1. Preamble

In November 2016, Royal Society Te Apārangi, as New Zealand's academy for "science, technology and the humanities" presented to the CAETS meetings in London an outline case for acceptance of the Society for CAETS membership. The case indicated that in a small nation such as New Zealand it is not sustainable to have separate academies but rather a multi-disciplinary academy could operate successfully across and within a number of domains. The Society presently participates in the global lead bodies in science and social science (International Science Council), and humanities (Union Academique Internationale) but not with CAETS. It is keen to participate in all global lead bodies. Approximately 15% of the Fellows associate with the domain entitled "Technology, Applied Science and Engineering" (TASE), noting that the term technological sciences is not used in New Zealand, but rather technology and applied sciences. Hence it is appropriate that the Society be affiliated with CAETS.

The feedback received from CAETS in 2016 was that an application would be welcome, but that there would be scrutiny to ensure that TASE was not subsumed under science. Rather it should have a distinct identity within the Society. The Society chose to address the concerns by reviewing its governance structure and implementing changes to its Fellowship process.

This document sets out the case for admission of Royal Society Te Apārangi to membership of the Council of Academies of Engineering and Technological Sciences (CAETS) in 2019. It describes the Society and other bodies operating in the New Zealand context in engineering and technology, and then presents a self-review against the CAETS criteria.

Accompanying documents include copies of the Royal Society of New Zealand Act, the General Rules, Code of Professional Standards and Ethics, Code Interpretation, Academy Bylaws, operational documents for the Fellowship selection process, recent annual accounts and annual review.

2. About Royal Society Te Apārangi

2.1 Royal Society of New Zealand –a Brief History

The Royal Society of New Zealand commenced as the New Zealand Institute in 1867 with a mandate encompassing science and the arts. The Society has always been constituted under an Act of Parliament, the first Act in 1867 being updated periodically, and most recently in 1997 and 2012 which is the present Act. The Act is a private Act i.e. it establishes the Society as a private body independent of Government. That is, the Society is not a Crown entity and reports to no-one in Government on its own activities.

In 1919 an Academy was established within the New Zealand Institute and it commenced the award of Fellowships. There were 20 initial Fellows. In 1933 the Institute was renamed the Royal Society of New Zealand and narrowed to encompass only science.

Engineering and applied sciences were progressively recognised as being included as part of a widening definition of science used during the 1970s to 1990s for the election of Fellows. The first engineer elected a Fellow was Professor Leslie Kay, a mechanical engineer, in 1971, followed by Professor Bob Park, a structural engineer in 1978. As best can be

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ascertained, a further four engineers were elected Fellows in the 1980s and 13 in the 1990s. Since then there has been a steady stream at a rate of one engineer per year. There have also been applied scientists. These small numbers need to be seen against a background where in the 1970s the New Zealand population was about 3m, and the economy was focused on export of agricultural products.

In 1997 the Act was updated to encompass "science and technology" defined as including the applied, biological, earth, engineering, information, mathematical, medical, physical, social, and technological sciences". In 2012 the Act was further widened to include the humanities in addition to science and technology.

The Society has always had a broad-based membership, in 1867 comprising provincial learned society bodies. Under the 1933 and 1965 Acts the Society was seen as membership-based, there being two types of members – the Fellows within the Academy, and organisational members like regional branches of the Society and discipline-based learned societies such as the New Zealand Institute of Chemistry.

From 1997 the Act governing the Society made a clear separation between the body governing the Academy (the Fellowship) and that governing the wider body. That Act also allowed for individual members who could use the postnominal MRSNZ (whereas Fellows use FRSNZ) as well as organisational members. In 2012 the nomenclature in the 1997 Act was amended so the Act presently refers to two councils – an elected governing Council for the body as a whole, and a council called the "Academy Executive Committee" which operates according to Bylaws and is responsible for the Academy of about 400 Fellows and 50 Honorary Fellows.

In 2017 the Society held a commemoration for its first 150 years and in 2019 celebrates 100 years of the Fellowship. It has used these commemorations to rebrand as Royal Society Te Apārangi (noting its legal name is unaltered). The Māori name Te Apārangi translates to "a group of experts".

2.2 Present Mandate of the Society

The 1997 Act (amended in 2012) sets out the object of the Society as "the advancement and promotion in New Zealand of science, technology, and the humanities".

The Act further sets out that for the purpose of the advancement and promotion in New Zealand of science, technology, and the humanities, the functions of the Society are—

- a. to foster in the New Zealand community a culture that supports science, technology, and the humanities, including (without limitation)
 - i. the promotion of public awareness, knowledge, and understanding of science, technology, and the humanities; and
 - ii. the advancement of science and technology education:
- b. to encourage, promote, and recognise excellence in science, technology, and the humanities:
- c. to provide infrastructure and other support for the professional needs and development of scientists, technologists, and humanities scholars:
- d. to establish and administer for members a code of professional standards and ethics in science, technology, and the humanities:
- e. to provide expert advice on important public issues to the Government and the community:
- f. to do all other lawful things that the Council considers conducive to the advancement and promotion in New Zealand of science, technology, and the humanities.

2.3 Society Governance Structure

The present Act sets out a requirement for both a "Council" as the governing entity of the broad-based body, and an "Academy Executive Committee", established to recognise and encourage excellence and outstanding achievements in each of the areas of science, technology, and the humanities; and contribute to the intellectual leadership role of the Society.

The Act further sets out that the governing Council is responsible for setting General Rules of the Society. Subject to the Act and Rules, and any Academy bylaws, the Academy Executive Committee may regulate its procedure in such manner as it thinks fit. Academy bylaws are created by a positive vote of two-thirds of the Fellows.

In practice, to ensure coherent governance the Council and Academy Executive Committee (AEC) have been closely linked by a significant common membership. However, because of the broad base of the Society (as distinct from the Academy) the Council must cover different constituencies in the electoral colleges it uses to elect Councillors.

Commencing on 1 July 2019 the long term structure of the two bodies, set out in General Rules approved on 20 December 2018, will be as follows:

Council	Academy Executive Committee
President	
President-elect - one year in three	Observer (if a Fellow) – one year in three
Chair of Academy Executive Committee	
Deputy Chair of Academy Executive Committee	
Councillor appointed by Branches	(Domain) Convenor for Humanities
Councillor elected by Constituent Organisations	(Domain) Convenor for Social and Behavioural Sciences
Councillor elected by individual members who are not Fellows	(Domain) Convenor for Biological and Environmental Sciences
Councillor elected by Early Career Researchers	(Domain) Convenor for Physical, Earth and Mathematical Sciences
Councillor bringing Māori researcher perspective	(Domain) Convenor for Medical and Health Sciences
Councillor bringing Māori researcher perspective	(Domain) Convenor for Technology, Applied Science and Engineering (TASE)
Co-opted Councillor (optional)	Co-opted member (optional)
Co-opted Councillor (optional)	Co-opted member (optional)
Co-opted Councillor (optional)	

The Academy is organised into six domain-based Colleges, each of which elects a Convenor for the domain. The six Colleges:

- Humanities
- Social and behavioural sciences
- Biological and environmental sciences
- Physical, earth and mathematical sciences
- Medical and health sciences
- Technology, applied sciences and engineering (TASE)

map reasonably accurately to the five academies operating in Australia (except we split "science" into two colleges). Note that in the New Zealand context we use the term TASE – technology, applied sciences and engineering, rather than engineering and technological sciences.

2.3.1 Common Roles between Council and AEC

In the new structure, the two lead roles in the AEC (Chair and Deputy Chair) must be Fellows, and are elected by the AEC on behalf of the Fellowship. Under the legislation the President is not required to be a Fellow but that is the norm in practice. Hence there are normally three Fellows on the Council. It is also possible for a Fellow to be elected to other positions on Council. To ensure that each of these roles is held approximately the same length of time by persons from each of the six Colleges:

- Each newly elected person must be from a different domain to the incumbent completing their term
- Each newly elected person must be from a different domain to the incumbent in the other AEC chair/deputy chair role
- In identifying candidates for both AEC roles the relevant electoral college must have regard to:
 - the need, over a period of time, for the two roles to be shared across the six domains,
 - the benefits of the Chair and Deputy Chair being from a different domain to the incumbent President and President-elect.

There is an expectation that the Chair and Deputy Chair will have previously been highly performing Domain Convenors. The election of the Chair and Deputy Chair of the AEC is by an electoral college comprising the members of the AEC plus any other Fellows serving at the time on the Council. These elections are thus decided entirely by Fellows.

2.3.2 Domain Convenors and Other AEC Roles

The key change from 2019 is that the Academy Fellows, categorised into six Electoral Colleges, will elect the six Domain Convenors, the leadership roles for each of the domains. There is thus a clear and continuing leadership role in TASE through the relevant Domain Convenor. Each Domain Convenor is expected to maintain strategic linkages to the relevant sector stakeholders. In TASE this includes bodies like IT Professionals New Zealand and Engineering New Zealand, plus the likes of the New Zealand Institute of Food Science and Technology.

Up to two co-opted AEC members may be selected if needed to ensure sufficient diversity.

2.3.3 Other Council Roles

The Society has organisational members (Branches and Constituent Organisations), individual members who are not Fellows, a College of early career researchers, and a partnership agreement with the indigenous Māori people. There are six Councillors elected from these groups, but these Councillors cannot influence the AEC.

The two primary criteria for co-option of up to three Councillors are spread of Council as a whole across employment sectors and domains:

- Sectors (non-university)
 - o Crown Research Institutes
 - o Independent Research Organisations
 - Research-based professions
 - o Innovation community
 - GLAM sector galleries, libraries, archives, museums
 - o Institutes of Technology and Polytechnics
- Domains (as above)
 - o Humanities
 - o Social and behavioural sciences
 - Biological and environmental sciences
 - Physical, earth and mathematical sciences
 - o Medical and health sciences
 - Technology, applied sciences and engineering (TASE)

2.4 Roles of the Academy Executive Committee

The Academy Executive Committee manages the Fellowship, and Medals and Awards processes independently of the Society governing Council. It takes responsibility for the election of new Fellows and Honorary Fellows (the latter are resident outside New Zealand), and also has responsibility for evaluating nominations for Companion of the Society and overseeing the selection of Society medals and awards.

2.5 Fellowship Process

The amended 1997 Act specifies that Fellows may be elected for "distinction in research or the advancement of science, technology, or the humanities." The Academy Executive Committee sets bylaws to give effect to this role.

Operationally, the Academy Executive Committee recognises four "fields" in which the criteria for Fellowship can be demonstrated:

- Science
- Social sciences
- Humanities
- Technology, applied sciences and engineering.

Each field has different performance indicators, including demonstration of impact of the research, and for TASE this allows for wider forms of research output and impact than published papers.

A major change for 2018 was that the Society commenced accepting nominations for "advancement of science, technology or the humanities" for which the primary criterion was impact, as well as continuing the long-standing consideration of nominations for "distinction in research". Advancement cases require demonstration of advancement of knowledge, but the forms of evidence that will be accepted will be primarily those that demonstrate impact of the knowledge. Thus, it will be increasingly possible for engineers and technologists from industry who do not publish in peer-reviewed literature to be elected. The criteria are attached.

In 2018, the evaluation panels for Fellowship were changed to six "domains", matching the six colleges:

- Technology, applied sciences and engineering,
- Physical, earth and mathematical sciences,
- Biological and environmental sciences,
- Social and behavioural sciences,
- Medical and health sciences,
- Humanities.

Each application is now characterised as one of:

- Distinction in research, demonstrated by publication and peer esteem,
- Distinction in research demonstrated by publication and peer esteem, supported by evidence of impact,
- A combination of advancement of science, technology or the humanities demonstrated through impact and of distinction in research,
- Advancement of science, technology or the humanities demonstrated by impact without an underpinning research base.

It is our expectation that the numbers of nominations for fellowship from TASE candidates characterised in the latter three ways will progressively increase. The allowable forms of evidence for cases based on impact or for advancement are highly variable – in essence for a candidate considered for election under advancement the nominator is asked to identify the six best pieces of evidence. Evidence portfolios and nominating statements are used together with reports from both referees proposed by the nominator to assist the evaluation.

A final Selection Committee, the membership of which is evenly drawn from across all six domains, ranks the recommended candidates presented by the six panels using a blind voting system. The Selection Committee sees all the evidence the Evaluation Panels have seen, but additionally receives and reports from referees independently selected by the Panels. The Academy Executive Committee then decides a cutting point for successful election. Our experience is that Committee members doing evaluation of candidates who are "out of field" for that Committee member are generally able to assess impact proficiently.

It should be noted that the Act under which the Society operates created a Companion grade to which those who demonstrate leadership and public service can be elected, so the Act does not allow those as grounds for Fellowship. However the AEC has responsibility for evaluation of cases for Companion.

In summary, we are just starting to apply the new system for Fellowship, but in our view, it is substantially equivalent to those used in academies of technology and engineering. In late 2018 the Society President and Chief Executive visited a number of multi-disciplinary and engineering academies, and as a result of the findings of those visits, the Academy Executive Committee is making further changes for 2019. In particular,

the nomination statement will be written on a "make the case" basis, and rather than specifically stating six research outputs for research cases, all nominators now provide six key pieces of evidence, whatever the form. The intent is to lower still further the barriers to nomination of non-academics. There will be continued active searching for candidates in the TASE domain who are employed in non-university contexts, and coaching will be available to nominators who are unfamiliar with our processes. These changes will progressively kick in from January 2019 when we open Fellowship nominations again.

2.6 Changes to Awards and Medals Processes

One of our premier medals, that for technology and named the Pickering Medal after the famous New Zealand rocket engineer, William Pickering is adjudicated on impact/advancement.

The significant change for 2018 was that the award for science with application (the MacDiarmid medal) and that for technology (the Pickering Medal) were opened up to teams as well as individuals, and to a wider range of outputs in the evidence portfolio. In 2018 a team of applied scientists won the Pickering Medal, and an engineer the MacDiarmid Medal.

2.7 Count of Fellows

As at late 2018 there were approximately 30 Fellows who are engineers, and 40 who are technological or applied scientists, amongst a total Fellowship of about 400.

2.8 Expert Advice Programme

The Society's programme of expert advice to the government and public often deals with issues that are technological or engineering and draws on panelists from appropriate disciplines. Examples include:

- Non-occupational safety of asbestos
- Climate change mitigation
- Impacts of blue light
- Impacts of artificial intelligence

2.9 Further Development of the Society

The Society is committed to increasing its breadth, with emphasis on the humanities and technology. The Society retains New Zealand's membership of:

- International Science Council (sciences and social sciences)
- Union Academique Internationale (humanities)
- Inter Academy Partnership (science and medical/health science)

In order to broaden its international contribution the one key missing peak body is that for engineering and technological sciences.

The Society is also committed to a programme to support the South Pacific region develop its capacity to be self-sustaining across social sciences, natural sciences, technology and engineering.

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3. The Engineering and Technology Sector in New Zealand

3.1 Tertiary Education

The population of New Zealand is now just under 5m. There are eight universities, two of which have large engineering degree programmes, with four others having smaller programmes. Overall, about 2000 engineers graduate annually with degrees accredited under the Washington Accord. There is a Council of Engineering Deans for the Washington Accord-accredited degree programmes. The polytechnic sector also offers qualifications accredited under the Sydney and Dublin Accords.

Almost all universities and most polytechnics also offer degrees in information science or information technology to the level of the Seoul Accord. One university offers a degree in food technology which includes a substantial component of food engineering. Some food science programmes include some food engineering studies.

3.2 Research in Engineering and Technology

All six universities teaching engineering have research programmes in engineering, and there are small research programmes in some polytechnics. There is a comprehensive Government-operated Performance-Based Research Fund which uses international benchmarking to categorise university- and polytechnic-based researchers to an A (international standard), B (national standard) C (active in research) or N (not active).

There are seven Crown-owned research organisations, and some of these employ engineers and technologists. There is no Crown research organisation specifically targeting engineering and technology.

There are a further 15 or so independent but relatively small research organisations. Some of these have a strong engineering focus (Building Research Association of New Zealand, Heavy Engineering Research Association) but others also employ engineers.

Research in information technology is highly concentrated in the private sector. Several manufacturing companies operate significant private research teams, containing many engineers and technologists.

3.3 Professional Bodies and Learned Societies

Engineering New Zealand (formerly the Institution of Professional Engineers New Zealand – IPENZ) is the single engineering professional body based in New Zealand. It is also the registration authority for the Chartered Professional Engineers of New Zealand Act. It covers all disciplines and has approximately 22,000 members, including about 700 Fellows and 60 Distinguished Fellows. There is a wide variety of grounds for recognition as a Fellow or Distinguished Fellow, including advancing engineering knowledge, engineering practice and the profession. However, these Fellows and Distinguished Fellows are not recognised collectively as an academy within Engineering New Zealand. Of the 30 or so engineers who hold FRSNZ about half are also Fellows or Distinguished Fellows of Engineering New Zealand. Some of the other Society Fellows are members of other professional bodies such as those from the United Kingdom. Fellowship of Engineering New Zealand is seen as complementary to Fellowship of the Society.

Working cooperatively with Engineering New Zealand are approximately 15 learned society bodies in engineering, plus a number of engineering industry sector organisations. Those organisations meet regularly as an "Engineering Leadership Forum".

IT Professionals New Zealand (the Institute of IT Professionals New Zealand) has approximately 4000 members across information and communication science. To our best knowledge there are no cross-over Fellowships between the Society and IT Professionals New Zealand. There is also an IT industry body called the New Zealand Technology Association.

There is a New Zealand Institute of Surveyors with approximately 700 members and a New Zealand Institute of Architects with approximately 2000 members.

New Zealand Institute of Food Science and Technology (NZIFST) has approximately 1000 members, including food engineers and food technologists, and there are about 50 Fellows, including two who are also Society Fellows.

The Society maintains relationships with a wide range of professional bodies through what is known as the LEAD Professions group. That group includes all the above except NZIFST, and also includes the Law Society, Chartered Accountants body and medical bodies. The chief executives meet two monthly.

Amongst the Society's organisational members are several applied science bodies including the NZ Institute of Agricultural and Horticultural Science, the NZ Hydrological Society, the NZ Veterinary Association and the NZ Institute of Forestry.

3.4 Engineering and Technological Industries

New Zealand has a long established consulting engineering sector employing about 10,000 people. Increasingly the larger firms are branches of international engineering companies.

Historical industries in New Zealand were meat, wool and dairy. Those have been augmented by forestrybased industries, wine, horticultural produce and seafood. Engineering and technology do play a significant role in these industries.

Large scale manufacturing is restricted to a small number of companies that have established narrow niche markets. There is a growing number of hi-tech start-ups.

The IT sector, both hardware and software, has been burgeoning, with increasingly large development teams in a number of companies, carrying out development that is seen to be internationally competitive.

Nevertheless, by OECD standards New Zealand has modest numbers of engineers and technologists active in research and development. The national R&D spend is about 0.6% of GDP from public sources and 0.6% from private sources, but overall only about half the OECD average.

4. Self-Review Against the CAETS Criteria

4.1 The CAETS Criteria

Fourth Article:

"The members of the corporation shall be academies of engineering and technological sciences, one per country"

Section 3 of the By-Laws:

"A member of CAETS shall:

- a. Be representative of the engineering and technological community of that country
- b. Subscribe to the nonpolitical, non-governmental international character of the Council
- c. Have a peer elected membership with criteria for election based on significant personal contributions to engineering, technological sciences, or related activities;
- d. Be governed by its elected membership;
- e. Be engaged in significant activities demonstrating that its objectives are compatible with the objectives of the CAETS; and
- f. Have sufficient financial support to pay the costs of CAETS membership and the costs of participation in CAETS activities."

In the following sections, the Society has reviewed itself against these criteria.

4.2 The members of the corporation shall be academies of engineering and technological sciences, one per country

There is no other Academy in New Zealand, and the Society Act states one of the Society functions is to encourage, promote, and recognise excellence in science, technology, and the humanities. There is clear Governmental and wider recognition that the Society is the national Academy.

4.3 Be representative of the engineering and technological community of that country

The Society is the only Academy for the engineering and technological community in New Zealand. It has been electing engineering Fellows for over 40 years. It therefore represents the excellence in the engineering research community. The recent changes to the Fellowship process to use impact as a criterion, and to recognise advancement of technology have opened up accessibility to the Academy for those engineers, technologists or applied scientists who demonstrate impact on the basis of new knowledge.

The wider Fellowship criteria the Society is now applying, and the availability of the Companion class of member to recognise those who are accomplished in leadership, means the Society is able to bring into its Academy or wider membership the same types of people as are elected by engineering and technology academies in other countries.

4.4 Subscribe to the nonpolitical, non-governmental international character of the Council

The legislated functions of the Society and the independence created by its private Act ensure adherence to this criterion. The Society has no "master" in government. The Society continually strives to maintain a position where it is unequivocally independent in outlook on important national and global issues.

4.5 Have a peer elected membership with criteria for election based on significant personal contributions to engineering, technological sciences, or related activities

The Act sets out that the Academy Executive Committee (elected by the Fellows themselves) elects Fellows, and our longstanding procedures are that this is done on the advice of a Fellowship Selection Committee which is a peer-based system. The criteria of distinction in research and advancement of technology allow a wide range of nominations to be presented for evaluation, although it is acknowledged that cases are yet to flow in any significant number through the advancement route. However, over the last three years, impact has increasingly been a factor used favourably in a number of nominating statements.

4.6 Be governed by its elected membership

In the governance structure set out above, the elected membership determines the members of both the Council and the AEC.

The governance structure includes a Convenor for TASE – charged with the intellectual leadership role for TASE, thereby addressing one of the concerns expressed earlier by CAETS, that TASE could be subsumed under science. Leadership in each of TASE, humanities, social sciences and science is dealt with in the same way.

4.7 Be engaged in significant activities demonstrating that its objectives are compatible with the objectives of the CAETS

The Society has approximately 35 staff undertaking roles aligned with its functions which are compatible with CAETS, in particular, the expert advice function, informing the public, supporting education and the recognition of excellence as demonstrated in the attached Annual Review.

4.8 Have sufficient financial support to pay the costs of CAETS membership and the costs of participation in CAETS activities

The Society has assets exceeding \$10m US and a turnover of about \$5m US. Approximately 80% of its income derives from professional services provision, largely to government. Additionally, it has income of about \$1m US per annum that can be applied in a discretionary manner. This is demonstrated by the attached set of accounts.

Appendix

Criteria for "Distinction in Research" in the Technology, Applied Sciences and Engineering Field

- (a) *intellect; scholarship; international reputation; and peer recognition;*
- (b) intellectual achievement; innovation; and an ability to creatively synthesise and critically interpret knowledge in a way that has impact on the field.

The nomination statement commences with a clear statement describing the innovation/new knowledge for which the nominee is responsible. In the remainder of the nomination, it is expected that the criteria will be demonstrated via a combination of publications (which may include commissioned investigative reports), intellectual property creation, impact of the research, peer- recognition and end-user recognition, such recognition normally being wider than solely at a national level.

