well-recognised journals. In this regard, a “significant contribution” could include performing a significant, but not major, part of the research or playing a significant, but not major, role in securing resources or in supervision. One or more NROs might be the equivalent of this in another form, for example, books, book chapter, refereed conference paper or a patent.

Tie-point two

Evidence of a contribution to all NROs, with some NROs published in well-recognised journals. One or more NROs might be the equivalent of this in another form, for example, books, book chapter, refereed conference paper or a patent.



For topics where these panel-specific guidelines do not provide guidance or information, the advice provided in the main guidelines on that topic is considered sufficient for submissions to the Physical Sciences Panel.

Research contribution

Types of research contributions

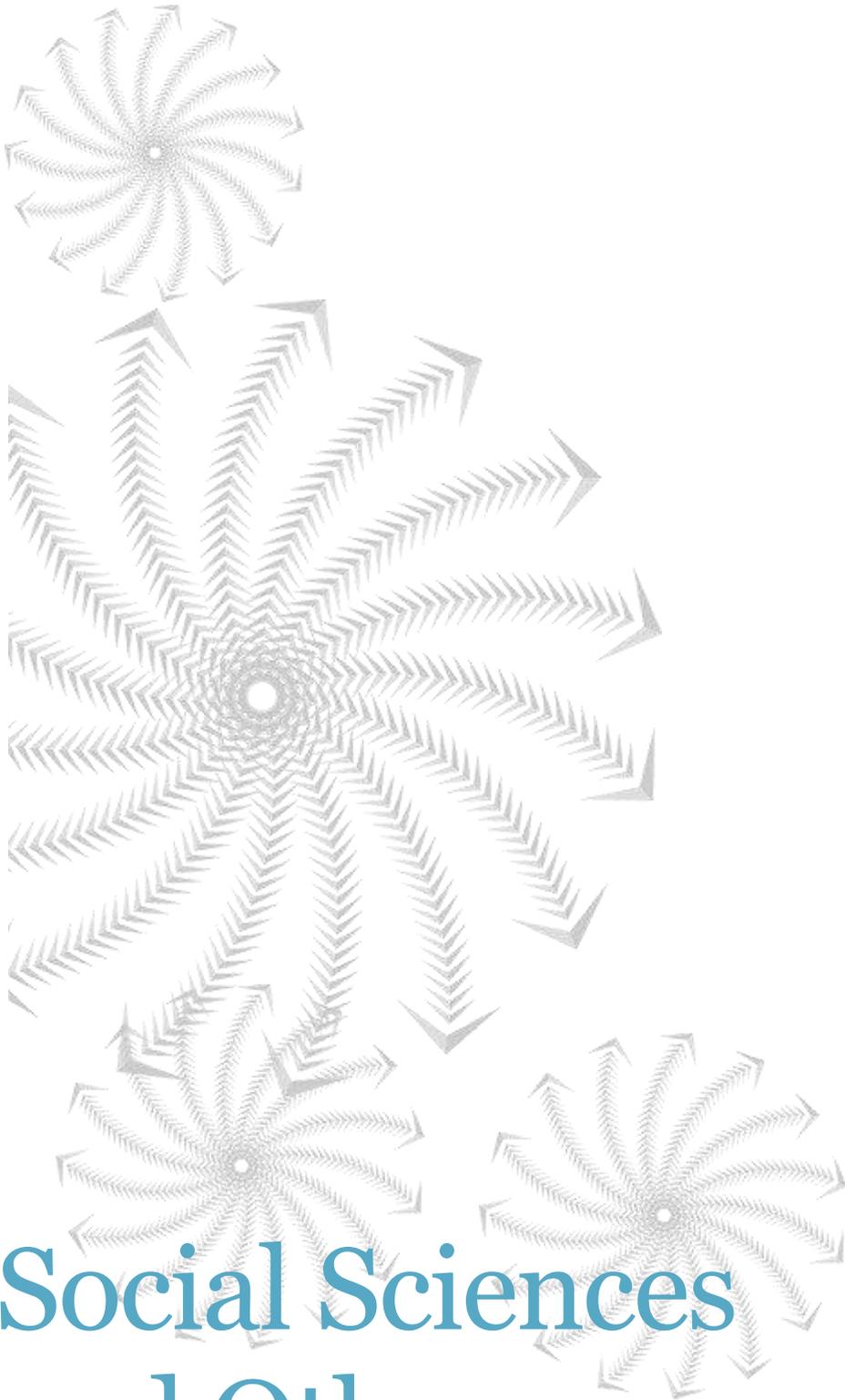
The Physical Sciences Panel provides guidance on useful evidence to support examples of research contributions, grouped below under the Research Contribution types from the main guidelines:

- › Contribution to research discipline and environment:
 - directorships of research centres or research groups – stating, for example, how many researchers work in the centre or group, and the budget.
- › Facilitation, networking and collaboration:
 - hosting visiting researchers and evidence of interaction.
- › Invitations to present research or similar:
 - invited presentations at conferences are an important measure of peer esteem. With the proliferation of new meetings (many established by commercial organisations), the status of such meetings needs to be set out, such as information about whether this is a long-established

conference and whether it is organised by an academic institution or society.

- › Research funding and support:
 - research funding should make explicit the total funding and whether the researcher was principal investigator or a co-investigator (if a co-investigator, then the total number of investigators should be stated)
 - include any of the following that are applicable:
 - total number and value received in the period
 - list of funders
 - your role in the funded project (for example, principal investigator, associate investigator)
 - contribution to preparing the grant application
 - success rates in the grants won or rarity of winning funding from the external body or company, or any other indicator of the rigour of the application and assessment process (competitive, peer-reviewed)
 - whether it was continuing or first-time funding from the body, company or external group.
- › Research prizes, fellowships, awards and appointments:
 - verifiable and objective assessment of the rarity or difficulty of achieving the prize or fellowship (for example, number awarded, frequency given, size of field) and the rigour of nomination, application and/or assessment process may be included.
- › Researcher development:
 - number of postdoctoral fellows or equivalent working under supervision of the staff member and evidence of interaction.
- › Reviewing, refereeing, judging, evaluating and examining:
 - evidence of participation on relevant degree or professional qualification-accreditation panel and on research funding agency review panels
 - refereeing of papers and grants, editing journals and invitations to write editorials. Details of which journals and grant organisations a researcher referees for and the frequency of reviewing or other activities should be supplied.
- › Student factors:
 - in regard to the supervision of postgraduate students, do not provide the name of the students, but include information such as:
 - numbers supervised in the period by type (for example, doctoral, research Master's, professional or taught Master's, honours, postgraduate diploma)
 - numbers completed in the period by type
 - level of supervision (number in a lead, co- or secondary supervising role).
 - numbers of publications in the period co-authored with students (or alternatively as a separate research contribution student factor)
 - how postgraduates have contributed to the main area or areas of your research (for example, 10 of 12 in Area A and 2 of 12 in

- Area B; or by listing titles of research undertaken by students supervised) to link supervision to your overall research profile
- prizes won by postgraduates under your supervision (or alternatively as a separate research contribution student factor).
- › Uptake and impact:
- factual evidence is preferred, but where subjective evidence is provided, the onus is on the staff member to demonstrate, insofar as is possible, the independence of the evidence source and its authenticity
 - development and maintenance of strong, meaningful and responsive links with end users of research, including the transfer of knowledge
 - industry adoption of an output of the staff member as standard practice. This can include recent adoption of outputs produced outside this assessment period
 - client-sponsored professional practice or consultancy that draws on research expertise and knowledge and leads to significant economic, environmental or societal impact for the client may be a valid research contribution item if it demonstrates the practical impact of the research (even if the work itself does not meet the definition of research)
 - leadership in research commercialisation, spin-off companies and incubators
 - leading or participating in policy development activities that have a national or international impact on the way in which research-investment or research-funding decisions are made by government or private sector agencies
 - numbers, coverage and significance of granted patent families
 - maintenance, uptake, defence and use of IP including licensing and creation of royalty income streams
 - where there has not been sufficient time for significant commercial outcomes (impacts) to be achieved for research and research outputs produced in the assessment period (for example, from IP such as patents), the EP should provide evidence of commercial support for the research and progress towards commercialisation.