When assessing impact, nominations address relevant indicators for impact from within the following list (which is expressed generically to apply across all of technology, science and the humanities):

- a. Significant changes in the way a body of knowledge is organised and used (as a result of challenging previous conventional wisdom)
- b. Longevity of impact of citation
- c. Major changes to practice in a professional community, at least at a national level
- d. Major changes in relevant public policy and/or government investment strategy, e.g., in social policy, environmental protection, education, or justice
- e. Successful promulgation of new products, processes, IP, or services based on the research
- f. Significantly increased investment in the research programme over an extended period of time by potential technology transfer partners or end-users

Criteria for "Advancement of Technology"

The nomination statement must be in two parts – a clear statement describing the innovation/new knowledge for which the nominee is responsible, and a summary of the evidence of impact to show there has been major and excellent advancement from the contribution of the nominee. Relevant criteria for impact would be drawn from the following list:

- a. Major changes to practice in a professional community, at least at a national level;
- b. Major changes in relevant public policy and/or government investment or operational strategy, for example in health, social policy, environmental protection, conservation, education, justice or emergency management;
- c. Successful promulgation of new products, processes, IP, or services based on the innovation/new knowledge;
- d. Major cultural or social change within communities of significant size;
- e. Major environmental change.

It is expected that these criteria can be evidenced in a variety of ways. Key pieces of evidence are to be presented – these can be proxies of impact, e.g., level of uptake of a new technology, evidence of previous practices or technologies being rendered obsolete, peer esteem recognition, etc.

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OUR FINANCIALS



PAST AND PRESENT STAFF MEMBERS OF THE SOCIETY AT A SPECIAL 150TH ANNIVERSARY EVENT IN OCTOBER.

HIGHLIGHTS 2017

E X P L O R E D I S C O V E R S H A R E

THIS PUBLICATION SHARES WHAT WE WERE UP TO IN 2017, A VERY SPECIAL YEAR FOR US AS WE CELEBRATED OUR 150TH ANNIVERSARY.

OUR YEAR IN REVIEW

EXPLORE

DISCOVER

SHARE

OUR ROLE IS TO SUPPORT NEW ZEALANDERS TO EXPLORE, DISCOVER AND SHARE KNOWLEDGE.

We support New Zealanders to follow their curiosity and **explore** the world through the many research funds and development opportunities we offer. Best known is the Marsden Fund but we also administer a number of other opportunities, including for talented young people.

We recognise the **discoveries** that New Zealanders make through their research, from school children through to researchers at the top of their field who we elect as Fellows of our academy. We celebrate excellence in research by presenting medals and awards and synthesise expert knowledge on topics of importance to New Zealand.

Knowledge is for **sharing**. We need it to make decisions on important issues and to enjoy life to its fullest. We share information on key topics and facilitate the sharing of the latest research discoveries through our public events and expert advice programme, journals and the Science Media Centre.

READ ON TO DISCOVER MORE ABOUT OUR ACTIVITIES DURING THE MONTHS OF 2017...



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JANUARY | KOTITĀTEA

E X P L O R E D I S C O V E R S H A R E

NEW ZEALAND AND JAPANESE RESEARCHERS HAVE BEEN WORKING TOGETHER TO DEVELOP TECHNOLOGY TO ALLOW SWARMS OF DRONES TO LOCATE AND RETRIEVE INFORMATION ABOUT CASUALTIES IN WIDE-SCALE EMERGENCIES SUCH AS TSUNAMIS AND EARTHQUAKES.

DRONES TO SUPPORT SEARCH AND RESCUE

During January 2017, four members of the Japanese research team visited the University of Canterbury for joint field trials, utilising the University of Canterbury's fleet of drones and flight test areas, both within the university campus and at the dedicated flight test area 50km south of Christchurch.

The research received funding as a New Zealand–Japan Joint Research Project, currently funded under Catalyst: Seeding, which is managed by the Society on behalf of government. The project's two objectives are to use multiple drones to locate people under rubble and collect information that is contained in the Body Area Networks (BANs) devices those people are wearing that monitor and send information on variables such as heart rate or motion.

"Many BANs are capable of measuring something relevant to the well-being of the wearer, and if we can tap into that as we fly over an area, there is also potential for triaging the casualties to ensure those most in need are attended to first by the rescue teams."

DR GRAEME WOODWARD, RESEARCH LEAD, WIRELESS RESEARCH CENTRE, UNIVERSITY OF CANTERBURY



LEARN MORE ABOUT THE PROJECT

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FEBRUARY | HUITĂNGURU

EXPLORE DISCOVER SHARE



IN FEBRUARY, BRITISH ECOLOGIST AND CONSERVATION SCIENTIST DAME GEORGINA MACE FRS GAVE THE 2017 RUTHERFORD MEMORIAL LECTURE IN MANY CENTRES, HELD IN PARTNERSHIP WITH LONDON'S THE ROYAL SOCIETY, ON HOW THE FOCUS OF CONSERVATION HAS SHIFTED FROM PRESERVATION AND PROTECTION TO ADAPTABILITY AND RESILIENCE.

VALUING NATURE IN A HUMAN-DOMINATE WORI

"I actually don't think natural capital is about money. There are things nature provides us for free – clean water, clean air, energy, the soil – and we use the interest on that natural capital in order to sustain our way of life. I think the idea of natural capital is that we should be investing in nature in order to sustain that flow of benefits."

DAME GEORGINA MACE

HOW SHOULD WE VALUE NATURE IN A HUMAN-DOMINATED WORLD

FEBRUARY | HUITĂNGURU

EXPLORE DISCOVER

SHARE

making the science teaching leadership programme MORE CULTURALLY RESPONSIVE

THE SCIENCE TEACHING LEADERSHIP PROGRAMME, MANAGED BY THE SOCIETY ON BEHALF OF GOVERNMENT, AIMS TO DEVELOP SCIENCE LEADERSHIP IN SCHOOLS.

As part of enhancements to make the Science Teaching Leadership Programme more culturally responsive, the first professional development workshop was held on Tapu Te Ranga Marae in Wellington in February. It began with a formal powhiri and provided an immersive experience for the participant teachers.

Overall, the enhancements seek to enable participant teachers and schools to become more culturally aware and responsive by giving them the knowledge and skills to foster an environment that is able to show science through different cultural lenses, helping all students feel more included and engaged in science. The initiatives that celebrate and value diversity have been well received by the increasing number of schools with a high number of Māori and Pasifika students participating in the programme.

"I enjoyed being fully immersed in the wānanga at the marae. I felt it strengthened some aspects of my cultural identity and also exposed some areas that I need to develop further. The connection to language, culture and tikanga was great – it put some practices into perspective and gave me an opportunity to reflect on how these will be beneficial in the classroom."

FEEDBACK FROM PARTICIPANT TEACHER, SCIENCE TEACHING LEADERSHIP PROGRAMME



DISCOVER MORE ABOUT THE SCIENCE TEACHING LEADERSHIP PROGRAMME

FEBRUARY | HUITĂNGURU

E X P L O R E D I S C O V E R S H A R E

BETTER ENGAGEMENT WITH MĀORI RESEARCHERS

The leaders of Ngā Pae o te Māramatanga and the Society formally gathered on 13 and 14 February 2017 at Waipapa Marae for a strategic planning meeting with the shared aim of strengthening the intent of the Society to connect more with Māori researchers and Māori communities. Among other topics, this meeting marked the starting point of a shared project to highlight the depth and breadth of Māori scholarship and began a project to develop a suite of awards to be presented at the Society's annual New Zealand Research Honours event to recognise Māori research excellence.

We are extremely grateful to Ngā Pae o te Māramatanga for their willingness to partner with us as we pursue our journey to better engage with Māori researchers."

EMERITUS PROFESSOR RICHARD BEDFORD QSO FRSNZ, PRESIDENT, ROYAL SOCIETY TE APĂRANGI

HIGHLIGHTS 2017

MARCH | POUTŪTERANGI

MARCH | POUTŪTERANGI



TEACHERS IN INDUSTRY

Royal Society Te Apārangi was contracted to the Ministry of Education to deliver the Teachers in Industry programme during 2017 in Franklin, Papakura and Manurewa. The programme connected schools kura with science or technology-intensive businesses in their community. Teachers spent time with the businesses and gained industry experience, enabling them to develop business-relevant curriculum content for the classroom. The programme has lifted the awareness of teachers to factor in local opportunities and employability skills into their teaching and learning programmes, and businesses have valued the opportunity to engage with teachers and to showcase their sector.

EXPLORE

DISCOVER SHARE "Students have received more knowledge from me and local industry. There are planned visits, and more students have found career options."

SECONDARY CLASSROOM TEACHER INVOLVED IN TEACHERS IN INDUSTRY



ROYAL SOCIETY TE APĀRANGI



YEARS OF DISCOVERY 1867 - 2017

APRIL | PAENGA-WHĀWHĀ

"

EXPLORE DISCOVER SHARE

IN APRIL WE BEGAN A SIX-MONTH PROGRAMME OF EVENTS AND ACTIVITIES TO CELEBRATE OUR 150TH ANNIVERSARY OF SUPPORTING THE DISCOVERY AND SHARING OF KNOWLEDGE IN NEW ZEALAND.

CELEBRATING 150 YEARS OF DISCOVERY

In 1867 we were established as the New Zealand Institute "to promote the general study and cultivation of art, science, literature and philosophy". We are committed to continuing to play this role in New Zealand for hopefully another 150 years and beyond, supporting researchers, fostering curiosity in school children and empowering New Zealanders to make decisions on future challenges by providing the latest findings on these issues.



"We look forward to working with you as we deliver on the key objective specified for the Royal Society Te Apārangi in its current Act, namely to "foster in the New Zealand community a culture that supports science, technology and the humanities". In fostering this culture the academy, the government and the public all have vitally important roles to play.

There is a famous Māori whakataukī or proverb that captures well for me the inclusive nature of this mandate:

Mā wai e tō te waka o te mātauranga? Māku e tō, māu e tō, mā te whakarongo e tō.

Who will bear the canoe of knowledge? I will, you will, all who listen will."

PROFESSOR RICHARD BEDFORD FRSNZ, PRESIDENT, ROYAL SOCIETY TE APĂRANGI **E X P L O R E** D I S C O V E R S H A R E

> THE FIRST EVENT OF OUR 150TH ANNIVERSARY PROGRAMME WAS A SYMPOSIUM FOR LEADERS OF ACADEMIES FROM AROUND THE WORLD TO DISCUSS KEY CONCERNS INCLUDING ISSUES OF PUBLIC ENGAGEMENT AND PUBLIC TRUST, HOW TO IMPROVE GLOBAL RESEARCH PRACTICE, AND HOW TO IMPROVE DIVERSITY OF FELLOWSHIP AND MEMBERSHIP GENERALLY.

SYMPOSIUM FOR INTERNATIONAL ACADEMIES

We welcomed representatives of 17 academies from Europe, UK, China, Finland, Canada, Australia and the Pacific and the Assistant Director General of UNESCO along with valued researchers from CRIs, universities, independent research organisations and government agencies. The two-day symposium started with a formal pôwhiri with the visitors led into Te Whare Apārangi by Sir Venki Ramakrishnan FRS, President of The Royal Society, London.

"One of the most important challenges facing us today is reaching people with evidence-based information that will be of value to them, while showing understanding and respect for their beliefs and values. We need to do much more to reach people who are turning away from true experts to listen only to their favoured perspectives."

PROFESSOR RICHARD BEDFORD FRSNZ, PRESIDENT, ROYAL SOCIETY TE APĀRANGI



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'ILLUMINATING OUR WORLD'

On 5 April we held a formal dinner at Parliament at which a book on the history of the Society by historian John E Martin *Illuminating our World: 150 Years of the Royal Society Te Apārangi* was launched by the Prime Minister.

An exhibition of portraits telling the story of the Society also opened at Parliament as well as an online interactive timeline outlining key points from our history.

> EXPLORE DISCOVER SHARE

"What I'm hoping comes through in the book is the very interesting evolution of an organisation that, in order to survive and prosper, has had to reinvent itself multiple times." JOHN E MARTIN



READ INTERVIEW WITH AUTHOR

EXPLORE DISCOVER SHARE

OUR NEW BRAND AND WEBSITE LAUNCHEI

As part of our 150 year anniversary, we refreshed our organisational identity. Our legal name remains Royal Society of New Zealand but we began using our new identity, Royal Society Te Apārangi and adopted an iconic kiwi symbol, the koru, as our logo. This reflects new growth while keeping a strong connection to our roots in Aotearoa. The changes involved a significant amount of research and symbolise the journey we have begun to be more diverse, open, and relevant. We also launched a new website in line with the new direction for the Society.



EXPLORE ROYALSOCIETY.ORG.NZ





HIGHLIGHTS 2017

MAY | HARATUA

EXPLORE DISCOVER SHARE



ANTIMICROBIAL RESISTANCE:

A MAJOR HEALTH ISSUE FOR NEW ZEALAND

MANY MICROBES THAT COMMONLY CAUSE INFECTIOUS DISEASE IN HUMANS AND ANIMALS ARE BECOMING RESISTANT TO THE ANTIMICROBIAL MEDICINES USED TO TREAT THESE DISEASES.

From May 2017, the Society began releasing resources to summarise the latest known about antimicrobial resistance in New Zealand, highlighting that New Zealand is in no way insulated from this global issue. Resources included an evidence update to outline the likely implications of antimicrobial resistance in New Zealand, a series of videos to explain the main concepts behind antimicrobial resistance and factsheets in Māori and English designed for people visiting health clinics.

"In New Zealand we are as vulnerable as the rest of the world. We have higher rates of many infectious diseases than countries like the USA, the UK and Australia and a growing number of those organisms are becoming resistant to our medicines."

ASSOCIATE PROFESSOR SIOUXSIE WILES, MICROBIOLOGIST AT THE UNIVERSITY OF AUCKLAND AND AN EXPERT ADVISER ON THE REPORT



HOW TO BRING NATURE BACK TO OUR CITIES

EXPLORE

DISCOVER

SHARE

Professor Bruce Clarkson, who was awarded the 2016 Charles Fleming Award for his work in ecology, gave the 2017 Charles Fleming Academy Lecture on urban ecological restoration around the country. He talked about how cities can use riverside planting to develop corridors to reconnect and encourage nature but also emphasised the role of pest control and individual gardens.

"If you want to do things like bringing Tuī back into your garden, having a grey willow there is not going to cut the mustard but, if you can get the ingredients right, anybody anywhere in the country who has a reasonable sized garden can do things which ensure that they bring back more native plants and animals into the system."

PROFESSOR BRUCE CLARKSON



BRINGING INDIGENOUS NATURE BACK INTO NEW ZEALAND CITIES





REVIEW FINDS DEFICIENCY IN THE PRACTICAL SKILLS

OF THOSE ENTERING THE SCIENCE TECHNICIAN WORKFORCE An expert panel convened by the Society produced a report in May that outlined issues in the science technician workforce and suggested a two-fold path for the future. The panel concluded that science technicians need an understanding of scientific principles and methodologies, plus technical aptitude and transferable practical skills. The panel suggested that the Level 6 Diploma in Applied Science delivered in polytechnics be more widely promoted and that certain science degrees lift the core requirements in laboratory practice.

"Science technicians bring a wealth of practical skills to the business and science sectors, yet there is now significant mismatch between the knowledge and skills acquired through tertiary education to those needed in employment."

PROFESSOR JIM JOHNSON FRSNZ, CHAIR OF THE REPORT'S EXPERT PANEL.

VIEW SCIENCE TECHNICIAN WORKFORCE REPORT



JUNE | PIPIRI

TO CELEBRATE MATARIKI, WE JOINED WITH TE PAPA TO HOST A DISCUSSION WITH DR DANIEL HIKUROA, DR OCEAN MERCIER AND DR WAYNE NGATA, WHO SHARED HOW MĀTAURANGA MĀORI INFORMS THEIR RESEARCH.

MATARIKI AND THE PLEIADES

OUR WORLD FROM DIFFERENT LIGHTS "As we look to celebrate Matariki, I am in awe of the generations of empirical observations that underpin such celestial knowledge, including the maramataka (Māori lunar calendar), observations that tuned our tūpana into natural rhythms and cycles, a tuning that I continually strive to incorporate and implement into my practise as an earth-systems scientist."

DR DANIEL HIKUROA



MATARIKI AND THE PLEIADES PANEL DISCUSSION

EXPLORE DISCOVER SHARE
ORCID IS A GLOBAL ORGANISATION THAT PROVIDES RESEARCHERS WITH A UNIQUE DIGITAL IDENTIFIER, WHICH THEY LINK WITH THEIR CHOSEN PROFESSIONAL ACTIVITIES.

LAUNCH OF NEW ZEALAND ORCID HUB

They can also permit other organisations such as their employer, funders or publishers to write information to their record, saving them time. The Society is the lead agency of the New Zealand ORCID Consortium, which has the role of supporting the adoption of ORCID by research organisations and funders in New Zealand. In June there was a soft launch of the New Zealand ORCID Hub, which allows all Consortium members to productively engage with ORCID regardless of technical resources. The Hub is a web application with a simple user interface being developed by technology partners at the University of Auckland using an agile project management approach, with a public demonstration of progress on a fortnightly basis.

 (Q) learn more about the new zealand orcid hub

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EXPLORE DISCOVER SHARE



E X P L O R E D I S C O V E R S H A R E

STUDENTS ATTEND OVERSEAS SCIENCE AND TECHNOLOGY OPPORTUNITIES

From June, students began representing New Zealand at international science and technology events, supported by the Talented School Students Travel Award, administered by the Society on behalf of government. One of the students selected was Aayushi Verma, from Christchurch Girls' High School, who attended the USA Space Camp in Huntsville, Alabama.

"I had so many fascinating intellectual conversations with other like-minded students and by attending Space Camp, I am even more motivated to pursue a career in astrophysics, which is my passion. I hope that one day I can work at NASA and help advance humankind in some way. To me, space exploration is a necessity to advance the growth of humanity, and to find new horizons".

AAYUSHI VERMA

ALUMNI SERIES LAUNCHED

To inspire young New Zealanders interested in pursuing careers in research, we launched a new online series on our website in June to profile the careers of those who have been supported by the Talented School Students Travel Award in the past and allow them to share advice to those keen to follow in their footsteps.

> E X P L O R E D I S C O V E R **S H A R E**



"My life so far has followed a very special path. Native Americans describe this path as the Good Red Road... those that know me realise, my passion for aerospace, astronomy and aviation has been a constant theme in my life, shaping my choices and defining my pathway. I was extremely lucky to be selected and supported a second time by the Royal Society of New Zealand to attend the US International Space Camp in Huntsville, Alabama together with another student in 2007... while I can't go into the specifics of what I am doing at Boeing I can say that I am loving every minute of my time here."

CAROLINE DELONG, A MECHANICAL ENGINEER CURRENTLY WORKING AT BOEING DEFENSE SPACE & SECURITY IN OKLAHOMA CITY, USA.



JUNE | **PIPIRI**

In June, Associate Professor Stephen On, Lincoln University, was awarded a Catalyst: Seeding grant to test a new type of scanner in New Zealand that can identify harmful strains of bacteria in food. Catalyst: Seeding grants are awarded by the Society on behalf of government to facilitate new small and medium pre-research strategic partnerships.

The technology, called a BEAM (Bacteria Rapid Detection using Optical Scattering Technology) scanner, was developed in the US and Associate Professor On is working with two senior US food safety researchers to see if the technology may be useful in New Zealand.

The scanner is designed to identify disease outbreaks better, by providing a 'specific fingerprint' of bacteria cultured on a standard agar media plate. This allows researchers to pinpoint the strains of interest much quicker, with a particular focus on pathogens.

INNOVATIVE TECHNOLOGY TO DETECT DISEASE-CAUSING BACTERIA

E X P L O R E D I S C O V E R S H A R E

"If there's an outbreak of E. coli or salmonella, for example, you may have dozens of samples to examine. The technology provides the major advantage of identifying the pathogen of concern by rapidly screening it from microorganisms naturally present in food or clinical samples. Because it's non-invasive, you can take your isolate of interest and further characterise it with sub-typing methodologies to better identify an outbreak. No comparable technology is available elsewhere – it's a game-changer."

ASSOCIATE PROFESSOR STEPHEN ON

PROGRESS FOR BIOSYSTEMATICS AND TAXONOMY

E X P L O R E D I S C O V E R S H A R E IN JUNE WE ACCEPTED AN INVITATION TO PARTNER WITH THE AUSTRALIAN ACADEMY OF SCIENCE TO DEVELOP A SHARED VISION AND ROADMAP FOR THE FOUNDATIONAL DISCIPLINES OF BIOSYSTEMATICS AND TAXONOMY IN OUR REGION FOR THE NEXT DECADE.

This work follows on from a comprehensive review of taxonomic collections in New Zealand that we published at the end of 2015. It called for more resources and a coordinated approach to safeguard and grow New Zealand's biological collections, which it said are intrinsic to supporting sectors of New Zealand life from economic growth to human health.

The Chair of the 2015 review Professor Wendy Nelson FRSNZ, from NIWA and the University of Auckland, and contributor Dr Tom Trnski, Auckland War Memorial Museum, were invited to serve on the advisory committee of the Australasian plan.

"Following New Zealand's 2015 report, we are making progress in New Zealand for maintaining and building capacity in taxonomy. Since the release of the review, it has been pleasing to see a greater acknowledgement of the importance of taxonomy in our national science strategies and government work programmes. Furthermore, last year saw the establishment of a national working group hosted by Te Papa that brings together 13 institutions that hold over 90% of New Zealand's taxonomic collections. This is a very important step in safeguarding our biological collections, which underpin the work needed to describe new species."

VIEW MORE ON TAXONOMY PROGRESS

HIGHLIGHTS 2017

JULY | HŌNGONGOI

E X P L O R E D I S C O V E R

SHARE

CUTTING-EDGE INFORMATION FOR MPS

In collaboration with the Speaker of the New Zealand Parliament, Science New Zealand, Universities New Zealand and the Independent Research Association of New Zealand, we ran our annual Speaker's Science Forum so that Members of Parliament have the opportunity to hear presentations on topical research areas.

In 2017, the topics presented were:

- Understanding New Zealand's freshwater
- Transport in growing cities
- Big data: big value
- Has New Zealand's exposure to earthquake risks and hazards changed?
- Production, protection and adding value
- New Zealand's space science

LEARN MORE ABOUT SPEAKER'S SCIENCE FORUM



E X P L O R E D I S C O V E R S H A R E

he waka eke noa: MENTORING IN THE AOTEAROA RESEARCH COMMUNITY



Effective mentoring is valuable at all stages of a researcher's career. In July we published mentoring guidelines that draw on Māori, Pasifika and Pākehā perspectives to offer a unique framework for mentoring in the context of an increasingly diverse Aotearoa. They were developed by a working group led from within our Early Career Researcher community, and are for use by anyone or for any group that finds them helpful.

"Mentoring is important for sharing knowledge and building the skills of Aotearoa New Zealand researchers. It is most effective when done in a culturally appropriate way, and we have integrated Māori and Pasifika as well as European approaches into the guidelines. Enhanced mentoring practice promises to make an important contribution to improving equity in the achievement and professional mana of researchers from groups that may have been disadvantaged."

DR JANE ALLISON, WORKING GROUP CONVENOR AND ROYAL SOCIETY TE APĀRANGI EARLY CAREER RESEARCHER FORUM COMMITTEE CHAIR

> VIEW MENTORING GUIDELINES

BILINGUAL APPROACH FOR PRIMARY SCIENCE CONFERENCE

E X P L O R E D I S C O V E R **S H A R E** The Society partnered with the Teachers' Refresher Course Committee to run the Primary Science Conference in July for teachers kaiako. One major accomplishment for the 2017 conference in Auckland was successfully incorporating workshops in te reo Māori or with an emphasis on Pūtaiao.

"The workshops were very valuable and the keynote speakers inspiring! I especially enjoyed hearing from facilitators who are doing practical activities towards promoting science in their schools. I personally found great value in attending the workshops relating to rongoā Māori and Te Ara ka Takahia."

CONFERENCE ATTENDEE



AUGUST HERETURIKŌKĀ



THE CARVING OF WHAKAOTIRANGI IN THE OTAWHAO MARAE.

150 WOMEN IN 150 WORDS



E X P L O R E D I S C O V E R S H A R E

Also for our 150th Anniversary, we began an online series to celebrate women's contributions to expanding knowledge in New Zealand, starting with Whakaotirangi, a pre-1400 experimental gardener. When Māori first came to New Zealand they brought seeds of important plants with them to test for food and medicinal use in the new, colder land. Both Tainui and Te Arawa traditions speak of one woman who carried out this important task: Whakaotirangi. Tainui tradition holds that Whakaotirangi landed in the Waikato at Kawhia, but in experimenting with her plants moved over the hill to Aotea. There she built a garden she called Hawaiki Nui, where native medicines still grow today.



READ MORE ABOUT WHAKAOTIRANGI AND VIEW THE 150 WOMEN IN 150 WORDS PROJECT

TALK IT UP -SHOULD NEW ZEALAND DEVELOP A NATIONAL LANGUAGES POLICY?

EXPLORE DISCOVER SHARE

In August, we joined with partners to run workshops on considering a national language policy for New Zealand. This followed on from a report we produced in 2013 that outlined the major issues facing language practices in New Zealand. Leading the 2017 workshops was Professor Joseph Lo Bianco from the University of Melbourne, who developed Australia's languages policy in 1987. He said that speaking more than one language brings cognitive, inter-cultural, and career benefits.

"Communication is what keeps our social body politic together, it's what energises the economy, it's what makes education operate. We need to treat language like a resource for the community."

PROFESSOR JOSEPH LO BIANCO

 (\triangleright) listen to interview with Joseph lo bianco

E X P L O R E D I S C O V E R S H A R E

MARSDEN FUND INVESTMENT PLAN RELEASED AND DISCUSSED

THE MARSDEN FUND COUNCIL RELEASED A THREE-YEAR INVESTMENT PLAN IN AUGUST TO HELP GUIDE THE STRATEGIC DIRECTION OF THE FUND AND CONTRIBUTE TO THE NATIONAL STATEMENT OF SCIENCE INVESTMENT.

The Marsden Fund Council developed the plan following an assessment earlier in 2017 undertaken by the Ministry of Business, Innovation and Employment.

The assessment found that the Fund is highly-regarded, well-run and effective at selecting high-quality research within its current settings, but recommended an investment plan to provide strategic direction, and ensure the Fund continues to be effective and fit-for-purpose.

Society staff who support the Fund operations and Marsden Fund Councillors gave presentations around the country on the investment plan and received feedback, particularly on the trial of an alternative evaluation methodology to be undertaken in 2018.

f Q) view marsden fund investment plan

150TH ANNIVERSARY REGIONAL LECTURES

EXPLORE DISCOVER SHARE

As part of our 150th anniversary programme, our 10 independent branches each invited a researcher to share their latest discoveries with the local community. Topics presented were our changing oceans; marine climate refugees; pest-free pipfruit; future foods; radio astronomy; responding to earthquakes; heat stress from climate change; improving dairy cattle genetics; preparing society for advances in artificial intelligence; solving biology's riddles with computers; and social license and life science technologies.



"The post-expert and post-truth world will make many important decisions that much harder and could threaten the nature of democracy itself. Science has an important role in being a bastion against that threat. To get there we will have to look again how we better engage between science and the rest of society. It is not as in 1942 when Robert Merton, the sociologist of science, described scientists as priests standing on an altar revealing truths to an ignorant society; rather today science is deeply embedded within society – a society that still is generally supportive of the scientific effort and which is increasingly empowered in its decision making."

SIR PETER GLUCKMAN FRS FRSNZ, PRIME MINISTER'S CHIEF SCIENCE ADVISOR, IN HIS ADDRESS TO THE WELLINGTON BRANCH.





LAUNCH OF AOTEAROA NEW ZEALAND SCIENCE JOURNALISM FUND

In August, our Science Media Centre partnered with Victoria University of Wellington's Science in Society programme leader and 2016 Prime Minister's Science Communicator's Prize winner, Dr Rebecca Priestley, to launch the Aotearoa New Zealand Science Journalism Fund. This fund is aimed at helping journalists and freelance writers work on science-related projects that would be otherwise hard to get off the ground. For the first round it distributed \$15,000 among six selected projects, all of which have been published. Among the stories were two in-depth 45-minute documentaries, a 5,000 word feature, online videos and a multi-part newspaper series, on issues ranging from sea level rise and aged-care robots to gene editing and synthetic food.

"The Robots are coming, and they are coming to watch over our elderly. Around the world, lifespans are lengthening, the proportion of elderly in the population is increasing, people are developing more complex healthcare needs, and more are living alone. Meanwhile, the price of looking after our elderly is rising...Robotics holds the answer."

NAOMI ARNOLD IN ARTICLE 'THE ROBOTS WILL SEE YOU NOW', PUBLISHED IN *NEW ZEALAND GEOGRAPHIC*.



READ THE ROBOTS WILL SEE YOU NOW AND VIEW AOTEAROA NZ SCIENCE JOURNALISM FUND

A. L.

SEPTEMBER | MAHURU

C.C.R.C

E X P L O R E D I S C O V E R S H A R E

EDITING OUR GENES: PROMISES AND PITFALLS

With support from the Becroft Foundation, the Society arranged for broadcaster Kim Hill CRSNZ to be joined by US-based bioethicist Josephine Johnston and panels of experts in four main centres in September to explore the implications of gene editing technologies for New Zealand. Each discussion focussed on a different potential application for gene editing, such as the risks and benefits of using gene editing for human reproduction and fertility, in medicine, for pest control and in agriculture. The discussions were recorded and broadcast by RNZ (Radio New Zealand).

They were part of our larger expert advice project for exploring the implications of gene editing for New Zealand.

"I don't think it's defensible to say all gene editing would be good or all gene editing would be bad. I don't see it as an up-down technology where we would give it a thumbs up or a thumbs down. I think it's much more complex than that as this tool can have so many different uses, so the muddy work of figuring that out is what we have to do."

JOSEPHINE JOHNSTON



FALLING WALLS LAB COMPETITION FOR INNOVATIVE IDEAS



FALLING WALLS LAB COMPETITORS. FROM LEFT: CHRISTOPHER PETRIE, MEHDI SAEIDI, GERMAN AMBASSADOR TO NEW ZEALAND, HE MR GERHARD THIEDEMANN, ROYAL SOCIETY TE APĀRANGI PRESIDENT, PROFESSOR RICHARD BEDFORD, SUNIL GOPAUL, PENI HAUSIA HAVEA AND FEDERICO TOMASETTO.

Novel solutions to tackling invasive plants, climate change, impacts of artificial intelligence on education, better knee treatments and making sustainable agriculture truly sustainable won five early career researchers from New Zealand and the South Pacific the chance to compete at the Australian Falling Walls Lab in Canberra in September.

The global event is run by The Falling Walls Foundation, a non-profit organisation in Berlin, dedicated to the support of science and the humanities. Each year winners of the regional competitions get to compete at the finals in Berlin. For 2017, the New Zealand Falling Walls Lab was a collaboration between Royal Society Te Apārangi, the German Embassy in Wellington and Canberra, and the Australian Academy of Science.

Mehdi Saeidi from Auckland University of Technology was placed third in the Australian competition for his idea for 'Breaking the Wall of Knee Replacements in Younger Patients' by developing an implant that will remove excessive load and slow progression of osteoarthritis, which affects millions of people worldwide. The implant aims to reduce the likelihood of requiring a total knee replacement.



EXPLORE DISCOVER SHARE

ENCOURAGING SCIENTISTS TO TELL STORIES

In September, the Science Media Centre collaborated with USbased The Story Collider, a podcast sharing true, personal stories about science. They ran workshops on story telling for scientists in Wellington and Christchurch and hosted a packed public event in Wellington.

One of the story tellers, Professor Cather Simpson, Director of The Photon Factory at the University of Auckland, describes how a disagreement with her cell biology MD/PhD supervisor leads her to take a 3-month hiatus in the physical chemistry department and ultimately take a new career path.

"So I grit my teeth, I look forward and I go... and I fall in love, scientific love. I find myself getting up at four in the morning to do calculus out of text books. I am captivated by the idea that you can use mathematics to describe light and how light interacts with materials."

PROFESSOR CATHER SIMPSON



EXPLORE DISCOVER

SHARE



WINNING VIDEO **EXPLORES POI** AND HEALTH

In September the Society joined with others to sponsor the Early Career Researchers "150 Seconds of Science" video competition. This year the competition was opened up to students as well as early career researchers and the winning entry was led by doctoral student Kate Riegle van West. It was based on a clinical trial conducted between the Centre for Brain Research and the Dance Studies Programme at the University of Auckland, establishing the benefits of poi on physical and cognitive function in healthy older adults. Participants improved their balance, grip strength, memory and attention.



"These are super exciting results, especially when thinking about quality of life, as they cover some of the hallmarks of frailty. I hope this study will pave the way for future poi and health research and shed more light on one of New Zealand's taonga. "

KATE RIEGLE VAN WEST



WATCH VIDEO POI: A SPIN ON HEALTH

DISCOVER SHARE

EXPLORE

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JOURNAL SPECIAL ISSUE REFLECTS ON 150-YEAR HISTORY

E X P L O R E D I S C O V E R **S H A R E**

In September 2017, the *Journal of the Royal Society of New Zealand* published a special issue entitled 'The 150-year voyage of the *Journal of the Royal Society of New Zealand*: from colonial beginnings to an electronic world'. This issue featured five invited review articles revisiting the central themes that were explored in the first issue of the *Transactions and Proceedings of the New Zealand Institute*. Atholl Anderson FRSNZ considered the changing perspectives of Māori colonisation voyaging. Phil Garnock-Jones assessed the contribution of Leonard Cockayne to theoretical issues in botany. Colin Miskelly reviewed colonial ornithology. Nick Mortimer FRNSZ reviewed Crawford's 1869 essay on the geology of the North Island and Cor Vink reviewed 180 years of research on spiders in New Zealand.

"Research on spiders (araneology) in New Zealand has a 180-year history that began just before the Treaty of Waitangi was signed. Initially, specimens were collected and taken back to Europe to be described, but from 1857 studies began to be conducted in New Zealand."

COR VINK, CANTERBURY MUSEUM.



VIEW JOURNAL SPECIAL ISSUE

HIGHLIGHTS 2017

OCTOBER WHIRINGA-Ā-NUKU

E X P L O R E D I S C O V E R S H A R E

ACCELERATING RESEARCH CAREERS WITH RUTHERFORD DISCOVERY FELLOWSHIPS

EACH YEAR ON BEHALF OF THE GOVERNMENT WE AWARD RUTHERFORD DISCOVERY FELLOWSHIPS TO 10 LEADING EARLY- TO MID-CAREER RESEARCHERS, SUPPORTING THEM TO ACCELERATE THEIR RESEARCH CAREERS IN NEW ZEALAND. 2017 Fellowship recipients will seek answers to questions such as: How can we better track the population of threatened species? What makes cancer spread around the body? How do we constitutionally recognise and accommodate the rights of indigenous people globally?

2017 RUTHERFORD DISCOVERY FELLOWS

Dr Emma Carroll, University of Auckland, for research entitled: Family matters: developing close kin mark recapture methods to estimate key demographic parameters in natural populations.

Associate Professor Claire Charters, University of Auckland, for research entitled: Constitutional transformation to accommodate Māori in Aotearoa New Zealand: Lessons from around the globe.

Dr Aniruddha Chatterjee, University of Otago, for research entitled: Investigating the origin and consequences of epigenetic alterations in cancer metastasis.

Dr Christopher Cornwall, Victoria University of Wellington, for research entitled: Physiological and environmental controls of coralline algal calcification under climate change.

Dr Alex Gavryushkin, University of Otago, for research entitled: Online algorithms in evolutionary biology.

Dr David Hayman, Massey University, for research entitled: From individuals to populations: multi-scale approaches to pathogen emergence.

Dr Marwan Katurji, University of Canterbury, for research entitled: The invisible realm of atmospheric coherent turbulent structures: Resolving their dynamics and interaction with Earth's surface.

Dr Yvette Perrott, Victoria University of Wellington, for research entitled: Realising the potential of galaxy clusters as cosmological probes.

Dr Max Petrov, University of Auckland, for research entitled: Deciphering the metabolic pathways underlying post-pancreatitis diabetes.

Associate Professor Melinda Webber, University of Auckland, for research entitled: Kia tū rangatira ai ngā iwi Māori: living, succeeding, and thriving as iwi Māori.



VIEW MORE ABOUT THE 2017 RUTHERFORD DISCOVERY FELLOWS

2017 NEW ZEALAND RESEARCH HONOURS

E X P L O R E **D I S C O V E R** S H A R E

THE PREEMINENT CELEBRATION OF THE 150TH ANNIVERSARY WAS OUR RESEARCH AWARDS CEREMONIAL DINNER, HELD 150 YEARS TO THE DAY THAT ROYAL SOCIETY TE APĀRANGI WAS ESTABLISHED ON 10 OCTOBER 1867.

Over 420 guests from the research and business community attended the event held at the Auckland Viaduct. Society Councillor Professor Tahu Kukutai was MC for the evening and honourable guests included the Governor-General, Her Excellency Dame Patsy Reddy, His Excellency Sir David Gascoigne, the Minister for Science and Innovation, Hon. Paul Goldsmith, Tā Tipene O'Regan and Tā Pita Sharples of Ngā Pae o te Māramatanga, Sir Peter Gluckman, and representatives of Ngāti Mutunga, the iwi of Te Rangi Hiroa, the first Māori fellow of the Society. A mihi whakatau by representatives of Ngāti Whātua Ōrākei welcomed the Governor-General and guests, with Paora Sharples of Ngā Pae o te Māramatanga, son of Tā Pita, responding on behalf of the Society. The Governor-General gave a speech emphasising the contribution of the Society to New Zealand over its 150-year history, and musicians were an added dimension to the ceremony, particularly Moana Maniapoto with a mesmerising performance of her song Treaty.

VIEW VIDEO OF MOANA MANIAPOTO PERFORMING TREATY AT THE EVENT

A new Māori award, Te Puāwaitanga, was announced. The name was gifted by Ngā Pae o te Māramatanga, which has been assisting the Society to develop a suite of Māori research awards, with two more signalled on the evening.

Professor Wendy Larner FRSNZ, Provost at Victoria University of Wellington, was announced as the next President of the Society, beginning her term in July 2018.



Nineteen researchers from a range of academic and research organisations were presented with our awards.



The top honour, the **Rutherford Medal**, presented for an exceptional contribution to New Zealand research, was awarded to volcanologist Professor **Colin Wilson** FRS FRSNZ of Victoria University of Wellington. His research has shown how large

volcanoes behave before and during explosive eruptions, including those that created Lake Taupō, expanding our understanding of volcanoes and the hazards they pose.



SCIENCE

Professor **Sally Brooker** FRSNZ, University of Otago, was awarded the <u>Hector Medal</u> for designing and making molecules with exceptional properties such as the ability to act like a switch or magnet or to accelerate chemical reactions.

Some of these molecules may contribute to a 'greener' future, allowing creation of compostable plastics or even the production of hydrogen from light energy, which would be the ultimate 'green' fuel.

LEADERSHIP



The **Thomson Medal** was awarded to Professor **Charles Eason** CRSNZ. He received this medal for his inspirational leadership in his research career, particularly in the areas of drug development and pest control, and also as the Chief Executive of the Cawthron Institute

in Nelson, which has expanded its expertise in aquaculture breeding, seafood safety, nutraceuticals and coastal and freshwater ecology.

COMMUNICATION



The **Callaghan Medal** for science communication was awarded to Professor **Peter Shepherd** FRSNZ, University of Auckland, for developing activities to increase the understanding of science by the New Zealand public. These include a programme to keep

biology teachers, and their students, up to date with the latest developments in the life sciences and expanding the Queenstown Research Week.



Dr **Roger Cooper** FRSNZ, GNS Science, received the

Hutton Medal for his contributions to understanding the geological foundations and the earliest organisms of Zealandia and beyond and for his role in maintaining and developing paleobiology expertise in

New Zealand, which uses rocks to study ancient biology.

HUMANITIES AND SOCIAL SCIENCES



Emeritus Professor Laurie Bauer FRSNZ, Victoria University of Wellington, was awarded the <u>Humanities Aronui Medal</u> for his influential research in descriptive linguistics. His world-renowned research has focussed on wordformation, the description of ad the sound structure of language

New Zealand English, and the sound structure of language.



Professor **Cris Shore** FRSNZ, University of Auckland, was awarded the **Mason Durie Medal** for his contributions to political anthropology and the study of organisations, governance and power. He has pioneered the use of anthropological methods to study

policy and institutions.



Professor **Ngahuia te Awekotuku** received the <u>Pou Aronui Award</u> for her outstanding service to humanities-aronui over 40 years, showing an enduring commitment to indigenous culture and heritage. She is an acclaimed author of award-winning research and works

of fiction and poetry, recognised arts curator and critic, and stalwart of Writer's Festivals locally and overseas.



Professor **Tracey McIntosh**, University of Auckland, was presented the <u>**Te Rangi Hiroa**</u> <u>**Medal** by Ngāti Mutunga iwi representatives, the award being for advancing our understanding of enduring social injustices that undermine Māori wellbeing and</u>

inhibit social cohesion and meaningful cultural diversity in Aotearoa. Her research focuses on how to correct the intergenerational transmission of social inequalities, how they pertain to Māori, and influence new indigenous knowledge and policies that work for Māori and the nation.



Professor **Murray Cox**, Massey University, was similarly presented the <u>Te Rangi Hiroa Medal</u> for his anthropological work to reconstruct processes of transformation and change in past societies using genetic data. His research has revealed a number of social features

from the past such as marriage rules and farming expansion in South East Asia.

TECHNOLOGY, APPLIED SCIENCE AND ENGINEERING



Professor **Peter Tyler** FRSNZ, Victoria University of Wellington, was awarded the <u>MacDiarmid</u> <u>Medal</u> for designing and synthesising a new raft of potential drugs that target the enzymes of many diseases. This has led to the development of newly approved

lymphoma drug, Mundesine, that is giving patients new hope.



Professor Stephen Henry,

Auckland University of Technology, was awarded the **Pickering Medal** for his development and commercialisation of a surfacemodification technology, called Kode™ Technology, which shows huge promise for therapeutic use

including fighting cancer, reducing surgical infections and healing wounds.



Professor **Kim Pickering**, University of Waikato, was awarded the <u>Scott Medal</u> for her development of composite materials that are more sustainable. Many composite materials are not biodegradable or recyclable, but she has used more sustainable materials as fibres for

reinforcing, for example hemp, wood and harakeke or New Zealand flax.



Professor **lan Woodhead**, Lincoln Agritech, was also awarded the <u>Scott Medal</u> for advancing electronic engineering, particularly in developing sensors for the agricultural and environmental sectors, including an electric fence performance sensor, and an

electronic soil moisture sensor that allows for more efficient irrigation systems.

EARLY CAREER RESEARCHERS



Associate Professor **Geoff Rodgers**, University of Canterbury, received the <u>Cooper Award</u>, the Royal Society Te Apārangi Early Career Research Excellence Award for Technology, Applied Science and Engineering, for developing new technology for earthquake-

safe buildings that do not require repairing after large earthquakes.



Dr lan Hamling, GNS Science, received the <u>Hamilton Award</u>, the Royal Society Te Apārangi Early Career Research Excellence Award for Science, for advancing understanding of New Zealand's diverse tectonic and volcanic processes using satellite-based

techniques. He led work to rapidly define the Kaikoura M7.8 earthquake, the findings of which have implications for seismic hazard models used worldwide.



Dr **Aroha Harris**, University of Auckland, was awarded the inaugural <u>Royal Society Te Apārangi</u> <u>Early Career Researcher Award</u> in Humanities for her substantial contributions to the award winning Māori history, Tangata Whenua: An Illustrated History, which spans the

entirety of Māori history. She was lead author of the section on sociocultural history of twentieth-century Māori.



Dr Danny Osborne, University of Auckland, was awarded the inaugural Royal Society Te Apārangi Early Career Research Award in Social Sciences for advancing understanding of the psychological barriers to collective action. His research examines

New Zealanders' attitudes and shows that people's basic needs for stability, beliefs about their collective ability to change the system, and culture specific beliefs about past injustices, all undermine collective action.



Ryan Thomas, a PhD student at the University of Otago, received the Hatherton Award for experimental work leading to the first direct observation that certain atomic particles follow what's known as the Pauli exclusion principle when colliding multiple times, so long

as sufficient collision energy is maintained. This work demonstrates and extends our knowledge about the fundamental properties of quantum particles.

> E X P L O R E D I S C O V E R S H A R E

CLIMATE CHANGE WILL DISRUPT MANY FACTORS THAT CONTRIBUTE TO OUR HEALTH IN OCTOBER WE RELEASED A THIRD REPORT IN OUR EXPERT ADVICE SERIES LOOKING AT CLIMATE CHANGE FROM A NEW ZEALAND PERSPECTIVE, THIS TIME CONSIDERING HEALTH.

The previous reports, published in 2016, were *Climate Change Implications for New Zealand*, which set out the likely risks and vulnerabilities for New Zealand from climate change and *Transition to a Low-Carbon Economy for New Zealand*, which outlined the country's mitigation options.

The third report *Human Health Impacts of Climate Change for New Zealand* found that many factors that contribute to our health and well-being as New Zealanders are threatened by climate change. We can expect direct effects on our health, such as increased exposure to heat waves and adverse weather events but also indirect effects, such as reduced water and food safety and challenges to our mental health.

"We don't think that climate change will affect everybody equally or evenly. You can think of it a bit as a threat multiplier. Climate change is going to make life harder for people who are already suffering a bit. But, the sooner New Zealand and the global community act to reduce climate change, the less risk there is of us experiencing these negative effects on our health."

PROFESSOR ALISTAIR WOODWARD, EPIDEMIOLOGIST AND BIOSTATISTICIAN AT THE UNIVERSITY OF AUCKLAND, WHO CONTRIBUTED TO THE REPORT.