**Social Sciences
and Other
Cultural/Social
Sciences**

Social Sciences and Other Cultural/Social Sciences

These guidelines are supplementary to and must be read in conjunction with:

- › the *Guidelines for tertiary education organisations participating in the 2018 Quality Evaluation*, containing information on completing Evidence Portfolios (EPs); and
- › the *Guidelines for the 2018 Quality Evaluation assessment process*, containing information on the scoring and tie-point descriptors used to assess EPs.

For topics where these panel-specific guidelines do not provide guidance or information, the advice provided in the main guidelines on that topic is considered sufficient for submissions to the Social Sciences and Other Cultural/Social Sciences Panel.

For more information, refer to *How to use these guidelines*.

Description of panel coverage

The Social Sciences and Other Cultural/Social Sciences Panel will assess Evidence Portfolios (EPs) in the subject areas described below.

The descriptions should be considered a guide – they are not intended to be exhaustive.

The panel will adopt assessment processes that enable it to recognise and treat, on an equal footing, excellence in research across the broadest spectrum of applied, practice-led, basic and strategic research, however, it is conducted or disseminated, and to look to identify excellence in different forms of research endeavour including interdisciplinary and collaborative research. The panel recognises the diversity of research practice and outputs and will give all careful consideration.

Anthropology

Archaeology; biological anthropology; ethnomusicology; and socio-cultural anthropology.

Communications, journalism and media studies

Communications, journalism, media studies including online/digital media; development communication; internet studies; audiovisual studies; film and screen studies.

Geography

Human geography.

Political studies

Political science; political theory; comparative politics; international relations; and public policy studies.

Psychology

Psychology (social, cognitive and behavioural science disciplines and methodologies) including behavioural neuroscience; biological psychology;

clinical psychology; cognitive neuroscience; cognitive psychology; community psychology; developmental psychology; health psychology; industrial and organisational psychology; personality psychology; and social psychology.

Social work

Sociology

Sociology; social policy; criminology; demography and population studies.

Other cultural/social Sciences

Other cultural/social sciences includes area and interdisciplinary studies, such as Māori studies; Pacific studies; Asian studies; European studies; cultural studies; social work; gender studies; Lesbian, Gay, Bisexual and Transsexual studies; family studies; sports studies; cultural heritage; museum ethnography; tourism studies; development studies; and leisure studies.

The main consideration for the allocation of an EP to the Social Sciences and Other Cultural/Social Sciences Panel is that it primarily includes research within a social science discipline or social science methodologies are used.

Cross-referrals

Panel Chairs can cross-refer EPs to one or more other panels. If an EP includes material (especially in Nominated Research Outputs (NROs)) that is covered by other panels, then the panel Chair will assess how significant this material is and/or whether there is appropriate expertise on the Social Sciences and Other Cultural/Social Sciences Panel, and whether a cross-referral is required. If an EP primarily relates to the subject description of another panel, then that EP should be submitted to that panel. This is most likely when at least two of the NROs contain material that is relevant to another panel. The panel expects that the contextual summary would signal if this is a possibility.

It is anticipated that most cross-referrals will involve the following panels: Māori Knowledge and Development; Pacific Research; Education; Health; Humanities and Law; and Creative and Performing Arts.

The information on panel coverage above indicates the discipline and subject areas that would normally be considered by the Social Sciences and Other Cultural/Social Sciences Panel. However, there is considerable scope, given the diversity of EPs to be considered by this panel, for there to be intersections with the subject areas of other panels. The Chair will consider whether the subject area primarily relates to this panel's subject areas. If you are unsure as to which panel to submit to, you should review their panel-specific guidelines to determine which of the panels represents the majority of your NROs.