SEE MORE AT ROYALSOCIETY.ORG.NZ/ CLIMATE-CHANGE-HEALTH

EXPLORE DISCOVER SHARE

RESEARCHERS RECOGNISED FOR SUSTAINED RESEARCH EXCELLENCE

E X P L O R E D I S C O V E R S H A R E

WE AWARDED THREE ESTABLISHED RESEARCHERS PRESTIGIOUS JAMES COOK RESEARCH FELLOWSHIPS IN 2017, WHICH PROVIDE FUNDING FROM THE GOVERNMENT FOR THEM TO UNDERTAKE STUDY OR RESEARCH IN THEIR FIELD OF ENDEAVOUR FOR TWO YEARS.

Professor Katie Pickles, University of Canterbury, will examine heroines in modern global history. She will research what these exceptional individuals reveal about women's changing roles and status over the past 200 years, focusing on Aotearoa New Zealand.

Professor Vickery Arcus, University of Waikato, developed a theoretical framework for explaining the behaviour of enzymes in response to changes in temperature. He will use the fellowship to explore if this framework continues to explain the behaviour of enzymes in more complex biological systems such as cells, organisms and ecosystems. This research might help us predict how biological systems will react to increasing global temperatures.

Associate Professor Stéphane Coen, University of Auckland, will further his research into optical fibres and microresonators. Heralded by the 2005 Nobel Prize in Physics, optical frequency combs allow light from lasers to be split into thousands of ultra-stable laser beams with different wavelengths. He will use his fellowship to develop new flexible ways to generate such combs, which have many potential applications, including in the telecommunications industry. The Royal Society Te Apārangi awarded him the Hector Medal in 2016 for research in this area.

VIEW MORE ON THE 2017 JAMES COOK RESEARCH FELLOWS

HIGHLY PROMISING RESEARCHERS AWARDED FELLOWSHIPS AND SCHOLARSHIPS



OUR RUTHERFORD FOUNDATION TRUST AWARDED FIVE POSTDOCTORAL FELLOWSHIPS AND TWO PHD SCHOLARSHIPS WITH FUNDING FROM GOVERNMENT IN 2017.

Two-year New Zealand Postdoctoral Fellowships:

Dr Robin Lee, University of Canterbury, for research entitled: Earthquake-induced ground motion prediction: Realising the paradigm shift from empirical relations to physics-based simulation methods.

Dr Daniel Preston, University of Canterbury, for research entitled: Building bigger and better cages: a novel approach to large and complex molecules.

Dr Michael Price, Victoria University of Wellington, for research entitled: Solar cells beyond the Shockley-Quiesser limit: 2-D semiconductors at the interface.

Dr Jessica Rodrigues, Plant and Food Research, for research entitled: Harnessing sequence variation of MYB genes across plant genomes for a healthy and colourful future.

Dr Erica Todd, University of Otago, for research entitled: Epigenetic regulation of sex change.

Three-year Cambridge Rutherford Memorial PhD Scholarships:

Alexander Sneyd, University of Cambridge (currently at Victoria University of Wellington), for research entitled: Application of metal halide perovskites and other semiconductor materials to photovoltaic devices.

Charlotte Steel, University of Cambridge (currently at University of Otago), for research entitled: How protein misfolding can be prevented in neurodegenerative disease.



OCTOBER | WHIRINGA-Ā-NUKU

EXPLORE DISCOVER SHARE

GREAT KIWI RESEARCH, SHARING WOMEN'S DISCOVERIES

"The inner lining of the uterus is called the endometrium. I studied how it changed during the menstrual cycle, how it sheds during period and how it prepares itself to receive an embryo in the second half of the cycle but when people outside the profession ask me what I do, I would say 'Well there's this amazing tissue called the endometrium' and many times various women would stop me and say 'I know, I have it.' I would say 'yes, every women with a uterus has an endometrium', but then I realised they were talking about endometriosis."

DR ANNA PONNAMPALAM, UNIVERSITY OF AUCKLAND, IN HER TALK 'LET'S TALK ABOUT ENDOMETRIOSIS!' IN THE 'PERIOD PAIN TO PREGNANCY WEIGHT GAIN: WHAT'S GOING ON IN THE FEMALE BODY?' SESSION. In October we began a nationwide series of eight talks, each featuring two to four women researchers, celebrating the discoveries women are making throughout New Zealand. These talks featured different disciplines coming together to demonstrate the value of thinking in different ways about similar issues. The details of the talks were:

- 'Protecting taonga: snapshots from a conservation biologist and an environmental chemist' with Associate Professor Sally Gaw and Dr Tammy Steeves from the University of Canterbury.
- '#CommunicateNow: New tools for language learners and sport' with Dr Ashleigh-Jane Thompson and Professor Cynthia White from Massey University.
- 'Water women: Protecting our lakes, rivers and oceans' with Dr Joanne Clapcott, Dr Kirsty Smith and Dr Susie Wood from the Cawthron Institute.
- 'Science and the Arts: Creating futures' with Associate Professor Elspeth Tilley and Dr Jacqui Horswell from Massey University, Wellington.
- 'From populations to peoples: Re-imagining futures' with Professor Tahu Kukutai and Dr Jaimie Veale from University of Waikato.
- 'Nourishing knowledge: supporting our youth, athletes and coastlines' with Associate Professor Mere Berryman, Associate Professor Karin Bryan and Dr Stacy Sims from the University of Waikato.
- 'Period pain to pregnancy weight gain: What's going on in the female body?' with speakers Dr Anna Ponnampalam, Jasmine Plows, Dr Clare Reynolds and Dr Shikha Pundir from the Liggins Institute at the University of Auckland.
- 'Culturally informed research: Mathematics and the Classics in New Zealand' with Associate Professor Roberta Hunter and Dr Anastasia Bakogianni from Massey University, Auckland.



NOVEMBER | WHIRINGA-A-RANGI

NOVEMBER | WHIRINGA-A-RANGI

E X P L O R E D I S C O V E R S H A R E

DIVERSE TOPICS IMPORTANT FOR NEW ZEALAND SUPPORTED BY THE MARSDEN FUND

A total of 133 research projects were successful in the 2017 funding round for the Marsden Fund, which the Society administers on behalf of government to support investigator-initiated research in the areas of science, engineering, mathematics, social sciences and the humanities. This was an increase on the 117 projects supported in 2016, due to the increase over four years foreshadowed in the government's National Statement of Science Investment.

The number of grants awarded to established researchers rose significantly from 68 in 2016 to 84 in 2017. Subjects to be investigated cover a range of topics of great interest to New Zealand, including improving our conservation efforts to protect New Zealand's unique birdlife, developing novel cholesterol-lowering therapies, and providing insight on the voyages that first brought humans to Aotearoa New Zealand.

Professor Kathy Campbell FRSNZ from the University of Auckland was awarded a standard grant. Her team will drill into the world's oldest land-based hot springs (3.5 billion years old) in outback Western Australia for new evidence on some of the earliest life on Earth, and clues to help find remains of past life on Mars.



"We will drill down into the ancient hot spring deposit to obtain a core of unweathered rock to sample for geochemical, mineral, and organic analysis to help solve the riddle of how life took hold on Earth."

PROFESSOR KATHY CAMPBELL



READ MORE: COULD LIFE HAVE ORIGINATED ON LAND?



Researchers from the University of Auckland (Associate Professor Rachel Fewster) and Massey University (Professor Stephen Marsland) also received funding to combine sound recordings with statistics, software, and genetic information to better estimate the populations of our endangered, but delightfully noisy, native wildlife.

"There are thousands of automatic recorders around New Zealand recording birdsong. But unless you have tools to analyse the data, you've just got a lot of memory used up storing sound that nobody will ever pay any attention to. Turning data into information isn't easy, but it has to be done, and done well, to make the collection of the data worthwhile."

PROFESSOR STEPHEN MARSHLAND, MASSEY UNIVERSITY AND TE PŪNAHA MATATINI



READ MORE: CELLS AND WHISTLES: SUPERCHARGING OUR BIODIVERSITY MONITORING TOOLKIT

EXPLORE DISCOVER



NOVEMBER | WHIRINGA-A-RANGI



Strong support for early career researchers continued through the Fast-Start grants. Researchers will look at topics such as climate change, increasing the accuracy of predicting earthquake damage, the first systematic study of Māori rock art, and developing better disease-resistant crops.

Dr Chris McGann from the

University of Canterbury received a Fast Start grant to develop methods to improve the prediction of ground shaking from earthquakes of different magnitudes, taking into account location-specific factors, such as soil structure. The current model for predicting earthquakes is too simple in most locations, only taking one dimension of the seismic waves into account, according to McGann.

"In the [current] model we tend to assume and only worry about the waves that are propagating (travelling) straight up. We're trying to account for the fact that the soil is not in perfect horizontal layers."

DR CHRIS MCGANN

READ MORE: EARTHQUAKE ACCOUNTING: A NEW WAY OF INCLUDING LOCAL SOILS IN THE PREDICTIONS OF GROUND SHAKING





Dr Naomi Simmonds (Ngāti Raukawa) from the University of Waikato was awarded a Marsden Fast-Start to lead a hīkoi to rediscover the journey of Ngāti Kahungunu ancestor Māhinaarangi, in order to reconnect descendants with the stories, land and sites of significance.

"This project has, at its heart, an assumption that reconnecting to the lands, environments and knowledges of our ancestors through pūrākau and hīkoi can provide positive pathways for descendants of Māhinaarangi in contemporary Aotearoa."

DR NAOMI SIMMONDS



READ MORE: TAKU ARA RĀ: WALKING IN OUR ANCESTORS' FOOTSTEPS

STUDENTS RISE TO THE CHALLENGE TO DEVELOP A HELPFUL APP



As part of the 2017 TechHub CREST Challenge, teams of Year 9 and Year 10 students from Auckland, Christchurch and Wellington designed a mobile app (to beta level) which would either help someone who has a daily challenge or help address or solve a social issue they identified at their school.

TechHub is run collaboratively by IT Professionals NZ and CREST (a Royal Society Te Apārangi programme) with the students working towards a Team Bronze CREST Award.

The national winner was Team Alzheimers (Kimberley MacKinnon, Zoe Evans and Fleur Johnson-Dunn) from Hornby High School in Christchurch with teacher Ben Carter. Their app was designed to provide help and support to Alzheimer's sufferers and their supporters by providing memory games and reminder notices.


NOVEMBER | WHIRINGA-A-RANGI

RESEARCHERS AND SCHOLARS AT THE TOP OF THEIR FIELDS ELECTED AS FELLOWS

Sixteen researchers and scholars who have advanced knowledge in the areas of history, theology, art, computer science, psychology, law, Māori studies, chemistry, soil science, poetry, linguistics, geology, education, engineering and mathematics were announced as Fellows in 2017, following the annual selection process. Being made a Fellow is an honour that recognises true international distinction in research and scholarship. Fellows can use the post-nominal 'FRSNZ' after their name to indicate this honour.

Professor Charlotte Macdonald, School of History, Philosophy, Political Science and International Relations, Victoria University of Wellington, is a historian who has used innovative methods to study 19th century colonies and empires, New Zealand history, gender and women's history and cultural history of bodies, modernity, sport and spectating.

Professor Paul Trebilco, Department of Theology and Religion, University of Otago, has made original contributions in three main areas: Jewish communities in Asia Minor; early Christians in the city of Ephesus, modernday Turkey; and investigations into self-designation and group identity in early Christians.

Professor Michael Parekōwhai, University of Auckland, is an artist who explores perceptions of place and nationhood through sculpture, installation and photography. His research investigates the ambiguities of identity, the sensitivities of historical memory, the role of appropriation and assimilation in the artistic canon, and the significance of biculturalism. **Professor Mengjie Zhang**, School of Engineering and Computer Science, Victoria University of Wellington, has made significant contributions in the area of artificial intelligence in the field of evolutionary learning and optimisation, particularly in the areas of image analysis; feature selection and pattern recognition; and transfer learning (where machine learning can be applied to a related problem).

Professor Margaret Wetherell, School of Psychology, University of Auckland, is internationally known for her work developing discourse theory and methods for social psychology for studying how do the things people say and do affect society and how does society influence people. She has also developed a new theoretical approach to affect and emotion for social research.

Professor Tony Ward, School of Psychology, Victoria University of Wellington, has primarily researched forensic and correctional topics, prominently centred on violent and sexual offenders and rehabilitation. His theoretical contributions have resulted in substantial empirical research projects and innovations in treatment around the world.

Professor Mark Henaghan, Faculty of Law, University of Otago, is New Zealand's leading family law scholar, who has had a major impact on the judicial system, legislative reform and legal practice in New Zealand.

Professor Margaret Mutu, Māori Studies, University of Auckland, has advanced scholarship with her cuttingedge analysis of Māori language texts relating to Te Tiriti o Waitangi and Māori claims against the Crown, oral histories and traditions, and Treaty settlements. **Professor Jadranka Travas-Sejdic**, School of Chemical Sciences, University of Auckland, has made significant contributions to the research field of biosensing. She has developed hand-held, in-field detection systems using conducting polymers for fast sensing of biological molecules and small molecular targets of biological interest.

Professor Michele Leggott, English, Drama, and Writing Studies, University of Auckland, is a renowned poet and poetry scholar who seeks to open up poetry to as many audiences as possible. She was appointed New Zealand Poet Laureate in 2007-2009. Her first book of poetry *Like This?* won the International PEN First Book of Poetry and in 1995 *DIA* won the New Zealand Book Award for Poetry.

Professor Miriam Meyerhoff, School of Linguistics and Applied Language Studies, Victoria University of Wellington, is a leading sociolinguist, a discipline that studies the effect of any or all aspects of society on how language is used. Her research has focused on language use in New Zealand, the Pacific and the UK. Her latest research focusses on variation in the English of Auckland citizens, a richly linguistically diverse community.

Professor Richard McDowell, AgResearch, Invermay, is an international authority on the management of contaminant losses from agricultural land and their impact in freshwater, particularly phosphorus. He has developed 18 of the 21 strategies available internationally to reduce phosphorus loss from land to water.

Dr Nicholas Mortimer, GNS Science, Dunedin, is a geologist who has played a key role in exploring, revealing and promoting the continent of Zealandia. The foundation for this has been his multifaceted work on the older crystalline rocks of on-land New Zealand, including their relationships with Australia and Antarctica.

Distinguished Professor Viviane Robinson, Faculty of Education and Social Work, University of Auckland, has shown through her research the importance of educational leadership in student outcomes. She has designed and evaluated interventions to increase school leader's skills and has developed resources for leadership development that are trademarked and used internationally.

Professor Noam Greenberg, School of Mathematics and Statistics, Victoria University of Wellington, researches the computable contents of mathematics and algorithmic randomness. He has developed a new research programme in 'higher' randomness, in which computability is used to give a hierarchy of randomness: the more complex the tests, the higher the degree of randomness that is required to pass these tests.

Professor Rick Millane, Department of Electrical and Computer Engineering, University of Canterbury, is internationally recognised for his theoretical and computational methods for imaging biological molecules and tissue with wide applications across physical, biological and medical sciences.

The Society also announced the election of an Honorary Fellow. The election of Honorary Fellows aims to encourage strong ties with leading international scientists and scholars and New Zealand's research community.

Professor Gerry Gilmore FRS, Institute of Astronomy, University of Cambridge, UK, leads efforts to understand the structure and origin of our Galaxy and to deduce the nature of dark matter in the early Universe.



E X P L O R E D I S C O V E R S H A R E

150 YEARS OF DISCOVERY

All copies of the *Transactions of the Royal Society of New Zealand*, one of New Zealand's most important research publications, were made available online in November, thanks to a collaborative project between the Society and the National Library of New Zealand.

Volumes from 1867 were already hosted on Papers Past and the project filled in the missing years between 1961 and 1970. Volumes from 1971 are hosted by Taylor & Francis, the academic publisher of the eight peer-reviewed journals produced today by Royal Society Te Apārangi. E X P L O R E D I S C O V E R S H A R E

"When our organisation was set up as the New Zealand Institute in 1867, its primary objective was to publish the findings from the regional research societies around New Zealand. The Transactions and Proceedings were the formal outlet of the discoveries and discussions taking place around the country about the unique flora, fauna and geology of New Zealand as well as considering the origins of Māori and describing mātauranga Māori learned from tangata whenua."

DR ANDREW CLELAND FRSNZ, CHIEF EXECUTIVE, ROYAL SOCIETY TE APĀRANGI

VISIT PAPERS PAST

GUIDANCE ON AVOIDING PREDATORY PUBLISHING

In November we released 'Selecting a quality publisher' which provides guidance to researchers on how to assess the quality of publishing venues before submitting their work for publication. It outlines a number of questions to ask when assessing whether a publisher is a bona fide operation. It also discusses key issues in scholarly publishing, which has been transformed by the online environment. The ease of digital dissemination and the increasing emphasis on open access publication are two factors that have driven this transformation.



VIEW PUBLISHING GUIDANCE

EXPLORE DISCOVER SHARE

GOLD CREST PROJECT ABOUT HOROPITO



Corrie Anderson, of Columba College, was awarded a Gold CREST medal in November for her investigation on the chemical analysis and insecticidal properties of horopito (Pseudowintera colorata). CREST is a Royal Society Te Apārangi programme with different levels to encourage students to be innovative, creative and to problem solve in science, technology and environmental studies.

Corrie had researched the anti-fungal properties of horopito for her Silver CREST project and extended this into

horopito's chemical structure and insecticidal properties for her Gold CREST project. She chemically separated fractions from extracts of horopito prepared at different times of the year and tested the impact of these fractions on aphids. Her study shows the polygodial fractions of the horopito plant have the potential to be used in an insect repellent on leaves that aphids destroy.

"My Gold CREST project really inspired me. CREST let me explore the opportunities given at the University of Otago, which also made me apply for the uni because I loved the labs, the people and the experiences they offered."

CORRIE ANDERSON



READ MORE ABOUT CORRIE'S GOLD CREST PROJECT



E X P L O R E D I S C O V E R S H A R E



DECEMBER | HAKIHEA

65

POWERING POTENTIAL: SELF-CLEANING HIKING BOOTS AMONG INNOVATIVE SOLUTIONS

EXPLORE

DISCOVER SHARE



Forty talented secondary school science students from around New Zealand came up with many innovative solutions to future problems posed by scientist mentors during Powering Potential in December. This programme seeks to give the students valuable skills and experiences, and demonstrate to them the benefits of following a career in science and technology.

After less than 48 hours investigating their topics in groups with input from their mentors, the students presented their ideas to a public audience and received feedback.

One of the eight teams, Lil' Rusty explored the pathogens behind kāuri dieback and myrtle rust and came up with a suite of possible solutions for each including self-cleaning hiking boots and empowering communities and iwi to help reduce the pests spreading. Their science mentor was Dr Kirstin Wurms from Plant & Food Research.

"As science mentors we got as much, if not more, out of the exercise as the students themselves – these teenagers are the future of New Zealand science and I came away from Powering Potential feeling enormously buoyed and encouraged that our future is in very able hands."

DR KIRSTIN WURMS



VIEW MORE ABOUT 2017 POWERING POTENTIAL

POTENTIAL USES OF GENE EDITING IN AOTEAROA



New gene-editing techniques are revolutionising the ease and accuracy of making changes to genetic material. This topic was the major expert advice project the Society was running in 2017 to consider the full range of ethical, social, legal, regulatory, environmental and economic implications of gene editing for New Zealand. We sought input from a large multidisciplinary expert panel and convened a Māori reference group to address cultural perspectives.

In December we released the first of several planned discussion papers on how gene editing could be used in New Zealand.

The use of gene editing in healthcare highlighted four scenarios of using gene editing to treat disease or enhance human function, making genetic changes that either would or would not be passed on to future generations.

The second discussion paper *The use of gene editing in pest control* set out how gene editing technologies could be used to control wasps, possums or rats and stoats in New Zealand and what the environmental, technical/scientific, legal and ethical considerations would be.

The scenarios in both documents were designed to help New Zealanders consider which uses they might be comfortable with and to send their feedback to the panel.

"The technology of gene editing offers society a wide range of opportunities such as curing diseases and eradicating pests but, like all new technologies, there are uncertainties and there may be areas where collectively we are comfortable to use the technology and areas where we are not."

PROFESSOR BARRY SCOTT FRSNZ, MASSEY UNIVERSITY, CO-CHAIR OF THE GENE EDITING PANEL.

VIEW GENE EDITING IN AOTEAROA CASE STUDIES

EXPLORE DISCOVER

SHARE

2017 PRIME MINISTER'S SCIENCE PRIZES

The Prime Minister's Science Prizes recognise the impact of science on New Zealanders' lives, celebrate the achievements of current scientists and encourage those of the future. The Society administers the prizes on behalf of government.

The 2017 Prime Minister's Science Prize, the premier award for science that is transformational in its impact, was awarded to <u>Plant & Food Research and the Psa Response</u> <u>Team</u> led by Chief Operating Officer Dr Bruce Campbell. This multidisciplinary team was recognised for its rapid and successful response to Psa, a bacterial disease that results in the death of kiwifruit vines.

The Prime Minister's 2017 MacDiarmid Emerging Scientist Prize Winner was awarded to <u>Dr Carla Meledandri</u>

from the University of Otago, who is at the forefront of developing applications for nanotechnology. This research involves incorporating silver nanoparticles into a range of breakthrough products designed to treat and prevent dental disease. The Prime Minister's 2017 Science Teacher Prize was

awarded to Nelson science teacher **Sarah Johns** who is in charge of junior science at Nelson College for Girls. Sarah says she empowers her students by encouraging them to share her philosophy of life—to be curious, open to possibilities and willing to take a risk.

EXPLORE

DISCOVER

SHARE

The Prime Minister's 2017 Science Communication Prize was awarded to <u>Damian Christie</u>, a lawyer-turnedjournalist, who will use the prize money to establish New Zealand's first science video news agency to showcase some of the extraordinary achievements and discoveries from within New Zealand's science sector and promote the successes to new audiences here and overseas.

The Prime Minister's 2017 Future Scientist Prize was awarded to former Auckland Grammar School student Jonathan Chan for development of a sophisticated, 3D printed mesh emulating a spider web, as a novel approach to atmospheric water collection.

FROM LEFT DR CARLA MELEDANDRI; SARAH JOHNS; JONATHAN CHAN; RESEARCH, SCIENCE AND INNOVATION MINISTER HON DR MEGAN WOODS; PRIME MINISTER RT HON JACINDA ARDERN; DR BRUCE CAMPBELL AND DAMIAN CHRISTIE.



HIGHLIGHTS 2017

ON REFLECTION | NO TE HURIHURINGA

ON REFLECTION NO TE HURIHURINGA

"WHEN I WAS ELECTED TO THE COUNCIL OF ROYAL SOCIETY TE APĀRANGI IN 2013 I DISCOVERED I KNEW LITTLE ABOUT THE RANGE OF ACTIVITIES THE SOCIETY WAS ENGAGED IN."



EMERITUS PROFESSOR RICHARD BEDFORD QSO FRSNZ ROYAL SOCIETY TE APÄRANGI PRESIDENT 2015–2018

As a Fellow I knew something about the work of the Academy, and as a longstanding member of one of the Society's Constituent Organisations (the New Zealand Geographical Society) I was aware of the programmes for teachers and the support that was provided for New Zealand's involvement in the International Unions representing the sciences, social sciences and the humanities. As a former member of the Marsden Fund Council, I knew about the Society's role in managing the Marsden Fund. But, as I quickly discovered, there was a great deal I did not know.

When I reflect on my five years as a member of Council, including the opportunity of serving as President for the past three years, I am humbled by the reach, range and quality of the Society's activities and relationships. The annual review for 2017 captures well the essence of this reach and range – something which I think may surprise readers. New Zealand's national academy is unusual internationally because of its inclusion of all the major areas of intellectual endeavour – the physical sciences, the life sciences (including medicine), the social sciences, philosophy, mathematics and computing, engineering, technology and the humanities. Most national academies overseas span just one of these domains – Australia, for example, has five national academies, and the UK has numerous subject-related societies.

It has been a real privilege to work with a very talented and dedicated group of Council members and Society staff. When I joined the Council one of the key items on Sir David Skegg's agenda, as President, was raising the profile of the Society's independent expert advice function. A very productive engagement with the Prime Minister's Chief Science Adviser, Sir Peter Gluckman, and his team of Departmental Science Advisers, has evolved and the Society is wellpositioned as an essential part of New Zealand's research advice ecosystem. This is not necessarily a new development – as John Martin's excellent history shows, expert advice provided by the Society has made major contributions to public and political debate in the past. In recent years I think we have seen a resurgence of this contribution, as well as in the respect the Society has earned as an independent source of excellent, evidence-based commentary.

A distinctive feature of Royal Society Te Apārangi is its 10 Branches. I am not aware of any comparable national academies overseas that have branches in different parts of the country. The Branches contribute powerfully to the Society's public engagement and a special position is reserved on Council for a representative. Their current representative, Emeritus Professor Ken Strongman, is an active champion of the distinctive contribution they make to our primary function. As President I have enjoyed my engagement with the Branches enormously; they played a very important role in the Society's 150th anniversary celebrations.

ON REFLECTION | NO TE HURIHURINGA

E X P L O R E D I S C O V E R S H A R E

Our 150th anniversary has provided an opportunity for reflection, reassessment and renewal. As I complete my term as President, I want to express my appreciation to the Society's staff for the leadership they have shown in driving a significant agenda for change. My term as President has overlapped with Dr Andrew Cleland's first three years as Chief Executive and he has demonstrated a strong commitment to making the Society as relevant as possible for New Zealand's 21st century research environment.

In a research environment where change, rather than the status quo, is the order of the day, I want to acknowledge the very constructive, robust debates we have had on Council about how to address a range of distinctive as well as general challenges that are facing national academies. A distinctive one in New Zealand is ensuring the national academy has relevance for our Māori research community and, through this, delivers on our obligations under the Treaty of Waitangi. The Council has been unanimous in its support for the moves we have been taking in this direction.

Accommodating diversity amongst researchers and their ways of knowing the world is an essential prerequisite for a successful national academy. As we navigate our 151st year, which also happens to be the 125th anniversary of women's suffrage in New Zealand, we are continuously affirming our commitment to becoming an academy that better represents our 21st century research community. In this regard, we are seeking to be recognised as the eye of the needle that features prominently in a famous whakataukī that is attributed by some to the first Māori king, Pōtatau te Wherowhero: Kotahi te kōwhao o te ngira e kuhuna ai to miro mā, te miro pango, te miro whero.

I muri, kia mau ki te aroha, ki te ture, me te whakapono.

Through the eye of the needle pass the white threads, the black threads, and the red threads.

Afterwards, looking to the past as you progress, hold firmly to your love, the law and your beliefs.

The process of acknowledging inclusive ways of understanding phenomena and relationships makes for a much stronger knowledge base. It also gives space for much richer stories and more innovative ways of addressing challenges. This is the essence of our mission to enable everyone to discover, explore and share knowledge.

Emeritus Professor Richard Bedford QSO FRSNZ

ROYAL SOCIETY TE APĀRANGI PRESIDENT 2015-2018



OUR FINANCIALS

In the year to 30 June 2017 we consolidated our financial position. Income was \$7.79m and we were able to generate a \$0.86m surplus. We remain reliant on our professional services provision to government for about three quarters of our income. About half of the surplus was a gain on the revaluation of the development of our physical site and buildings in Turnbull St. We are pleased to see reinvestment in the site starting to pay off. The remainder reflected sound financial management.

Our balance sheet for the group combining the Society and its associated Endowment Trust shows an equity of \$17.2m, of which \$11.6m is represented in the physical assets – primarily land and buildings. The improved balance sheet enabled the Society to transfer \$2.5m to its Endowment Trust late in 2017, thereby building the funds invested to enable future support of worthwhile new activities such as the growing suite of awards.

E X P L O R E D I S C O V E R S H A R E

VIEW OUR AUDITED 2017 FINANCIAL STATEMENTS ONLINE



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royalsociety.org.nz

Royal Society Te Apārangi

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ROYAL SOCIETY of NEW ZEALAND

Consolidated Financial Statements

for the year ended 30 June 2017



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Royal Society of New Zealand Directory for the year ended 30 June 2017

Society Council

Professor Richard Bedford

Professor Gaven Martin

Professor Barry Scott

Professor Dame Anne Salmond

Dr Liz Gordon

Dr Christine Jasoni

Professor Caroline Saunders

Dr Siouxsie Wiles

Professor Margaret Tennant

Dr Giles Dodson

Associate Professor Tahu Kukutai

Registered Office

11 Turnbull Street, Thorndon, Wellington

Nature of Business

Fostering science, technology and the humanities in New Zealand

Charities Commission registration number

CC38796

Independent Auditor

PricewaterhouseCoopers, Wellington

2





Independent auditor's report

To the Council of the Royal Society of New Zealand

The consolidated financial statements comprise:

- the statement of financial position as at 30 June 2017;
- the statement of comprehensive revenue and expense for the year then ended;
- the statement of changes in net assets for the year then ended;
- the cash flow statement for the year then ended; and
- the notes to the consolidated financial statements, which include a summary of accounting policies.

Our opinion

In our opinion, the consolidated financial statements of the Royal Society of New Zealand (the Society), including its subsidiaries (the Group), present fairly, in all material respects, the financial position of the Group as at 30 June 2017, its financial performance and its cash flows for the year then ended in accordance with Public Benefit Entity Standards Reduced Disclosure Regime.

Basis for opinion

We conducted our audit in accordance with International Standards on Auditing (New Zealand) (ISAs NZ) and International Standards on Auditing (ISAs). Our responsibilities under those standards are further described in the *Auditor's responsibilities for the audit of the consolidated financial statements* section of our report.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

We are independent of the Group in accordance with Professional and Ethical Standard 1 (Revised) *Code of Ethics for Assurance Practitioners* (PES 1) issued by the New Zealand Auditing and Assurance Standards Board and the International Ethics Standards Board for Accountants' *Code of Ethics for Professional Accountants* (IESBA Code), and we have fulfilled our other ethical responsibilities in accordance with these requirements.

Other than in our capacity as auditor and provider of agreed upon procedures, we have no relationship with, or interests in, the Group.

Responsibilities of the Council for the consolidated financial statements

The Council are responsible, on behalf of the Society, for the preparation and fair presentation of the consolidated financial statements in accordance with Public Benefit Entity Standards Reduced Disclosure Regime, and for such internal control as the Council determine is necessary to enable the preparation of consolidated financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the consolidated financial statements, the Council are responsible for assessing the Group's ability to continue as a going concern, disclosing, as applicable, matters related to going concern and using the going concern basis of accounting unless the Council either intend to liquidate the Group or to cease operations, or have no realistic alternative but to do so.



Auditor's responsibilities for the audit of the consolidated financial statements

Our objectives are to obtain reasonable assurance about whether the consolidated financial statements, as a whole, are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with ISAs NZ and ISAs will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these consolidated financial statements.

A further description of our responsibilities for the audit of the financial statements is located at the External Reporting Board's website at: https://www.xrb.govt.nz/standards-for-assurance-practitioners/auditors-responsibilities/audit-report-7/

This description forms part of our auditor's report.

Who we report to

This report is made solely to the Council, as a body. Our audit work has been undertaken so that we might state those matters which we are required to state to them in an auditor's report and for no other purpose. To the fullest extent permitted by law, we do not accept or assume responsibility to anyone other than the Society and the Council, as a body, for our audit work, for this report or for the opinions we have formed.

The engagement partner on the audit resulting in this independent auditor's report is Chris Ussher.

For and on behalf of:

Arcousterhouseleepers

Chartered Accountants 16 October 2017

Wellington

Royal Society of New Zealand Councillors' report for the year ended 30 June 2017

The Councillors have pleasure in presenting the annual report of the Royal Society of New Zealand ("the Society") incorporating the financial statements and the auditor's report for the year ended 30 June 2017

The Councillors of the Society have authorised these financial statements presented on pages 6 - 18 for issue on 26 September 2017

For and on behalf of the Council

øl.

Richard Bedford President 13 October 2017

1 **Caroline Saunders**

Councillor 13 October 2017



Royal Society of New Zealand Statement of comprehensive revenue and expenses for the year ended 30 June 2017

		Consolida	nted	Parent	
	Notes	2017 \$000's	2016 \$000's	2017 \$000's	2016 \$000's
			 2013/20012101 		,
Revenue from non-exchange transactions	19				
Government contract revenue		500	500	500	500
Donations		34	-	-	-
		534	500	500	500
Revenue from exchange transactions					
Society membership		245	284	245	284
Interest income		184	188	137	159
Government contract revenue	19	5,577	4,770	5,577	4,770
Rental of investment property	1	555	570	555	570
Other operating revenue		643	761	643	761
		7,204	6,573	7,157	6,544
Revenue from non cash transactions					
Gains/(Loss) on fair value of investment property	6	50	431	50	431
Total other income		50	431	50	431
Total Revenue		7,788	7,504	7,707	7,475
Expenses					
Audit expense		43	42	38	38
Depreciation and amortisation expense	5	204	157	204	157
Employee benefits expense	-	3 704	3 417	3 704	3 /17
Grants		12	3,417	3,704	5,417
Transfer to Boyal Society of New Zealand Endowment Fund Tr	uct	42	40		-
Other expenses	usi	2 265	-	2.205	735
United expenses	-	3,305	2,882	3,365	2,882
Losses/(Reversal) on revaluation of land and buildings	5	(430)	5	(430)	5
lotal Expenses		6,929	6,549	6,882	7,234
		_	Sector Se		
Total surplus / (deficit) for year		860	954	826	240
Other comprehensive revenue and expense					
Gains/(Losses) on revaluation of land and buildings	10	-	-		-
Other comprehensive revenue and expense for the year		<u></u>		-	-
lotal comprehensive revenue and expense for the year		860	954	826	240
Surplus / (deficit) attributable to:		826	240		
Farent - Royal Society of New Zealand Subsidiary - Royal Society Endowment Fund Trust		826	240 714	826	240
		860	954	826	240
Total comprehensive revenue and expense attributable to					
Parent - Royal Society of New Zealand		826	240	826	240
Subsidiary - Royal Society Endowment Fund Trust		34	714	-	-
x ⁴³ 8 3		860	954	826	240

The above statements of comprehensive revenue and expenses should be read in conjunction with the accompanying notes on pages 10 - 18

Royal Society of New Zealand Statement of changes in net assets for the year ended 30 June 2017

Group	Notes	Special purpose reserve \$000's	Asset revaluation reserve \$000's	Retained surplus \$000's	Total equity \$000's
Balance as at 1 July 2015		1,191	-	14,160	15,351
Surplus (deficit) for the year			-	954	954
Other comprehensive income		-	-	-	-
Total comprehensive income		-	-	954	954
Transfer to/(from) designated purpose					
reserve	11	713	-	(713)	-
Closing equity 30 June 2016		1,904	-	14,401	16,305
Surplus (deficit) for the year		-	-	860	860
Other comprehensive income				-	-
Total comprehensive income			1 	860	860
Transfer to/(from) designated purpose reserve	11	28		(28)	
				(20)	-
Closing equity 30 June 2017		1,932		15,233	17,165

			Asset		
		Special purpose	revaluation	Retained	
Parent	Notes	reserve	reserve	surplus	Total equity
		\$000's	\$000's	\$000's	\$000's
Balance as at 1 July 2015		225		14 170	14 405
Complex (deficit) for the		255	-	14,170	14,405
Surplus (deficit) for the year		-	-	240	240
Other comprehensive income		-	2 <u>1</u> 5	-	· •
Total comprehensive income				240	240
Transfer to/(from) designated purpose reserve			_	-	
					_
Closing equity 30 June 2016		235	- ×	14,410	14,645
Surplus (deficit) for the year		-	-	826	826
Other comprehensive income		-	-	-	-
Total comprehensive income		-		826	826
Transfer to/(from) designated purpose					
reserve	11	-			-
Closing equity 30 June 2017		235	-	15,236	15,471

The above statements of changes in net assets should be read in conjunction with the accompanying notes on pages 10 - 18

Royal Society of New Zealand Statement of financial position as at 30 June 2017

	Group		Parent		
	Notes	2017	2016	2017	2016
		\$000's	\$000's	\$000's	\$000's
ASSETS					
Current assets					
Cash and cash equivalents	9	4,080	2,290	3,601	1,569
Receivables from exchange transactions	7	288	190	276	185
Investments and other financial assets	10	2,770	4,110	1,563	3,169
Prepayments	1	50	15	50	15
Inventories		20	17	20	17
Total current assets		7,209	6,623	5,511	4,956
Non-current assets					
Property, plant and equipment	5	7,837	7,497	7,837	7,497
Investment Properties	6	3,510	3,460	3,510	3,460
Intangible assets	8	260	115	260	115
Total non-current assets		11,607	11,071	11,607	11,071
Total assets		18,816	17,694	17,118	16,027
LIABILITIES					
Current liabilities					
Trade and other payables	12	949	896	945	889
Income in advance	13	702	493	702	493
		1,651	1,389	1,647	1,382
Total Liabilities		1.651	1.389	1.647	1 382
					1,002
Net assets		17,165	16,305	15,471	14,645
EQUITY					
Retained earnings		15.233	14.401	15,236	14 410
Designated purpose reserve	11	1,932	1,904	235	235
		17,165	16,305	15.471	14.645

Signed for and on behalf of the Council who authorised these financial statements for issue on 26 September 2017

A. 10

Richard Bedford President 13 October 2017

Caroline Saunders

Councillor 13 October 2017

Royal Society of New Zealand Cash flow statement For the Year ended 30 June 2017

	Consolida	ated	Paren	t
Notes	2017	2016	2017	2016
	\$000's	\$000's	\$000's	\$000's
Cash flows from operating activities				
Receipts				
Receipts from non-exchange transactions	534	500	500	500
Receipts from exchange transactions	7,155	6,363	7,153	6,363
	7,689	6,863	7,653	6,863
Payments		24 12 NOV2 1	and the second	
Payments to suppliers	3,461	2,868	3,411	2,823
Payments to employees	3,696	3,406	3,696	3,406
Transfer to Endowment Trust				735
	7,158	6,275	7,108	6,964
Net cashflows from operating activities	531	588	545	(102)
Cash flows from investing activities				
Receipts				
Sale of property, plant & equipment	-	-	2	
Investment income	- 164 - 19 - 19 - 19 - 19 - 19 - 19 - 19 - 1	-	-	-
Interest received	180	197	141	159
Withdrawals of short term investments	1,951	-	1,682	
Repayments of investments			100 A 100 - 100	-
	2,131	197	1,823	159
Payments				
Purchase of property plant & equipment	259	274	259	274
Purchase of short term investments		413		385
Purchase of long term investments	611		76	-
	870	687	335	659
Net cashflows from investing activities	1,260	(489)	1,487	(499)
Net cashflows from financing activities		-	-	
Net increase/(decrease) in cash and cash equivalents	1.790	98	2.032	(601)
				(000)
Cash and cash equivalents at 1 July 2016	2,290	2,193	1,569	2,171
Cash and cash equivalents at 30 June 2017	4,080	2,290	3,601	1,569

The above cash flow statements should be read in conjunction with the accompanying notes on pages 10 - 18 $\,$



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Note 1. Reporting entity

The reporting entity is the Royal Society of New Zealand ("The Society"). The Society is domiciled at 11 Turnbull Street, Wellington New Zealand and is a charitable organisation incorporated under the Royal Society of New Zealand Act 1977 and the Charities Act 2005.

The financial statements comprising the Society and its controlled entity, The Royal Society of New Zealand Endowment Trust (the Trust), (together the "Group"), are presented for the year ended 30 June 2017.

These Group financial statements and accompanying notes summarise the financial results of activities carried out by the Society. All entities within the group are charitable organisations registered under the Charitable Trusts Act 1957 and the Charities Act 2005.

The Society ("the Parent") is an independent statutory body, exempt from income tax. Membership of the Society consists of fellows, ordinary members, companions, constituent organisations, regional constituent organisations, affiliate organisations, honorary members and honorary fellows. The Society Council has control of the Society.

The object of the Society and its controlled trust is the advancement and promotion of science, technology and the humanities in New Zealand. It does this by:

- fostering a culture within New Zealand that supports science, technology and the humanities (promoting public awareness, knowledge, and understanding of science, technology and the humanities; and advancing science education);
- encouraging, promoting and recognising excellence in science, technology and the humanities;
- providing an infrastructure and other support for the professional needs and development of scholars;
- establishing and administering for members a code of professional standards and ethics in science, technology and the humanities;
- providing expert advice on important public issues to the Government and the community.

These consolidated financial statements have been approved for issue by Council on 26 September 2017.

Note 2. Statement of compliance

The consolidated financial statements of the Group and financial statements of the Parent have been prepared in accordance with Generally Accepted Accounting Practice in New Zealand (NZ GAAP). They comply with Public Benefit Entity Standards ("PBE Standards") and other applicable financial reporting standards as appropriate that have been authorised for use by the External Reporting Board for Not-for-Profit entities. For the purposes of complying with NZ GAAP, the Group is a public benefit not-for-profit entity and is eligible to apply Tier 2 Not-for-Profit PBE IPSAS on the basis that it does not have public accountability and it is not defined as large. The Council has elected to report in accordance with Tier 2 Not-for-Profit PBE Accounting Standards and in doing so has taken advantage of all applicable Reduced Disclosure Regime ("RDR") disclosure concessions. This decision results in the Group not preparing a Statement of Service Performance for both reporting periods.

Note 3. Changes in accounting policy

There have been no changes in accounting policy

Note 4. Summary of accounting policies

The significant accounting policies used in the preparation of these financial statements as set out below have been applied consistently to both years presented in these financial statements.

4.1 Basis of measurement

These consolidated and parent financial statements have been prepared under the historical cost convention, as modified by the revaluation of certain assets as identified in specific accounting policies below.

4.2 Functional and presentational currency

The consolidated and parent financial statements are presented in New Zealand dollars (\$), which is the Group's functional currency. All financial information presented in New Zealand dollars has been rounded to the nearest thousand dollars.

4.3 Basis of consolidation

The consolidated financial statements incorporate the assets and liabilities of the controlled trust of the Royal Society of New Zealand as at 30 June 2017 and the results of the controlled trust for the year then ended. The Royal Society of New Zealand and its controlled trust together are referred to in these financial statements as the Group or the consolidated entity.

Controlled trusts are all those entities over which the Society has the power to govern the financial and operating policies, generally accompanied by holding more than one-half of the voting rights. The existence and effect of potential voting rights that are currently exercisable or convertible are considered when assessing whether the Society controls another entity.

Controlled trusts which form part of the Group are consolidated from the date on which control is transferred to the Society. They are deconsolidated from the date that control ceases.

Inter-trust transactions, balances and unrealised gains on transactions between Group entities are eliminated on consolidation. Unrealised losses are also eliminated unless they result from impairment. The accounting policies of the controlled trust are consistent with the policies adopted by the Group.

4.4 Investment in controlled trust

The consolidated financial statements incorporate the assets, liabilities and results of the following controlled trust. The controlled trust is incorporated in New Zealand and has a balance date of 30 June.

Name of entity	Principal Activities	Equity Holding		
-		2017	2016	
Royal Society of New Zealand	Support charitable purposes of			
Endowment Fund Trust	the Society	100%	100%	

4.5 Revenue

Revenue from non-exchange transactions

Donations

Donations are recognised as revenue upon receipt and include donations from members and the general public.

Legacies and bequests

Revenue from legacies and estates that satisfy the definition of an asset are recognised as revenue when it is probable that future economic benefits or service potential will flow to the group, and the fair value can be measured reliably.

Bequests and donations received on trust for particular purposes are recorded as revenue on a cash received basis in the statement of comprehensive revenue and expenses. These monies are not available for funding the operations of the Society.

Services in Kind

The Society is provided services by volunteers. The fair value of such services cannot be reliably measured. No value is given to these services in these financial statements.

Revenue from exchange transactions

Revenue comprises the fair value of consideration received for the sale of goods and services excluding Goods and Services Tax, rebates and discounts.

Revenue is recognised as follows:

Sales of Publications

Sales of publications are recognised when the Group has delivered a publication to the customer.

Sales of services

Sales of services are recognised in the accounting period in which services are rendered, by reference to completion of the specific transaction assessed on the basis of the actual service provided as a proportion of the total service to be provided.

Interest Income

Interest income is recognised on a time-proportion basis using the effective interest method.

Rental Income

Rental income is recognised on an accruals basis in accordance with the substance of the relevant agreements.

Contract Income

Contract income received from the Ministry of Business, Innovation and Employment is a primary source of income for the Society.

Government and non-government income is recognised as revenue when it becomes receivable unless there is an obligation to return the funds if conditions of the contract are not met. If there is such an obligation, the income is initially recorded as income received in advance and recognised as revenue when conditions of the contract are satisfied.



4.6 Goods and Services Tax (GST)

The statement of comprehensive revenue and expenses has been prepared so that all components are stated exclusive of GST. All items in the balance sheet are stated net of GST, with the exception of receivables and payables, which include GST invoiced.

4.7 Leases

The Group is the lessee

Leases in which a significant portion of the risks and rewards of ownership are retained by the lessor are classified as operating leases. Payments made under operating leases (net of any incentives received from the lessor) are charged to the statement of comprehensive revenue and expenses on a straight-line basis over the period of the lease.

The Group is the lessor.

Assets leased to third parties under operating leases are included in investment property in the balance sheet. Rental income (net of any incentives given to lessees) is recognised in surplus or deficit on a straight-line basis over the lease term.

4.8 Cash and cash equivalents

Cash and cash equivalents includes cash on hand, deposits held at call with financial institutions, other short term, highly liquid investments with original maturities of three months or less that are readily convertible to known amounts of cash and which are subject to an insignificant risk of changes in value, and bank overdrafts. Bank overdrafts, if any, are shown within borrowings in current liabilities on the Statement of Financial Position.