The Social Sciences and Other Cultural/Social Sciences Panel would expect to assess (as the primary panel or as a cross-referral) EPs in other subject areas or disciplines that include research that uses a social science methodology. For example, the panel may consider EPs in such areas as planning, transport, environmental studies, area studies and labour studies if they are primarily concerned with research outputs generated using social science paradigms or methodologies.



For topics where these panel-specific guidelines do not provide guidance or information, the advice provided in the main guidelines on that topic is considered sufficient for submissions to the Social Sciences and Other Cultural/Social Sciences Panel.

Platform of Research – Contextual Summary

To help the assessment, it is essential that each researcher clearly communicates the platform of their research and provides an overview of their work during the period of assessment. It provides an opportunity to describe how their work has contributed to new understanding and practices and the impacts of their research. This is also an opportunity to signal those components that may require cross-referral.

Research outputs

Types of research outputs

The Social Sciences and Other Cultural/Social Sciences Panel will expect to receive a range of outputs that might be presented to many other panels, and all research outputs appropriate to and recognised by the particular discipline will be considered. Each NRO descriptor and commentary should accurately describe the work, elucidate the nature of the enquiry, the research content, context, research processes involved and outline the evidence necessary for panel members to assess its quality.

If a book published on the occasion of an exhibition is a major stand-alone publication in its own right, the book may be considered a separate output and be submitted as an authored (or edited) book. If this is the case, the researcher should indicate at the end of the exhibition entry that: “This exhibition was complemented by [book title]”. At the end of the authored book or edited volume entry, a phrase such as: “This book was published on the occasion of [exhibition title]” should be included.

The following types of research outputs should not be presented as stand-alone outputs when they appear in substantially the same form as an original output that is also submitted as an NRO or Other Research Output, unless there is additional scholarly input:

- › foreign language versions of work originally published in English
- › English language versions of work originally published in a foreign language
- › electronic copies of work originally published in print and print copies of work originally published electronically.

Quality assurance

Staff members are expected to nominate quality-assured research outputs for the majority of disciplines covered by the Social Sciences and Other Cultural/Social Sciences Panel. Quality assurance will include peer review for journals (including, where appropriate, online and e-journals), referee reports for books and conference papers and other equivalent quality-assurance processes. Quality-assurance processes differ considerably and each will be considered in the context of the practices of a particular discipline or subdiscipline.

If a non-standard quality-assurance process has been used (for example, in relation to practice-based research outputs or creative research outputs such as a film, video or exhibition), staff members are expected to explain in the Description field precisely how quality has been assured.

Expectations for information to be provided about research outputs

Individual contribution

The Social Sciences and Other Cultural/Social Sciences Panel is aware that it is common for original research papers to have more than one author and that different research disciplines or groups have varying understandings about authorship and the order of authorship. Staff submitting EPs should clearly indicate the nature of their contribution to the particular output. Where there are multiple authors, staff members must ensure that their contribution to the research output is clearly defined in the individual contribution section. In cases where co-authors include the same NRO in their EPs, staff members are encouraged to confer about the details of their contributions, to ensure that there is no conflict in the information provided.

Staff members should indicate the following types of information:

- › whether they are the supervisor (or principal investigator) of the research, and the extent to which their authorship reflects their position as head of group or because of material contribution
- › what is the balance of their contribution between conceptual, research design, data gathering, data testing and analysis, interpretation of results and level of contribution (for example, major/moderate/minor) to writing
- › what is the place of this piece of research in the staff member's portfolio of recent research, for example, one of several published papers by the author in this area.

Description

EPs may include in the Description field information on the citation of an output and the relative standing of a journal, publisher or conference. If metrics are cited, the EP should contextualise the citation within a discipline or subdiscipline. There is no agreed list of journal rankings in New Zealand or Australia in most disciplines. Outputs will be assessed on their intrinsic research merit and according to the PBRF Definition of Research.