4.9 Trade receivables

Trade receivables are recognised initially at fair value and subsequently measured at amortised cost, less provision for doubtful debts.

Collectability of trade receivables is reviewed on an ongoing basis. Debts which are known to be uncollectible are written off. A provision for doubtful receivables is established when there is objective evidence that the Group will not be able to collect all amounts due according to the original terms of the receivables. The amount of the provision is the difference between the asset's carrying amount and the present value of estimated cash flows, discounted at the effective interest rate. The amount of the provision is recognised in the statement of revenue and expenses.

4.10 Inventories

Inventories are stated at the lower of cost and net realisable value. Cost is determined on a first in, first out basis. Net realisable value is the estimated selling price in the ordinary course of business less the estimated costs necessary to make the sale.

4.11 Investments and other financial assets

Financial assets within the scope of PBE IPSAS 29 *Financial Instruments: Recognition and Measurement* are classified as financial assets at fair value through surplus or deficit, loans and receivables, held-to-maturity investments or available-for-sale financial assets. The classifications of the financial assets are determined at initial recognition.

Regular purchases and sales of financial assets are recognised on trade date - the date on which the Group commits to purchase or sell the asset. All financial assets are initially recognised at fair value plus transaction costs for all financial assets not carried at fair value through surplus or deficit. Loans and receivables are subsequently carried at amortised cost using the effective interest method.

The category determines subsequent measurement and whether any resulting income and expense is recognised in surplus or deficit or in any other comprehensive revenue and expenses. The Group's financial assets are classified as financial assets at fair value through surplus or deficit, loans and receivables or as available for sale financial assets. The Group's financial assets include: cash and cash equivalents, short term deposits, receivables from non-exchange transactions, receivables from exchange transactions and investments.

All financial assets except for those at fair value through surplus or deficit are subject to review for impairment at least at each reporting date. Financial assets are impaired when there is any objective evidence that a financial asset or group of financial assets is impaired. Different criteria to determine impairment are applied for each category of financial assets.

Financial assets and liabilities are offset and the net amount reported in the statement of financial position when there is a legally enforceable right to offset the recognised amounts and there is an intention to settle on a net basis, or realise the asset and settle the liability simultaneously.

Financial assets are derecognised when the rights to receive cash flows from the asset have expired or have been transferred and the Group has transferred substantially all risks and rewards or ownership.

Investment in controlled Trust

The investment in the controlled trust in the Parent financial statements is stated at cost less impairment.



Loans and receivables

Loans and receivables are non derivative financial assets with fixed or determinable payments that are not quoted in an active market. They arise when the Group provides money, goods or services directly to a debtor with no intention of selling the receivable. They are included in current assets, except for those with maturities greater than 12 months after the balance sheet date which are classified as non-current assets. "Trade and other receivables", "investments" and "cash and cash equivalents" are classified as loans and receivables in the balance sheet.

Loans and receivables are subsequently carried at amortised cost using the effective interest method.

4.12 Financial liabilities

The Group's financial liabilities include trade and other creditors. The Group's financial liabilities are initially recognised at fair value (plus transaction cost for financial liabilities not at fair value through surplus or deficit) and are measured subsequently at amortised cost using the effective interest method except for financial liabilities at fair value through surplus or deficit.

Trade and other payables

These amounts represent liabilities for goods and services provided to the Group prior to the end of the financial year which are unpaid. These amounts are unsecured and usually paid within 30 days of recognition.

4.13 Employee benefits

Liabilities for wages and salaries, including non-monetary benefits and annual leave expected to be settled within 12 months of the reporting date are recognised in other payables in respect of employees services up to the reporting date and are measured at the amounts expected to be paid when the liabilities are settled.

4.14 Investment properties

Property held to earn rent or for capital appreciation or both is classified as investment property in accordance with PBE IPSAS 16 Investment Property. Investment property is measured initially at cost, including transaction costs, and thereafter is stated at fair value, which reflects market conditions at the balance sheet date. Gains or losses arising from changes in the fair values of investment property are included in the statement of comprehensive revenue and expenses in the year in which they arise.

4.15 Property, plant and equipment

All property, plant and equipment excluding land and buildings is stated at historical cost less depreciation and impairment. Historical cost includes expenditure that is directly attributable to the acquisition of the items.

Subsequent costs are included in the asset's carrying amount or recognised as a separate asset, as appropriate only when it is probable that future economic benefits associated with the item will flow to the Group and the cost of the item can be measured reliably. All other repairs and maintenance are charged to the statement of comprehensive revenue and expenses during the financial period in which they are incurred.

Land is not depreciated. Depreciation of property, plant and equipment is calculated on a straight-line basis so as to expense the cost of the assets over their useful lives. The useful lives are as follows:

- Buildings	30 and 40 years
- Furniture	10 years
- Office equipment	5 to 10 years
- Computer equipment	3 years

Capital work in progress is not depreciated until commissioned.

Gains and losses on disposals are determined by comparing proceeds with carrying amount. These are included in the statement of comprehensive revenue and expenses.

Land and buildings are initially recorded at cost, and subsequently are recorded at fair value, as determined by an independent valuer. Land and buildings are valued annually at balance date. To the extent that any revaluation gain reverses a loss previously charged to the statement of comprehensive income for a class of assets, the gain is credited to the statement of comprehensive revenue and expenses.

Otherwise, revaluation gains are credited to a revaluation reserve in other comprehensive revenue and expenses for that class of asset. To the extent that any revaluation loss reverses a gain previously credited to an asset revaluation reserve for the asset class, the loss is debited to the asset revaluation reserve. Otherwise, revaluation losses are recognised in the statement of comprehensive revenue and expenses.

On revaluation any accumulated depreciation is eliminated against the gross carrying amount of the asset.

4.16 Intangible assets

Intangible assets are initially measured at cost and subsequently measured at cost less accumulated amortisation and impairment. Cost includes expenditure directly attributable to the acquisition of the asset.

4.17 Special Purpose Reserve (SPR)

In order to provide funds that can be distributed to winners of Awards, a separate Special Purpose Reserve has been created with amounts transferred from the retained surplus to the SPR. The Group's policy is to invest the funds in term deposits until the amounts are utilised.

Note 5. Property, plant and equipment As at 30 June 2016

As at 30 June 2016			Consolidate	ed and Parent		
Furniture & equipment Computer equipment	At Cost or valuation \$000's 427 183	Acquisitions (Transfers) (Disposals) \$000's 44 10	Revaluation Mvmts \$000's	Depreciation 2016 year \$000's 41 33	Acc Depreciation \$000's 233 123	Net Book amount \$000's 238 70
Land & buildings	7,221	57	(5)	83	-	7,190
_	7,830	111 Acquisitions	(5)	158	356	7,498
As at 30 June 2017	At Cost or valuation \$000's	(Transfers) (Disposals) \$000's	Revaluation Mvmts \$000's	Depreciation 2017 year \$000's	Acc Depreciation \$000's	Net Book amount \$000's
Furniture & equipment	471 -	46	-	40	247	178
Computer equipment	194	84	9 4 1	35	159	119
Land & buildings	7,190	5	430	85	-	7,540
-	7,854	43	430	160	406	7,837

The Group's freehold land and buildings are stated at their 30 June 2017 valuation as determined by an independent registered valuer, Duncan Watts of CBRE Ltd. Duncan Watts B.Comm (VAPM MPINZ), is a Public Valuer, registered in terms of the Valuers Act 1948 and is the holder of a current Annual Practising Certificate.

The basis of valuation is Direct Comparison (for redevelopment land), Capitalisation and Discounted Cashflow approaches for Investment value.

Land is not depreciated. Depreciation of property, plant and equipment is calculated on a straight-line basis so as to expense the cost of the assets over their useful lives.

Note 6.	Note 6. Investment properties 2017 \$000's \$000's			2016 \$000's	
		Consolidated	Parent	Consolidated	Parent
Land - Fair v	value opening balance	3,460	3,460	3,029	3,029
Valuation m	novements	50	50	431	431
Land - Fair v	value closing balance	3,510	3,510	3,460	3,460

The Society's investment properties are stated at their 30 June 2017 valuation as determined by an independent registered valuer, Duncan Watts of CBRE Ltd. Duncan Watts B.Comm (VAPM), MPINZ is a Public Valuer, registered in terms of the Valuers Act 1948 and is the holder of a current Annual Practising Certificate. The assessment of fair value is supported by external market evidence.

Note 7. Trade and other receivables

	2017 \$000's		2016 \$000's	
	Consolidated	Parent	Consolidated	Parent
Gross accounts receivable	288	276	212	207
Provision for accounts receivable	0	0	(22)	(22)
	288	276	190	185

Note 8. Intangible assets

As at 30 June 2016	At Cost or valuation	Acquisitions (Transfers)	Consolidate Revaluation Mvmts	ed and Parent Amortisation 2016 year	Acc Amortisation	Net Book amount
	\$000's	\$000's	\$000's	\$000's	\$000's	\$000's
MIR Database system (acquired externally)	-	115	-	-	-	115
		115	-	-	-	115
As at 30 June 2017	At Cost or valuation	Acquisitions (Transfers)	Revaluation Mvmts	Amortisation 2017 year	Acc Amortisation	Net Book amount
	\$000's	\$000's	\$000's	\$000's	\$000's	\$000's
(acquired externally)	115	170	-	25	25	260
а.	114	170	-	25	25	260

The Master Identity Record (MIR) database system is being developed to provide the Society with an integrated contacts database. The overall project will be staged over multiple years. Stage 1 was completed to the point of use at 31 October 2016. Based on its experience with the previous system, the Society has adopted a ten year useful economic life of the asset.

Note 9. Cash and cash equivalents

	2017		2016	
	\$000's		\$000's	
	Consolidated	Parent	Consolidated	Parent
Current accounts	22	7	29	15
Treasury call accounts	773	584	1,361	654
Short term deposits (mature within 3 months)	3,285	3,010	900	900
	4,080	3,601	2,290	1,569

In both the 2016 and 2017 years term deposits are held with the Bank of New Zealand and RaboDirect. The Society has a \$525,000 facility by way of BNZ Business Visa. (2016: \$525,000).

Note 10. Investments and other financial assets.

	2017		2016	
	\$000's		\$000's	
	Consolidated	Parent	Consolidated	Parent
Term deposits - current	2,135	1,463	4,086	3,145
Corporate bonds	635	100	24	24
	2,770	1,563	4,110	3,169

In both the 2016 and 2017 years term deposits are held with the Bank of New Zealand and RaboDirect.

Corporate Bonds comprise:

Trustpower Senior Bonds - Interest rate 4.01%, maturity December 2022

Contact Energy - Interest rate 4.63%, maturity 15 November 2022

Vector Limited - Interest rate 5.7%, maturity June 2022

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Note 11. Designated purpose reserves

Consolidated 2016 Financial year	2015 \$000's	Contributions \$000's	Disbursements \$000's	Balance 2016 \$000's
Designated Fund	235	735	-	970
Bates Memorial Scholarship	70	2	(6)	66
Hatherton Fund	39	1	(1)	39
Charles Fleming Fund	457	12	(18)	451
Manawatu Fund	13	-	-	13
Benson, Hutton & Mappin Funds	73	2	(11)	64
Skinner Fund	167	4	(8)	163
T K Sidey Summertime Fund	29	1	-	30
Hamilton Memorial Prize	32	1	(2)	31
Leonard Cockayne Memorial Lecture	76	2	(1)	77
	1,191	760	(47)	1,904

Parent 2016 Financial year	2015 \$000's	Contributions \$000's	Disbursements \$000's	Balance 2016 \$000's
Designated Fund	235	-	-	235
	235	-	-	235

2010	Contributions	Disbursements	Balance 2017
\$000's	\$000's	\$000's	\$000's
970	21	-	991
66	2	(12)	56
39	1	(2)	38
451	12	(17)	446
13		-	13
64	2	(11)	55
163	4	(3)	164
30	1	-	31
31	1	(3)	29
77	2	0	79
0	30	0	30
1,904	76	(48)	1,932
	\$000's 970 66 39 451 13 64 163 30 31 77 0 1,904	\$000's \$000's 970 21 66 2 39 1 451 12 13 - 64 2 163 4 30 1 31 1 77 2 0 30 1,904 76	\$000's \$000's \$000's 970 21 - 66 2 (12) 39 1 (2) 451 12 (17) 13 - - 64 2 (11) 163 4 (3) 30 1 - 31 1 (3) 77 2 0 0 30 0 1,904 76 (48)

Parent 2017 Financial year	Balance 2016 \$000's	Contributions \$000's	Disbursements \$000's	Balance 2017 \$000's
Designated Fund	235	-	-	235
	235	-		235

Note 12	Trade and other payables	2017 \$000's		2016 \$000's	
		Consolidated	Parent	Consolidated	Parent
Current liabi	lities				
Creditors		374	371	384	378
Employee er	ntitlements	272	272	264	264
Other accrua	als	291	291	245	245
GST payable	/(receivable)	12	12	3	3
		949	945	896	889
Note 13	Income in advance	2017		2016	
		\$000's		\$000's	
		Consolidated	Parent	Consolidated	Parent
Journal inco	me	79	79	102	102
Membership	subscriptions	184	184	110	110
Other		439	439	281	281
		702	702	493	493

Membership subscriptions are usually paid 12 months in advance however as part of a transition period, fees invoiced Jan - March 2017 are for the 18 month period to 30 June 2018. The balance relates to member's future entitlement to benefits. Other income in advance represents all other contract revenue paid to the Group that is attributable to work still to be performed after 30 June.

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Note 14 Contestable funds	2017 \$000's		2016 \$000's	
	Consolidated	Parent	Consolidated	Parent
Opening contestable funds	21,111	21,111	19,033	19,033
Receipts	84,276	84,276	78,728	78,728
Interest earned & accrued	242	242	324	324
Payments	(79,869)	(79,869)	(76,974)	(76,974)
Closing contestable funds	25,760	25,760	21,111	21,111

The group managed seven contestable funds on behalf of government in the year ended 30 June 2017. (2016: nine). The fund monies shown in this note are not included in the group's Statements of comprehensive revenue and expenses or Statements of Fincial Position, as ownership of the monies is not vested in the Group.

This note serves to highlight the significant funding administered by the Group. The Group received \$5.8m in administration fees from MBIE in the 2017 financial year. (2016 \$5.2m).

Note 15 Deposits held on behalf of third parties.	2017 \$000's		2016 \$000's		
		Consolidated	Parent	Consolidated	Parent
Term depos	sits on behalf - Rutherford Foundation Trust	2,900	2,900	2,098	2,098
Term depos	sits on behalf - James Hay	53	53	52	52
Term depo	sits on behalf - Ecohydraulics	26	26	26	26
		2,979	2,979	2,176	2,176

Ownership of these funds does not rest with the Group. These deposits are not included within the assets of the Group.

Note 16 Commitments

2017		2016	
\$000's		\$000's	
Consolidated	Parent	Consolidated	Parent
30	30	55	55
30	30	55	55
	2017 \$000's Consolidated 	2017 \$000's Consolidated Parent 30 30 30 30	2017 2016 \$000's \$000's Consolidated Parent Consolidated 30 30 55 30 30 55

Note 17 Contingent Liabilities

In 2013 the Society entered into a contract with the European Union as lead contractor for a series of activities. This project was completed by 30 June 2016 with final reports being lodged by each of the 6 parties including financial reconciliations. Since the reports have been filed, the European Union has advised they will only pay a proportion of the final costs leaving a shortfall. Discussion with the European Union indicates a total liability of \$163k with the Society's portion being \$96k.

Note 18 Events occurring after balance date

The Council of the Society has resolved to transfer \$2.5m to the Endowment Trust. There are no other significant events subsequent to balance date.

Note 19 Income	201 \$000	.7 D's	2016 \$000's	5
	Consolidated	Parent	Consolidated	Parent
Non-exchange transactions				
Income from Government Contracts	500	500	500	500
Donations	34		-	-
Exchange transactions				
Income from Government Contracts	5,577	5,577	4,770	4,770
Other products and services	438	438	391	391
	6,549	6,515	5,661	5,661

Contractual payments received from the Ministry of Business, Innovation and Employment are the primary source of income earned by the Society and are restricted for the purposes of the Society meeting its objectives as specified in the Royal Society of New Zealand Act 1997.

Government and non-government receipts are recognised as revenue when they become receivable unless there is an obligation to return the funds if conditions of the contract are not met. If there is such an obligation, the receipts are initially recorded as income in advance and recognised as revenue when conditions of the contract are satisfied.

Note 20 Related parties

No significant related party transactions occurred during the financial year. In the 2016 year the Society made a \$735,000 donation payment to the Royal Society of New Zealand Endowment Fund Trust. The transaction was eliminated on consolidation.

Note 21 Key management personnel

The key management personnel, as defined by PBE IPSAS 20 are the members of the governing body that is comprised of the Council, the Chief Executive, the Chief Operating Officer and the Directors. No remuneration is paid to members of Council. The aggregate remuneration of key management personnel and the number of individuals, determined on a full-time equivalent basis, receiving remuneration is as follows:

	2017	7	2016	
	\$000's		\$000's	
	Consolidated	Parent	Consolidated	Parent
Total remuneration	1,261	1,261	1,190	1,190
Number of persons	7	7	7	7

Note 22 Financial Instrument Classification

Financial instruments were classified for the purpose of measurement into the following categories.

Consolidated

		Other liabilities	
	Loans and	at amortised	
As at 30 June 2016	receivables	cost	Total
	\$000's	\$000's	\$000's
Cash and cash equivalents	2,290	-	2,290
Trade and other receivables	190		190
Investments	4,110	-	4,110
Trade and other payables		(896)	(896)
	6,591	(896)	5,694
As at 30 June 2017			
	\$000's	\$000's	\$000's
Cash and cash equivalents	4,080	-	4,080
Trade and other receivables	288		288
Investments	2,770	-	2,770
Trade and other payables	1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 -	(949)	(949)
	7,138	(949)	6,189

Parent

		Other liabilities	
	Loans and	at amortised	
As at 30 June 2016	receivables	cost	Total
	\$000's	\$000's	\$000's
Cash and cash equivalents	1,569	-	1,569
Trade and other receivables	185	8	185
Investments	3,169	-	3,169
Trade and other payables		(889)	(889)
	4,923	(889)	4,034
As at 30 June 2017			
	\$000's	\$000's	\$000's
Cash and cash equivalents	3,601	-	3,601
Trade and other receivables	276	-	276
Investments	1,563		1,563
Trade and other payables		(945)	(945)
	5,440	(945)	4,495

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Reprint as at 3 March 2012



Royal Society of New Zealand Act

Private Act 1997 No 2 Date of assent 14 July 1997 Commencement see section 1(2)

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Note Changes authorised by section 17C of the Acts and Regulations Publication Act 1989 have been made in this reprint.

A general outline of these changes is set out in the notes at the end of this reprint, together with other explanatory material about this reprint.

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Repri 3 Ma	inted as at rch 2012 Royai	Society of New Zenland Act 1997	Preamble
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Provisions relating to management of Society

An Act ----

- to continue the Royal Society of New Zealand by way of (a) private Act: and
- to modernise and reorganise the structure of the Royal (b) Society of New Zealand; and
- to repeal the Royal Society of New Zealand Act 1965 (c)

Preamble

Whereas:

- with the gracious approval of His late Majesty King Α George the Fifth there is a body called the Royal Society of New Zealand:
- the Royal Society of New Zealand, constituted under В the Royal Society of New Zealand Act 1965, is the same body as the body of that name existing immediately before the commencement of that Act under the Royal Society of New Zealand Act 1933, which body was originally established under the name of the New Zealand Institute by the New Zealand Institute Act 1867:
- the members of the Royal Society of New Zealand С desire----
 - (a) that the Royal Society of New Zealand continue under the existing name of the "Royal Society of New Zealand": and
 - that the structure of the Royal Society of New (b) Zealand be modernised and reorganised; and
 - that the Royal Society of New Zealand Act 1965 (c) be repealed:
- D legislation is necessary to repeal the Royal Society of New Zealand Act 1965 and the object of this Act

Reprinted as at 3 March 2012 s I Royal Society of New Zealand Act 1997

> cannot be efficiently or conveniently attained without legislation.

Short Title and commencement 1

- (1) This Act may be cited as the Royal Society of New Zealand Act 1997.
- (2)This Act comes into force on the 28th day after the date on which it receives the Royal assent,

Interpretation

2 Interpretation

In this Act, unless the context otherwise requires,-

Academy bylaws means the bylaws of the Academy Executive Committee made under section 39 and for the time being in force

Academy Executive Committee means the Academy Executive Committee constituted under section 37

Affiliate Organisation means an organisation that holds affiliate status under section 15

code of professional standards and ethics means the code of professional standards and ethics issued under section 34 Companion means a Companion of the Society elected in ac-

cordance with section 12 Constituent Organisation means an organisation that is a

Constituent Organisation pursuant to a declaration made under section 13

Council means the Council of the Society constituted under section 20

Councillor means a person holding office as a member of the Council in accordance with section 20(2)(b)

Electoral College means an Electoral College established in accordance with section 21

Fellow means a Fellow of the Society elected in accordance with section 10

Honorary Fellow means a person admitted as an Honorary Fellow in accordance with section 17

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Honorary Member means a person granted honorary membership of the Society in accordance with section 16

humanities includes languages, and in particular, te reo, history, religion, philosophy, law, classics, linguistics, literature, cultural studies, Māori studies, media studies, art history, film, and drama

member means a member of the Society as defined in section 9

Ordinary Member means a person admitted as an Ordinary Member of the Society in accordance with section 11

Regional Constituent Organisation means an organisation that is a Regional Constituent Organisation pursuant to a declaration made under section 14

rules means the rules of the Society made under section 32 and for the time being in force

science and technology includes the applied, biological, earth, engineering, information, mathematical, medical, physical, social, and technological sciences

Society means the Royal Society of New Zealand continued by section 3.

Section 2 Academy bylaws: replaced, on 3 March 2012, by section 5(1) of the Royal Society of New Zealand Amendment Act 2012 (2012 No 1).

Section 2 Academy Council: repealed, on 3 March 2012, by section 5(1) of the Royal Society of New Zealand Amendment Act 2012 (2012 No 1).

Section 2 Academy Executive Committee: inserted, on 3 March 2012, by section 5(1) of the Royal Society of New Zealand Amendment Act 2012 (2012 No 1).

Section 2 humanities: inserted, on 3 March 2012, by section 5(2) of the Royal Society of New Zealand Amendment Act 2012 (2012 No 1).

The Royal Society of New Zealand

- 3 Constitution of Society
- There continues to be a Society called the Royal Society of New Zealand.
- (2) The Society continues to be a body corporate with perpetual succession and a common seal.
- (3) The Society is declared to be the same body as the body of that name existing immediately before the commencement of this Act under the Royal Society of New Zealand Act 1965.

4 Honorary Patron

The Governor-General is, during his or her pleasure, the Honorary Patron of the Society. Compare: 1965 No 38 s 4

5 Object

The object of the Society is the advancement and promotion in New Zealand of science, technology, and the humanities. Section 5: replaced, on 3 March 2012, by section 6 of the Royal Society of New Zealand Amendment Act 2012 (2012 No 1).