Where appropriate, staff members may choose to indicate citation counts or impact factors of the journals in which outputs are published. This can be either in relation to specific NROs, and included in the Description section for that NRO, or in relation to all research outputs within the assessment period, or for a longer period, and included in the Platform of Research – Contextual Summary.

EPs might include information in the Descriptive Field on the citation of an output and the relative standing of a journal, publisher or conference. If metrics are cited, the EP should contextualise the citation within a discipline or subdiscipline. The Social Sciences and Other Cultural/Social Sciences Panel will bear in mind that citation counts accumulate over time (so that counts will be less for recent articles than for earlier ones) and that impact factors differ markedly within different disciplines and subdisciplines. Such metrics are a guide only, and the panel will use them with caution.

While the panel will be primarily interested in assessing the quality of the NROs and the staff member's contribution to them, it may also consider the quality of the outlets through which the research has been published. Staff members completing EPs may wish to indicate in some way the relative ranking a journal may have in any given field or discipline.

New and emerging researchers

In the case of new and emerging researchers, a thesis can be submitted as an NRO. This would normally be a PhD for most fields in social sciences and other cultural/social sciences, although there might be some fields where a Master's or other qualification is standard. In these cases, an explanation of how the thesis meets the Definition of Research should be provided.

Elaboration of the descriptor and tie-points for the Research Output component

The Social Sciences and Other Cultural/Social Sciences Panel will use the same standards to assess all types of research output, and overall research quality will be the critical factor. The panel will specifically consider the extent to which the research:

- › is recognised as being of high quality
- › is original, representing an intellectual advance or a significant contribution to knowledge
- › exhibits intellectual and methodological rigour and coherence
- › demonstrates intellectual and/or disciplinary impact
- › demonstrates impact in the wider community, for example, through influencing the direction of policy or practice.

The scope of these judgements may overlap and the list does not imply any particular rank order.

Tie-point six

Research outputs that deal with topics or themes of primarily local, regional or national focus or interest can be of world-class standard if they exhibit characteristics stated in the main guidelines. Research outputs may be supported by peer-recognition and end-user recognition. Such works will be of the highest quality in their theoretical approach and sophistication, in their evidence or material base and use of that evidence or material, in argument, originality and presentation or creativity.

Proportion of Nominated Research Outputs to be examined

The Social Sciences and Other Cultural/Social Sciences Panel will examine at least 50 percent of NROs, with a higher percentage examined where appropriate and necessary. For example, the panel expects to examine a higher proportion of NROs where the quality assurance of such NROs might be unclear or in those cases where the EP is around the tie-points.

Research contribution

Types of research contributions

The Social Sciences and Other Cultural/Social Sciences Panel recognises that a number of activities contribute to the research environment in social sciences and other cultural/social sciences, and these might include (but are not limited to):

- › published commentaries on existing works and research
- › book reviews
- › reading manuscripts and providing feedback and/or an assessment
- › public lectures
- › hosting department colloquia

- › research-related collegial activities
- › contributions to policy development at local or national levels
- › providing advice and commentary to public bodies
- › contributing to community development, including in Māori and Pacific communities
- › influence on other researchers or community or national wellbeing.

Examples of peer esteem might include (but are not limited to):

- › participation on editorial boards
- › editing of journals or books
- › acting as a referee
- › citation counts
- › research supervision
- › invitations to conferences, especially as keynote speaker
- › elected membership or fellowships
- › awards and prizes
- › contribution to professional societies.

In addition to the support of students referred to in the main guidelines, the panel recognises the contribution to the support of honours and honours-equivalent students.

Glossary

The glossary contains the broad meanings of commonly used terms. Full descriptions of these can be found in the main body of the *Guidelines for tertiary education organisations participating in the 2018 Quality Evaluation* and the *Guidelines for the 2018 Quality Evaluation assessment process*.

| Term | Meaning |
|--|---|
| Assessment period | The period between 1 January 2012 and 31 December 2017. Only research outputs produced and research contributions undertaken in this period are eligible for inclusion in an Evidence Portfolio for the 2018 Quality Evaluation round. |
| Co-authorship | Process by which a research output is produced by more than one researcher. |
| Component scores | The scores from zero to seven that are assigned to each of the two components of an Evidence Portfolio (Research Output and Research Contribution). |
| Contract duration period | The timeframe a staff member is contracted for. |
| Co-production | Process by which a research output is produced by more than one researcher. |
| Course | The smallest component of a qualification that contributes credit toward the completion of the qualification. Other terms used to describe a course include unit, paper or module. |
| Degree-level course or equivalent | Course or equivalent that leads to a degree or related qualification. Degree-level courses include those at level 5 or above on the New Zealand Qualifications Authority framework. Courses taught as part of qualifications, such as certificates or diplomas that can form one or more years of study towards a degree, are included as degree-level courses. |
| Evidence Portfolio (EP) | TEOs collect information on the research outputs and research-related activity of their PBRF-eligible staff members during the assessment period. This information forms the EP that is submitted by the TEO to the TEC for assessment by a peer review panel. |

| Term | Meaning |
|---------------------------------------|--|
| Excellence | <p>Excellence, in this respect, is not just about the production of high-quality research articles, books, exhibitions and other forms of research output. It also includes all of the following:</p> <ul style="list-style-type: none"> • the production and creation of leading-edge knowledge • the application of that knowledge • the dissemination of that knowledge to students and the wider community • supporting current and potential researchers, such as postgraduate students, in the creation, application and dissemination of knowledge. <p>The primary purpose of the PBRF is rewarding and encouraging excellence.</p> |
| External Research Income (ERI) | <p>A measure of the income for research purposes gained by a TEO from external sources.</p> <p>ERI is one of the three measures of the PBRF, along with the Research Degree Completion measure and the Quality Evaluation.</p> |
| EFTS | Equivalent full-time student. |
| FTE | Full-time equivalent. |
| Interdisciplinary research | Research that crosses two or more academic disciplines or subject areas. |
| Joint research | Research produced by two or more researchers. |
| Major role | A staff member contributes at least 25 percent of the delivery of the course and corresponding working time to the design of the course and/or the design of the assessment process. |
| Moderation Panel | Panel that meets to review the work of peer review panels to ensure that the TEC policy has been followed and the Quality Evaluation process has been consistent across the panels. |

| Term | Meaning |
|--|---|
| New and emerging researcher | A PBRF-eligible staff member who is undertaking substantive and independent research for the first time in their career and meets the criteria for new and emerging researcher status. |
| Nominated academic unit | The academic unit nominated by the TEO for each of the staff members for whom an Evidence Portfolio is submitted. |
| Nominated Research Outputs (NROs) | The up to four best research outputs that the PBRF-eligible staff member nominates in their Evidence Portfolio. NROs are given particular scrutiny during the Quality Evaluation process. |
| Non-quality-assured research output | A research output that has not completed a formal process of quality assurance. |
| Other Research Outputs (OROs) | Up to 12 research outputs that the PBRF-eligible staff member nominates in their Evidence Portfolio if they have four Nominated Research Outputs. OROs form evidence of the staff member's platform of research. |
| Overseas-based staff | A staff member who is resident in New Zealand for less than 50 percent of their employment period and employed for less than 0.5 full-time equivalent. Overseas-based staff members are not eligible to participate in the 2018 Quality Evaluation. |
| Panel | See peer review panel and Moderation Panel. |
| PBRF staff-eligibility date | 14 June 2018. The key date for determining staff eligibility. |
| PBRF staff-eligibility period | Any 12-month period that bridges the PBRF staff-eligibility date of 14 June 2018. |
| PBRF-eligible staff member | A person who is employed by a TEO or otherwise contracted by a TEO on a contract for service in their own right as individuals, an entity or trading name, through their employer, or any other contracting the TEO may have developed, and meets the staff-eligibility criteria. |
| PBRF IT System | Online information technology system used by the TEC to administer and support the Quality Evaluation process. |