6 Functions

6

For the purpose of the advancement and promotion in New Zealand of science, technology, and the humanities, the functions of the Society are---

- (a) to foster in the New Zealand community a culture that supports science, technology, and the humanities, including (without limitation)—
 - the promotion of public awareness, knowledge, and understanding of science, technology, and the humanities; and
 - the advancement of science and technology education;
- (b) to encourage, promote, and recognise excellence in science, technology, and the humanities:
- (c) to provide infrastructure and other support for the professional needs and development of scientists, technologists, and humanities scholars:
- (d) to establish and administer for members a code of professional standards and ethics in science, technology, and the humanities;
- to provide expert advice on important public issues to the Government and the community:
- (f) to do all other lawful things that the Council considers conducive to the advancement and promotion in New Zealand of science, technology, and the humanities.

Section 6: replaced, on 3 March 2012, by section 7 of the Royal Society of New Zealand Amendment Act 2012 (2012 No 1).

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Reprinted as at 3 March 2012 Royal Society of New Zealand Act 1997

7 Powers of Society

For the purposes of pursuing its object and carrying out its functions, the Society has full rights, powers, and privileges.

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- 8 No dividend or profit to members (1)
 - The income and property of the Society must be applied solely towards the object of the Society, and (except as otherwise provided in this Act) no portion of the income and property of the Society may be paid directly or indirectly by way of dividend, bonus, or otherwise to members.
- (2)This section does not prevent-
 - (a) the payment of remuneration to employees of the Society or members in return for services rendered or goods supplied; or
 - the repayment of money borrowed or the payment of (b) interest on money borrowed; or
 - the payment of expenses incurred in the performance of (c) office: or
 - (d) the grant of awards or prizes for
 - achievement in research in science, technology, (i) or the humanities; or
 - the advancement or promotion of science, tech-(ii) nology, and the humanities in New Zealand.

Compare: 1965 No 38 s 10

Section 8(2)(d)(i): amended, on 3 March 2012, by section 8(1) of the Royal Society of New Zealand Amendment Act 2012 (2012 No 1). Section 8(2)(d)(ii): amended, on 3 March 2012, by section 8(2) of the Royal Society of New Zealand Amendment Act 2012 (2012 No 1).

Membership of Society

- 0 Membership of Society
 - The membership of the Society consists of the following:
 - (a) Fellows:
 - (b) Ordinary Members:
 - (c) Companions:
 - (d) Constituent Organisations:
 - Regional Constituent Organisations: (e)
 - Affiliate Organisations that are members in accordance (f) with section 15(2):

Royal Society of New Zealand Act 1997

- Reprinted as at 3 March 2012
- (g) Honorary Members: (h) Honorary Fellows. Compare: 1965 No 38 s 5
- 10 Fellows

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- (1)The Academy Executive Committee may from time to time, in accordance with the Academy bylaws, elect as a Fellow any person who in the opinion of the Academy Executive Committee has achieved distinction in research or the advancement of science, technology, or the humanities.
- The number of Fellows is limited to such number as is agreed (2)from time to time between the Academy Executive Committee and the Council.
- A Fellow is entitled to use, in connection with his or her name, (3)either--
 - the letters "FRSNZ", which stand for Fellow of the (a) Royal Society of New Zealand; or
 - such other letters or title as is agreed from time to time (b) between the Academy Executive Committee and the Council.
 - Compare: 1965 No 38 s 6

Section 10(1): amended, on 3 March 2012, by section 9(1) of the Royal Society of New Zealand Amendment Act 2012 (2012 No 1).

Section 10(1): amended, on 3 March 2012, by section 9(2) of the Royal Society of New Zenland Amendment Act 2012 (2012 No 1).

Section 10(2): amended, on 3 March 2012, by section 9(1) of the Royal Society of New Zealand Amendment Act 2012 (2012 No 1).

Section 10(3)(b): amended, on 3 March 2012, by section 9(1) of the Royal Society of New Zealand Amendment Act 2012 (2012 No 1).

11 **Ordinary Members**

- The Council may from time to time, in accordance with the (1)rules, admit as an Ordinary Member any person who is able and willing to subscribe to the object of the Society.
- (2) Subject to subsection (3), an Ordinary Member is entitled to use, in connection with his or her name, either-
 - (a) the letters "MRSNZ", which stand for Member of the Royal Society of New Zealand; or
 - such other letters or title as is decided from time to time (b) by the Council.

- (3) An Ordinary Member is entitled to use the letters "MRSNZ" if—
 - (a) the professional qualifications and the experience of that member are recognised by the Council; and
 - (b) where the Council requires the payment of any fee as a prerequisite to the use or continued use of those letters, the member has paid any such fee.
- 12 Companions
- The Council may from time to time elect, as a Companion, any person who, in the opinion of the Council has—
 - (a) shown outstanding leadership in science, technology, or the humanities; or
 - (b) made eminent or sustained contributions to the promotion and advancement in New Zealand of science, technology, or the humanities.
- (2) A Companion is entitled to use, in connection with his or her name, either—
 - (a) the letters "CRSNZ", which stand for Companion of the Royal Society of New Zealand; or
 - (b) such other letters or title as is decided from time to time by the Council.

Section 12(1): replaced, on 3 March 2012, by section 10 of the Royal Society of New Zealand Amendment Act 2012 (2012 No 1).

13 Constituent Organisations

The Council may from time to time, in accordance with the rules, declare any organisation to be a Constituent Organisation if—

- (a) that organisation declares itself to be able and willing to subscribe to the object of the Society; and
- (b) the object or objects of the organisation are consistent with the object of the Society.

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14 Regional Constituent Organisations

 The Council may from time to time, in accordance with the rules, declare any organisation to be a Regional Constituent Organisation if—

- (a) that organisation declares itself to be able and willing to subscribe to the object of the Society; and
- (b) that organisation agrees to represent the Society on a regional basis; and
- (c) the object or objects of that organisation are consistent with the object of the Society.
- (2) If any committee is appointed under section 28(3) and is deemed to be a Regional Constituent Organisation, that organisation must comply with the requirements of subsection (1).
- 15 Affiliate Organisations

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- The Council may from time to time, in its absolute discretion, grant the status of Affiliate Organisation to any organisation that is able and willing to subscribe to the object of the Society.
- (2) The Council may from time to time, in its absolute discretion, admit any Affiliate Organisation as a member of the Society.
- (3) The Council may from time to time, in its absolute discretion,---
 - (a) revoke any organisation's status as an Affiliate Organisation;
 - (b) revoke any Affiliate Organisation's membership of the Society.

16 Honorary Members

- The Council may, from time to time, grant Honorary Membership of the Society to any Ordinary Member who, in the opinion of the Council, has rendered eminent service to science, technology, or the humanities, or to the Society.
- (2) Honorary Members are not required to pay any levies to the Society.

Section 16(1): amended, on 3 March 2012, by section 11 of the Royal Society of New Zealand Amendment Act 2012 (2012 No 1).

- 17 Honorary Fellows
- The Academy Executive Committee may, from time to time, in accordance with the Academy bylaws; admit as an Honorary Fellow any person who—

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- (a) is not normally resident in New Zealand; and
- (b) has, in the opinion of the Academy Executive Committee, rendered eminent service to science, technology, or the humanities.
- (2) A person who is admitted as an Honorary Fellow-
 - (a) is not required to pay any levies to the Society; and
 - (b) is not entitled to vote in respect of any matters before the Academy Executive Committee or the Society or to hold office in the Academy Executive Committee or the Society.

Section 17(1): amended, on 3 March 2012, by section 12(1) of the Royal Society of New Zealand Amendment Act 2012 (2012 No 1).

Section 17(1)(b): amended, on 3 March 2012, by section 12(1) of the Royal Society of New Zealand Amendment Act 2012 (2012 No 1).

Section 17(1)(b): amended, on 3 March 2012, by section 12(2) of the Royal Society of New Zealand Amendment Act 2012 (2012 No 1). Section 17(2)(b): amended, on 3 March 2012, by section 12(1) of the Royal

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- 18 Revocation of membership or fellowship
- (1) The Council may, at any time, in accordance with the rules, revoke a person's or an organisation's membership of the Society if—
 - (a) that person or organisation has not adhered to the code of professional standards and ethics; or
 - (b) that person or organisation has acted in a manner that is inconsistent with the Society's object or functions as set out in sections 5 and 6.
- (2) The Council may at any time, in accordance with the Academy bylaws and on the recommendation of the Academy Executive Committee, revoke the fellowship or honorary fellowship of a person.

Section 18(2): amended, on 3 March 2012, by section 13 of the Royal Society of New Zealand Amendment Act 2012 (2012 No 1).

- 19 Register of members
- (1) The Council must maintain, at the office of the Royal Society of New Zealand, a register of the names of all members and of those members who are entitled to use, in connection with their name, the letters "MRSNZ", "CRSNZ", or "FRSNZ".

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- (2) The Council must from time to time cause the register to be published in such form as it thinks fit.
- (3) Without limiting the generality of subsection (2),—
 - (a) any register published pursuant to that subsection may be in a printed or an electronic form; and
 - (b) any information included in such a register may be abbreviated.
- (4) All members are entitled, free of charge, to inspect the register during the Society's normal office hours.
- (5) The Council may charge any member who wishes to purchase a copy of the register (or any part of the register) such fee (if any) as is set by the Council in respect of the matter.

Council of Society

- 20 Council of Society
- There is a Council of the Society, called the Council of the Royal Society of New Zealand.
- (2) The Council consists of-
 - (a) the President; and
 - (b) the Councillors elected or appointed or co-opted in accordance with this Act and the rules.
- 21 Electoral Colleges
- The Council may from time to time establish 1 or more Electoral Colleges to enable the election of Councillors.
- (2) The Council may alter the number, names, and composition of Electoral Colleges.
- 22 Elected Councillors

- (1) Each Electoral College is entitled to elect 1 Councillor.
- (2) An Electoral College may elect more than 1 Councillor if the Council so determines.
- (3) Every election of a Councillor or Councillors by an Electoral College must be conducted by the Council in accordance with the rules.
- (4) No person may hold office as an elected Councillor for more than 6 consecutive years.

(5) [Repealed]

Section 22(4): replaced, on 3 March 2012, by section 14 of the Royal Society of New Zealand Amendment Act 2012 (2012 No 1). Section 22(5): repealed, on 3 March 2012, by section 14 of the Royal Society of New Zealand Amendment Act 2012 (2012 No 1).

- 23 Appointed Councillor
- (1) The Regional Constituent Organisations are, between them, entitled to appoint 1 Councillor.
- (2) In determining who should be appointed under subsection (1), each Regional Constituent Organisation has 1 vote and the matter is determined by a majority of votes east by postal ballot or, at the option of the Council, by ballot conducted by electronic means.
- (3) If there is an equality of votes between candidates under subsection (2) and the addition of 1 vote would entitle any of those candidates to be elected, the Chief Executive Officer of the Society appointed under clause 1 of the Schedule must determine by lot which candidate is to be appointed.
- (4) The appointed representative of the Regional Constituent Organisations is appointed for a term of 3 years. Section 23: replaced, on 3 March 2012, by section 15 of the Royal Society of New Zealand Amendment Act 2012 (2012 No 1).

24 Co-opted Councillors

- Subject to subsection (2), the Council may, from time to time, co-opt up to 3 members to be Councillors to the Council.
- (2) The Council may co-opt members under subsection (1) if, in the opinion of the Council, it is necessary to do so having regard to the desirability of—
 - (a) giving effect to the principles of the Treaty of Waitangi:
 - (b) giving effect to the principle of equal opportunity for Maori, ethnic or minority groups, women, and people with disabilities;
 - (c) providing representation for different geographic areas of New Zealand;
 - (d) providing representation for different areas of science, technology, and the humanities not otherwise represented on the Council.

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(3) A person who holds office as a co-opted Councillor holds office until the elected Councillors next vacate office following elections to the Council.

Section 24(2)(d): amended, on 3 March 2012, by section 16 of the Royal Society of New Zealand Amendment Act 2012 (2012 No 1).

- 25 President
- As soon as practicable after each election of Councillors, the Council must choose a person to be the President of the Society.
- (2) The Council must choose the President by-
 - (a) electing one of the Councillors; or
 - (b) appointing a suitable person (whether a member or not),
- (3) No person may hold office as the President for more than 3 consecutive years.

26 Powers of Council

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- The Council has the control and management of the Society, and of all property for the time being vested in the Society, and generally must act for and on behalf of the Society.
- (2) Without limiting the generality of subsection (1), the Council may,—
 - (a) subject to the provisions of this Act and to the terms of any trust or endowment, dispose in such manner as the Council thinks fit of any grants, devises, bequests, or any gifts of books, specimens, equipment, or real property, made to the Society:
 - (b) for the purpose of providing funds to advance the object of the Society, levy members in accordance with the rules:
 - (c) spend any funds of the Society, not appropriated or held in trust for any special purpose, to advance the object of the Society:
 - (d) in the name and on behalf of the Society,—
 (i) enter into contracts for the provision of services relevant to the object of the Society:

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- (ii) borrow, raise, or secure the payment or repayment of money in such manner as the Council thinks fit. Compare: 1965 No 38 s 14
- Council to regulate own procedure 27 Subject to the rules, the Council must regulate its own procedure.
- 28 Council may appoint committees
- The Council may from time to time appoint 1 or more commit-(1)tees comprising such persons as the Council thinks fit, whether or not they are members.
- The Council may at any time discharge, alter, or reconstitute (2)any committee.
- The Council may from time to time appoint 1 or more com-(3) mittees to represent the Society within a regional area and may deem any such committee to be a Regional Constituent Organisation for the purpose of appointing Councillors under section 23 or for any other purpose under this Act relating to Regional Constituent Organisations. Compare: 1965 No 38 s 14(6)

29 Delegations to committees

- The Council may, from time to time, refer to any committee (1)of the Council any matter for consideration or inquiry or management or regulation.
- (2) The Council may, from time to time, by written notice, delegate to any such committee any function, power, or duty of the Council, except this power of delegation.
- (3) Any committee may exercise or perform any function, power, or duty of the Council delegated to it under this section in the same manner as if the committee were the Council.
- Every delegation under this section is revocable by the Coun-(4) cil at will, and no such delegation prevents the exercise or performance of the function, power, or duty by the Council.

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- Every committee purporting to act under any delegation under (5) this section is, until the contrary is proved, presumed to be acting in accordance with the terms of the delegation.

30 Vacation of office of Councillors

- (1)Any Councillor may at any time resign his or her office by giving notice to that effect to the Society.
- A Councillor is to be treated as having vacated his or her office (2)if the Councillor dies.
- (3) Any Councillor may be removed from office by written notice, on the grounds of a mental or physical condition affecting the performance of duty, or for neglect of duty or misconduct, proved to the satisfaction of the Council.
- If a person ceases to be a Councillor in accordance with any (4) of subsections (1) to (3) then,---
 - subject to any rules, the vacancy so created may be filled (a) by appointment or election to the vacant office in the sole discretion of the Council; and
 - the person so appointed or elected to fill the vacancy (b) holds office for the residue of the term for which the person's predecessor was appointed or elected.
- The Council, in its sole discretion, may defer the election or (5) appointment of a Councillor to fill a vacancy if an election of a Councillor or Councillors is to occur within 6 months after the vacancy occurs.
- The powers of the Council are not affected by any vacancy in (6) its membership.

31 Vacation of office of President

- The President may at any time resign his or her office by giving (1)notice to that effect to the Society.
- (2) The President is to be treated as having vacated his or her office if the President dies.
- The President may be removed from office by written notice, (3) on the grounds of a mental or physical condition affecting the performance of duty, or for neglect of duty or misconduct, proved to the satisfaction of the Council.

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- (4) If a person ceases to be the President in accordance with any of subsections (1) to (3) then,—
 - (a) subject to any rules, the vacancy so created must be filled by the Council in accordance with section 25; and

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- (b) the person chosen to fill the vacancy holds office as President for the residue of the term for which the person's predecessor held office as President.
- (5) The powers of the Council are not affected by any vacancy in the presidency.

Rules of Society

32 Rules of Society

- Subject to this Act, the Council may from time to time, by resolution passed in accordance with this section, make rules for—
 - (a) the regulation, management, and advantage of the Society and its property, and for furthering the object of the Society:
 - (b) governing the admission and expulsion of members of the Society:
 - (c) governing the procedure for the nomination, election, and appointment of Councillors:
 - (d) such other purposes as may be necessary or expedient for duly carrying out the work of the Council or of any committee of the Council.
- (2) Any such rules may from time to time be amended or revoked by resolution passed in accordance with this section.
- (3) Notice of any motion which proposes the making, amending, or revoking of any rules must be forwarded to every Councillor and the President at least 30 clear days before the meeting at which the motion is to be considered. Compare: 1965 No 38 s 17(1)-(3)

33 Further provisions relating to rules

 All members are entitled to request a copy of the rules from the Society. (2) The rules of the Society must also be available for inspection by any member at the offices of the Royal Society of New Zealand during normal office hours. Compare: 1965 No 38 s 17(4)-(6)

Professional standards and ethics

34 Code of professional standards and ethics

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- The Council must issue for members a code of professional standards and ethics in science, technology, and the humanities.
- (2) The Council may from time to time issue amendments to a code of professional standards and ethics issued under subsection (1).
- (3) The Council must make the code of professional standards and ethics, and any amendments to it, publicly available, Section 34(1): amended, on 3 March 2012, by section 17 of the Royal Society of New Zealand Amendment Act 2012 (2012 No 1).

Further provisions relating to Society and Council

- 35 Protection of officers and members
- (1) Neither the President nor the Councillors are personally liable for any act or default done or made by the Society, the Council, or any officer or employee of the Society, in good faith in the course of the operations of the Society.
- (2) Except when otherwise expressly provided in this Act, membership of the Society does not of itself impose on the members any liability in respect of any contract, debt, or other obligation made or incurred by the Society.
- 36 Further provisions relating to management of Society The provisions set out in the Schedule apply to the Society and the Council.

Academy Executive Committee

Heading: amended, on 3 March 2012, by section 18(1) of the Royal Society of New Zealand Amendment Act 2012 (2012 No 1).

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- 37 Academy Executive Committee
- (1) There is a council of the Society called the Academy Executive Committee.
- (2) The object of the Academy Executive Committee is to contribute to the achievement of the object of the Society.
- (3) Without limiting the generality of subsection (2), the Academy Executive Committee shall—
 - (a) recognise and encourage excellence and outstanding achievements in each of the areas of science, technology, and the humanities; and
 - (b) contribute to the intellectual leadership role of the Society.
- (4) Subject to this Act, to the rules, and any Academy bylaws, the Academy Executive Committee may regulate its procedure in such manner as it thinks fit.

Section 37 heading: amended, on 3 March 2012, by section 18(2) of the Royal Society of New Zealand Amendment Act 2012 (2012 No 1).

Section 37(1): amended, on 3 March 2012, by section 18(3) of the Royal Society of New Zealand Amendment Act 2012 (2012 No 1).

Section 37(2): amended, on 3 March 2012, by section 18(3) of the Royal Society of New Zealand Amendment Act 2012 (2012 No 1).

Section 37(3): amended, on 3 March 2012, by section 18(3) of the Royal Society of New Zealand Amendment Act 2012 (2012 No 1).

Section 37(3)(a): amended, on 3 March 2012, by section 18(4) of the Royal Society of New Zealand Amendment Act 2012 (2012 No 1).

Section 37(4): amended, on 3 March 2012, by section 18(3) of the Royal Society of New Zealand Amendment Act 2012 (2012 No 1).

38 Membership of Academy Executive Committee

The Academy Executive Committee consists of those Fellows who are, for the time being, elected to the Academy Executive Committee in accordance with the Academy bylaws, or if there are no such Academy bylaws in such manner as the Council thinks fit.

Section 38 heading: amended, on 3 March 2012, by section 19(1) of the Royal Society of New Zealand Amendment Act 2012 (2012 No 1).

Section 38: amended, on 3 March 2012, by section 19(2) of the Royal Society of New Zealand Amendment Act 2012 (2012 No 1).

- s 39 Royal Society of New Zealand Act 1997 Reprinted as at 3 March 2012
- 39 Bylaws of Academy Executive Committee
- The Academy Executive Committee may from time to time, in accordance with this section, make bylaws for—
 - (a) the regulation, management, and advantage of the Academy Executive Committee, and for furthering the object of the Academy Executive Committee;
 - (b) governing the procedure for the nomination, election, admission, and expulsion of Fellows;
 - (c) governing the procedure for the election of the Academy Executive Committee and Academy Executive Committee officers:
 - (d) such other purposes as may be necessary or expedient for duly carrying out the work of the Academy Executive Committee—

and may, from time to time, amend or revoke such bylaws.

- (2) Without limiting the generality of subsection (1), the Academy bylaws may—
 - (a) impose, or provide for the imposition of, a levy on Fellows, for the purpose of providing funds to advance the objects of the Academy Executive Committee, which levy may be in addition to any levy imposed under section 26(2)(b):
 - (b) provide for the appointment of Honorary Fellows:
 - (c) provide for the grant of awards, medals, and prizes to persons who, in the opinion of the Academy Executive Committee, are worthy of them by reason of any research, investigation, or other work in the area of science, technology, or the humanities.
- (3) An Academy bylaw does not come into force until it has been approved,—
 - (a) at a postal ballot of the Fellows held in accordance with the Academy bylaws; or
 - (b) if there are no relevant Academy bylaws, in such manner as the Council thinks fit.
- (4) An Academy bylaw is approved under subsection (3)(a) if, and only if, a majority of not less than two-thirds of the valid votes cast in the ballot favour the bylaw.
- (5) Subsections (3) and (4) apply in relation to any amendment or revocation of any Academy bylaw.

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(6) In the event that there is any conflict between the rules and the Academy bylaws, the rules prevail.

Section 39 heading: amended, on 3 March 2012, by section 20(1) of the Royal Society of New Zealand Amendment Act 2012 (2012 No 1).

Section 39(1): amended, on 3 March 2012, by section 20(2) of the Royal Society of New Zealand Amendment Act 2012 (2012 No 1).

Section 39(1)(a): amended, on 3 March 2012, by section 20(2) of the Royal Society of New Zealand Amendment Act 2012 (2012 No 1).

Section 39(1)(c): amended, on 3 March 2012, by section 20(2) of the Royal Society of New Zealand Amendment Act 2012 (2012 No 1).

Section 39(1)(d): amended, on 3 March 2012, by section 20(2) of the Royal Society of New Zealand Amendment Act 2012 (2012 No 1).

Section 39(2)(a): amended, on 3 March 2012, by section 20(2) of the Royal Society of New Zealand Amendment Act 2012 (2012 No 1).

Section 39(2)(c): amended, on 3 March 2012, by section 20(2) of the Royal Society of New Zealand Amendment Act 2012 (2012 No 1).

Section 39(2)(c): amended, on 3 March 2012, by section 20(3) of the Royal Society of New Zealand Amendment Act 2012 (2012 No 1).