| Term | Meaning |
|--|--|
| PBRF Staff Data File | A file submitted by participating TEOs that provides detailed information on all PBRF-eligible staff members for whom an Evidence Portfolio is being submitted, and transferring or concurrently employed PBRF-eligible staff members. |
| Peer review panel | Group of experts who evaluate the quality of research as set out in an individual Evidence Portfolio. There are 13 peer review panels, each covering different subject areas. |
| Points/points scale | The points range used to score each of the two components of an Evidence Portfolio during the first stage in the assessment of an Evidence Portfolio. The points scale ranges from zero (lowest) to seven (highest). |
| Primary field of research | The research field of the staff member's research activity during the assessment period, and especially that of the (up to) four Nominated Research Outputs selected for their Evidence Portfolio. |
| Produced | 'Produced' in the context of the PBRF means that the final version of the research output was first made available in the public domain during the assessment period. |
| Quality-assurance process | Formal, independent scrutiny by those with the necessary expertise and/or skills to assess quality. |
| Quality-assured research output | Research output that has been subject to a formal process of quality assurance. |
| Quality Category | <p>A rating of researcher excellence assigned to the Evidence Portfolio of a PBRF-eligible staff member following the Quality Evaluation process.</p> <p>There are six Quality Categories: A, B, C, C(NE), R and R(NE). Quality Category A signifies researcher excellence at the highest level, and Quality Category R represents research activity or quality at a level that is insufficient for recognition by the PBRF. The A, B, C(NE) and R(NE) Quality Categories are available for new and emerging researchers.</p> <p>The A, B, C and C(NE) Quality Categories are funded Quality Categories.</p> |

| Term | Meaning |
|---|---|
| Quality Evaluation | <p>The process that assesses the quality of research output produced by PBRF-eligible staff members, the esteem within which they are regarded for their research activity, the contribution they have made to the research environment and the impact their research has had within a given assessment period.</p> <p>The Quality Evaluation is one of the three measures of the PBRF, along with the Research Degree Completion measure and the External Research Income measure.</p> |
| Research | See the PBRF Definition of Research in the guidelines. |
| Research Contribution (RC) component | <p>A research contribution item is evidence that describes the contribution or recognition or impact of a staff member's research and research-related activities.</p> <p>The Research Contribution (RC) component is one of the two components of an Evidence Portfolio and is worth 30 percent of the overall assessment score.</p> <p>A research contribution type is one of the 12 defined categories for listing research-related activity in an Evidence Portfolio.</p> |
| Research Degree Completion (RDC) measure | <p>A measure of the number of research-based postgraduate degrees completed within a TEO where there is a research component of 0.75 equivalent full-time students or more and external moderation.</p> <p>One of the three measures of the PBRF, along with the External Research Income measure and the Quality Evaluation.</p> |
| Research Output (RO) component | <p>A research output is a product of research that is evaluated during the Quality Evaluation process.</p> <p>The Research Output (RO) component is one of the two components of an Evidence Portfolio.</p> <p>A research output type is one of the defined categories for listing research outputs in an Evidence Portfolio.</p> |
| Staff-eligibility criteria | The criteria that staff have to meet to be eligible to participate in the Quality Evaluation. |

| Term | Meaning |
|-----------------------------|---|
| Subject area | One of the 43 subject areas defined to represent the range of research disciplines assessed in the Quality Evaluation. |
| TEC | Tertiary Education Commission. |
| TEO | Tertiary education organisation. |
| Tie-points | The standards expected for the scores two, four and six in each of the two components of an Evidence Portfolio. |
| Total weighted score | The sum of the points allocated to each component of the Evidence Portfolio during the first stage of assessment, multiplied by the weighting for each component. |
| URI | A Uniform Resource Identifier (URI) is a <u>string of characters</u> used to <u>identify</u> a name or a <u>resource</u> on the <u>Internet</u> or in the TEC temporary repository of Nominated Research Outputs. |
| XML | XML (Extensible Markup Language) is a set of rules for encoding documents in machine-readable form. It is defined in the XML 1.0 Specification produced by the W3C. |