Miscellaneous provisions

- 40 Repeal of Royal Society of New Zealand Act 1965 The Royal Society of New Zealand Act 1965 is repealed.
- 41 Private Act This Act is a private Act.

Transitional provisions

- 42 Membership and staff
- (1) Every person who, immediately before the commencement of this Act, is a Fellow or an Honorary Member of the Society pursuant to the Royal Society of New Zealand Act 1965 is, on the commencement of this Act, deemed to be a Fellow or an Honorary Fellow, as the case may be, of the Society.

(2) [Repealed]

(3) Every person who, immediately before the commencement of this Act, was an officer or employee of the Society pursuant to the Royal Society of New Zealand Act 1965 is, on the commencement of this Act, deemed to be an officer or employee of the Society and is not entitled to any payment or other benefit for redundancy or otherwise.

Section 42(2): repealed, on 3 March 2012, by section 21 of the Royal Society of New Zealand Amendment Act 2012 (2012 No 1).

43 Transitional provisions

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- (1) Every person who, immediately before the commencement of the Royal Society of New Zealand Amendment Act 2012, is an elected Councillor under section 22 may hold office as an elected Councillor for a maximum of 6 consecutive years, starting from the most recent date that the person assumed office before the commencement of that Act.
- (2) Every person who, immediately before the commencement of the Royal Society of New Zealand Amendment Act 2012, is an appointed Councillor under section 23 is deemed to have been appointed for a term of 3 years.
- (3) The code of professional standards and ethics issued under section 34 that is in force immediately before the commencement of the Royal Society of New Zealand Amendment Act 2012 continues in force and applies to members of the Society as if references to science and technology were a reference to science, technology, and the humanities.

Section 43: replaced, on 3 March 2012, by section 22 of the Royal Society of New Zealand Amendment Act 2012 (2012 No 1).

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Schedule

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Provisions relating to management of Society

- 1 Appointment of Chief Executive Officer
- The Council may from time to time appoint a Chief Executive Officer, who is responsible to the Council for the management of the Society.
- (2) The Chief Executive Officer appointed under this clause is appointed on such terms and conditions as the Council agrees with the Chief Executive Officer.
- 2 Appointment of other employees
- The Chief Executive Officer may from time to time appoint, as employees of the Society, such persons as he or she thinks necessary for the efficient performance of the Society's functions.
- (2) An employee is appointed on such terms and conditions as the Chief Executive Officer agrees with the employee.
- (3) The Chief Executive Officer may at any time terminate or suspend the employment of any of the Society's employees in accordance with that employee's terms and conditions of employment.

3 Personnel policy

- (1) The Society must be a good employer.
- (2) For the purposes of this clause, a good employer is an employer who operates a personnel policy containing provisions generally accepted as necessary for the fair and proper treatment of employees in all aspects of their employment, including provisions requiring—
 - (a) good and safe working conditions; and
 - (b) an equal opportunities employment programme; and
 - (c) the impartial selection of suitably qualified persons for appointment; and
 - (d) opportunities for the enhancement of the abilities of individual employees; and
 - (e) recognition of-
 - (i) the aims and aspirations of Maori; and

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- (ii) the employment requirements of Maori: and
- (iii) recognition of the aims and aspirations, and the cultural differences, of ethnic or minority groups; and

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- (iv) recognition of the employment requirements of women; and
- (v) recognition of the employment requirements of persons with disabilities.
- 4 Equal employment opportunities

For the purposes of clause 3, an equal employment opportunities programme must be implemented by the Chief Executive Officer and must be aimed at the identification and elimination of all aspects of policies, procedures, and other institutional barriers that cause or perpetuate, or tend to cause or perpetuate, inequality in respect of the employment of any persons or groups of persons.

5 Society deemed to be local authority for purposes of National Provident Fund Act 1950

The Society is deemed to be a local authority for the purposes of the National Provident Fund Act 1950 (as continued by the National Provident Fund Restructuring Act 1990) and section 6 of the Finance Act (No 2) 1941.

- 6 Superannuation for staff
- (1) For the purpose of providing superannuation or retiring allowances for any of the employees of the Society, the Council may, out of the funds of the Society, make payments to or subsidise any superannuation scheme that is registered under the Superannuation Schemes Act 1989.
- (2) Any person who, immediately before becoming an officer or employee of the Society, is a contributor to the Government Superannuation Fund under Part 2 or Part 2A of the Government Superannuation Fund Act 1956 is deemed to be, for the purposes of the Government Superannuation Fund Act 1956, employed in the Government service so long as that person continues to be an officer or employee of the Society; and that

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Act applies to that person in all respects as if that person's service as such an officer or employee were Government service.

- (3) Subject to the Government Superannuation Fund Act 1956, nothing in subclause (2) entitles any such person to become a contributor to the Government Superannuation Fund after that person has once ceased to be a contributor.
- (4) For the purposes of applying the Government Superannuation Fund Act 1956, in accordance with subclause (2), to a person who is in the service of the Society as an officer or employee and is a contributor to the Government Superannuation Fund, the term controlling authority, in relation to any such person who is in the service of the Society, means the Society.

7 Meetings

At any meeting of the Council, Academy Executive Committee, or any committee appointed under section 28, the quorum necessary for the transaction of business is,—

- (a) if the relevant body has an even number of members, half the number of members; or
- (b) if the relevant body has an odd number of members, a majority of the number of members,—

but in no case may the quorum be fewer than 3 members. Schedule clause 7: amended, on 3 March 2012, by section 23 of the Royal Society of New Zealand Amendment Act 2012 (2012 No 1).

8 Delegation of powers of Council

- The Council may delegate to the Chief Executive Officer all powers and authorities that the Council considers necessary for that officer to manage the affairs of the Society.
- (2) All such delegations must be in writing and may be made subject to such restrictions and conditions as the Council thinks fit.
- (3) All such delegations must include a direction regarding the regular reporting to the Council on the use of each delegation.
- (4) Every delegation under this clause is revocable in writing, and no delegation affects or prevents the exercise of any function or power by the Council.

(5) The Chief Executive Officer purporting to act under any delegation under this clause is, until the contrary is proved, presumed to be acting in accordance with the terms of the delegation.

9 Annual report

The Council must in each year furnish to the members a report, which must include the annual audited accounts prepared in accordance with clause 10(3), with respect to the operation of the Society and the activities in the previous year.

10 Accounts

- The Council must keep full and correct accounts of all money received and expended by it, and all other financial transactions that the Society or the Council engages in.
- (2) The financial year of the Society is-
 - (a) the period of 12 consecutive months commencing on 1 January every year; or
 - (b) such other period as the Society determines in accordance with the rules.
- (3) The Council must, as soon as practicable after the end of each financial year, cause full and true statements and accounts of all its income and expenditure in that year and of its assets and liabilities at the end of that year to be prepared.
- (4) The Council must appoint an auditor in accordance with section 199 of the Companies Act 1993 to audit the accounts of the Society as soon as practicable after the end of each financial year.

11 Exemption from taxes

The Society is declared to be exempt from the payment of income tax. Compare: 1965 No 38 \$ 19

12 Investment of money

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Subject to the terms of any deed of trust or endowment, any money belonging to or vested in the Society and available for

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investment may be invested in any such manner as the Council may, subject to the rules, determine from time to time. Compare: 1965 No 38 s 22

13 Application of income and capital of Society Subject to the provisions of this Act and to the terms of any deed of trust or endowment, the income and capital of the Society must be applied in doing whatever the Council thinks expedient in order that the Society may accomplish its object.

14 Bank accounts

- The Council must open at any bank or banks such accounts as are necessary for the performance of its functions.
- (2) All money received by the Society or by any member, officer, or employee of the Society for the purposes of the Society, must, as soon as practicable after it has been received, be paid into such bank accounts of the Society as the Council from time to time determines.
- (3) The withdrawal or payment of money from any such accounts must be authorised in such manner as the Council thinks fit.
- (4) Any bank account of the Society must be operated only by cheque or other instrument signed by a member, officer, or employee of the Society authorised by the Society to do so, and must be countersigned by another member, officer, or employee of the Society authorised to do so.
- 15 Contracts
- Any contract which, if made by private persons, must be by deed shall, if made by the Council, be in writing under the common seal of the Society.
- (2) Any contract which, if made by private persons, must be signed by the parties to be charged with it shall, if made by the Council, be either under the common seal of the Society or signed by the President or a Councillor or an officer or employee of the Society on behalf of and by authority of the Council.
- (3) Any contract which, if made by private persons, may be made orally may be made in the manner specified in subclause (1) as

Schedule Royal Society of New Zealand Act 1997 3 March 2012

in the case of a deed, or in the manner specified in subclause (2) as in the case of a contract required to be in writing, or may, be made orally by or on behalf of the Council or by the President or a Councillor or an officer or employee of the Society acting by authority of the Council, but no oral contract niay be made for any sum exceeding \$2,000.

- (4) The Council may by writing under the common seal of the Society empower any person, either generally or in respect of any specified matters, to execute instruments on its behalf in any place in or beyond New Zealand. Any instrument executed by such an attorney on behalf of the Society binds the Society, and if executed as a deed has the same effect as if it were under the common seal of the Society.
- (5) Notwithstanding anything to the contrary in subclauses (1) to (4), no contract made by or on behalf of the Society is invalid by reason only that it was not made in a manner provided by those subclauses, if it was made pursuant to a resolution of the Council or to give effect to a resolution of the Council in relation to contracts generally or in relation to that particular contract.

16 Seal

28

The common seal of the Society is to be judicially noticed in all courts and for all purposes.

Reprinted as at 3 March 2012 Royal Society of New Zealand Act 1997

Notes

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2 Status of reprints

- 3 How reprints are prepared
- 4 Changes made under section 17C of the Acts and Regulations Publication Act 1989
- 5 List of amendments incorporated in this reprint (most recent first)

Notes

1 General

This is a reprint of the Royal Society of New Zealand Act 1997. The reprint incorporates all the amendments to the Act as at 3 March 2012, as specified in the list of amendments at the end of these notes.

Relevant provisions of any amending enactments that contain transitional, savings, or application provisions that cannot be compiled in the reprint are also included, after the principal enactment, in chronological order. For more information, see http://www.pco.parliament.govt.nz/reprints/,

2 Status of reprints

Under section 16D of the Acts and Regulations Publication Act 1989, reprints are presumed to correctly state, as at the date of the reprint, the law enacted by the principal enactment and by the amendments to that enactment. This presumption applies even though editorial changes authorised by section 17C of the Acts and Regulations Publication Act 1989 have been made in the reprint.

This presumption may be rebutted by producing the official volumes of statutes or statutory regulations in which the principal enactment and its amendments are contained.

3 How reprints are prepared

A number of editorial conventions are followed in the preparation of reprints. For example, the enacting words are not included in Acts, and

provisions that are repealed or revoked are omitted. For a detailed list of the editorial conventions, see http://www.pco.parliament.govt.nz/editorial-conventions/ or Part 8 of the Tables of New Zealand Acts and Ordinances and Statutory Regulations and Deemed Regulations in Force.

Changes made under section 17C of the Acts and 4 **Regulations Publication Act 1989**

Section 17C of the Acts and Regulations Publication Act 1989 authorises the making of editorial changes in a reprint as set out in sections 17D and 17E of that Act so that, to the extent permitted, the format and style of the reprinted enactment is consistent with current legislative drafting practice. Changes that would alter the effect of the legislation are not permitted. A new format of legislation was introduced on 1 January 2000. Changes to legislative drafting style have also been made since 1997, and are ongoing. To the extent permitted by section 17C of the Acts and Regulations Publication Act 1989, all legislation reprinted after 1 January 2000 is in the new format for legislation and reflects current drafting practice at the time of the reprint.

In outline, the editorial changes made in reprints under the authority of section 17C of the Acts and Regulations Publication Act 1989 are set out below, and they have been applied, where relevant, in the preparation of this reprint;

- omission of unnecessary referential words (such as "of this section" and "of this Act")
- typeface and type size (Times Roman, generally in 11.5 point)
- layout of provisions, including:
 - indentation .
 - position of section headings (eg, the number and heading now appear above the section)
- format of definitions (eg, the defined term now appears in bold type, without quotation marks)
- format of dates (eg, a date formerly expressed as "the 1st day of January 1999" is now expressed as "1 January 1999")

Reprinted as at		
3 March 2012	Royal Society of New Zealand Act 1997	Matan
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- position of the date of assent (it now appears on the front page of each Act)
- punctuation (eg, colons are not used after definitions)
- Parts numbered with roman numerals are replaced with arabic numerals, and all cross-references are changed accordingly
- case and appearance of letters and words, including:
 - format of headings (eg, headings where each word formerly appeared with an initial capital letter followed by small capital letters are amended so that the heading appears in bold, with only the first word (and any proper nouns) appearing with an initial capital letter)
 - small capital letters in section and subsection references are now capital letters
- schedules are renumbered (eg, Schedule I replaces First Schedule), and all cross-references are changed accordingly
- running heads (the information that appears at the top of each page)
- format of two-column schedules of consequential amendments, and schedules of repeals (eg, they are rearranged into alphabetical order, rather than chronological).
- 5 List of amendments incorporated in this reprint (most recent first) Royal Society of New Zealand Amendment Act 2012 (2012 No 1)

Wellington, New Zealand: Published under the authority of the New Zealand Government—2012 **Royal Society Te Apārangi**

General Rules

20 December 2018



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Amended 20 December 2018 by the Council of the Royal Society of New Zealand.

These Rules are made pursuant to s32 of the Royal Society of New Zealand Act 1997 ("the Act").

Bi Cultural Commitment

In giving effect to the objects for which the Society is established, the Society shall encourage policies and practices that reflect New Zealand's cultural diversity and shall, in particular, have due regard to the provisions of, and to the spirit and intent of, Te Tiriti o Waitangi (the Treaty of Waitangi).

1. Interpretation

1.1 General Provisions

- **1.1.1** These Rules (the "General Rules") are to be read and interpreted in conjunction with the Act, the Academy Bylaws (the "Bylaws"), the Code of Professional Standards and Ethics ("the Code") and the Procedures for Handling Complaints (the "Complaints Procedures").
- **1.1.2** In cases where conflict arises, the Act takes precedence over the General Rules, and the General Rules take precedence over the Bylaws, Code and the Complaints Procedures.
- 1.1.3 In these Rules, references made to sections are references to sections in the Act.
- **1.1.4** The commencement date of these amended Rules shall be 1 January 2019.

1.2 Defined Terms

- **1.2.1** In these Rules, unless the context requires otherwise, terms that are defined in s2 of the Act bear the same meaning ascribed to them in s2 of the Act.
- **1.2.2** In addition to the terms defined in the Act, the following definitions are provided for the purpose of interpreting these Rules:

Academy means the group of members comprising all Fellows and Honorary Fellows;

Ballot means an election process including voting by postal and/or electronic means;

Ballot form includes a written document on which a vote may be cast and/or a display of information in association with an electronic voting mechanism;

Branch means an organisation declared to be a Regional Constituent Organisation under s14;

Chair means a chairperson of a Committee;

Chief Executive means the Chief Executive Officer appointed under the Schedule to s36 of the Act;

Committee means a committee appointed under Rule 8;

Employment context means the different contexts in which Members undertake their activities, including but not limited to universities, Crown Research Institutes and independent research organisations;

Executive Officer of the Academy means a staff member appointed by the Chief Executive as secretary to the Academy Executive Committee.

Individual Member means any Member who is a Fellow, an Ordinary Member, a Companion, an Honorary Member or an Honorary Fellow;

Member means either an individual member or an Organisational Member;

Officer of the Society means a person who is employed by the Society;

Organisational Member means a Member which is one of a Constituent Organisation, Regional Constituent Organisation (Branch) or Affiliate Organisation which is admitted under s15(2);

Panel means a committee formed under Rule 9;

Royal Society Te Apārangi means the Royal Society of New Zealand; and

Written Notice includes notice given by email or by completion of an electronic form designed for the purpose;

2. Members

2.1 Admission of Ordinary Members [s11]

- **2.1.1** The following are the sub-classes of Ordinary Member:
 - a. Professional Member (entitled to use the initials MRSNZ), and
 - b. Associate Member, and
 - c. Student Member.
- **2.1.2** Admission as a Professional Member requires demonstration of the competence to undertake independent research practice. The Council shall define pathways and forms of evidence by which this level of competence may be demonstrated.
- **2.1.3** Admission as an Associate Member requires demonstration of the competence to apply the established body of knowledge in a discipline. The Council shall define pathways and forms of evidence by which this level of competence may be demonstrated.
- **2.1.4** Admission as a Student Member requires demonstration that the applicant is resident in New Zealand and currently enrolled in study at a New Zealand secondary school or tertiary educational institution.
- **2.1.5** Each person applying for admission to be an Ordinary Member in any sub-class must complete an undertaking to abide by the Act, Rules, Code and Complaints Procedures.
- **2.1.6** The Council may decline to admit any person who, in its sole opinion, is not a fit and proper person to be admitted as an Ordinary Member of the Society. It shall not be bound to give reasons for declining admission on this basis.

2.2 Admission of Honorary Members [s16]

- **2.2.1** Nomination of an Ordinary Member for Honorary Membership may be made by any Fellow, Companion or Professional Member of the Society at any time.
- **2.2.2** Nominations for Honorary Members are to be made to the Chief Executive and shall include a statement of not more than 500 words setting out reasons against the criteria in s16(1) as to why the nominee is worthy of being granted Honorary Membership.
- **2.2.3** The Council shall consider each nomination for an Honorary Member against the criteria in s16(1) and, if approval is given, the nominee shall be invited to accept Honorary Membership.

2.3 Admission of Companions [s12]

- **2.3.1** The Council shall publish annually to all Members a date by which nominations of persons to Companion must be made.
- **2.3.2** Nominations for Companion must be made in the prescribed format to the Chief Executive and shall include a statement of not more than 500 words setting out reasons against the criteria in s12(1) as to why the nominee is worthy of being elected a Companion.

- **2.3.3** Each nomination must be accompanied by at least two letters of support that demonstrate that the candidate is held in esteem and has broad support in the community or communities that are relevant to the nomination.
- **2.3.4** The Academy Executive Committee shall consider each nomination against the criteria in s12(1) and advise the Council on the suitability of each candidate.
- **2.3.5** The Council shall consider the advice of the Academy Executive Committee, and shall decide whether to approve or decline each nomination. If approval is given, the nominee shall be invited to accept Companion Membership.
- **2.3.6** A person is not rendered ineligible to be a Companion by virtue of election as a Fellow or Honorary Fellow.
- **2.3.7** Each person accepting to be a Companion must complete an undertaking to abide by the Act, Rules, Code and Complaints Procedures.
- **2.3.8** Companions are entitled to receive a certificate of membership.
- **2.3.9** Companions who are no longer able to contribute to the activities of the Society may apply to the Council for transfer to Honorary Membership.
- **2.3.10** A person may be both a Companion and a Fellow or Professional member, and if so, shall pay only the higher of the relevant subscription levies.

2.4 Admission of Fellows and Honorary Fellows [s10 and s17]

2.4.1 The admission of Fellows and Honorary Fellows under s10 and s17 of the Act must be in accordance with the Academy Bylaws.

2.5 Admission of Branches [s14]

- **2.5.1** Organisations may apply for admission as a Branch at any time. Applications must be made to the Chief Executive and shall include a statement of not more than 500 words setting out reasons for the application, and make the declarations set out in s14(1).
- **2.5.2** The Council shall consider each nomination against the criteria in s14(1) and, if approval is given, shall declare the applicant to be a Branch.
- **2.5.3** The Council may identify an organisation for consideration to become a Branch, and in such circumstances may invite the organisation to apply.

2.6 Admission of Constituent Organisations [s13]

- **2.6.1** The requirement to be declared a Constituent Organisations is to both meet the requirements set out in s13(1), but also to be demonstrably a nationally significant membership body undertaking learned society activities within either a particular discipline or in respect of a widely recognised body of knowledge that lies within science, technology and/or the humanities.
- 2.6.2 Organisations may apply for admission as a Constituent Organisation at any time. Applications must be made to the Chief Executive and shall include a statement of not more than 500 words setting out reasons for the application, and make the declarations set out in s13(1).
- **2.6.3** The Council shall consider each nomination against both the criteria in s14(1) and Rule 2.6.1 and, if approval is given, shall declare the applicant to be a Constituent Organisation.
- **2.6.4** The Council may identify an organisation for consideration to become a Constituent Organisation, and in such circumstances may invite the organisation to apply.

2.7 Admission of Affiliate Organisations [s15]

2.7.1 The requirement to be declared an Affiliate Organisation is to meet the requirements set out in s15(1), but also to normally be a non-profit body and have a demonstrable and unique

role within New Zealand supporting the public interest in relation to any of science, technology or the humanities.

- **2.7.2** Organisations may apply for admission as an Affiliate Organisation at any time. Applications must be made to the Chief Executive and shall include a statement of not more than 500 words setting out reasons for the application, and make the declaration set out in s15(1).
- **2.7.3** The Council shall consider each nomination against the criteria in s15(1) and Rule 2.7.1 and, if approval is given, shall admit the applicant as an Affiliate Organisation. Of itself, this does not admit the Affiliate Organisation as a member of the Society under s15(2).
- **2.7.4** The Council may identify an organisation for consideration to become an Affiliate Organisation, and in such circumstances may invite the organisation to apply.

2.8 Obligations on Members [s18, s34]

- **2.8.1** Obligations on a Member commence on admission as a Member and remain in place continuously until the Member's application for resignation is accepted or the Society revokes or terminates the Membership. Obligations remain in place for those Members in arrears of payment of their subscription levy.
- **2.8.2** All Members are subject to the provisions of the Act, these Rules and the Complaints Procedure established under s32(1)(b)
- **2.8.3** Members must act in a manner that is consistent with the Society's object and functions as set out in s18(1)(b) (the "membership obligation").
- **2.8.4** All Members must conduct themselves in accordance with the Code established under s34 (the "professionalism and ethical obligation").
- **2.8.5** Members must conduct themselves at all times in a manner consistent with being a fit and proper person to be a Member of the Society (the "good character obligation").

2.9 Rights of Members

- **2.9.1** Each Fellow shall be entitled to join one domain-based College as set out in Rule 6.2(c). Notice of selection or a request for change of a selected College must be by written notice to the Executive Officer of the Academy.
- **2.9.2** Each Companion, each Professional Member not holding Early Career Researcher status, and each Associate Member shall be entitled to join the Membership Electoral College.
- **2.9.3** Each Professional Member holding Early Career Researcher status shall be entitled to join the Electoral College of Early Career Researchers.
- 2.9.4 Each Constituent Organisation shall be entitled to join the Electoral College of Constituent Organisations and shall be entitled to cast between one and ten votes within that College. The Council must maintain a schedule that sets out the number of votes allocated in relation to the membership size of the Constituent Organisation.
- **2.9.5** All Members are entitled to receive publications and newsletters setting out the work of the Society and matters considered to be of interest to Members.
- **2.9.6** All Individual Members of the Society are entitled to receive preferential rights to attend Society events, if the Society chooses a preferential system of entry.
- **2.9.7** All members of Branches, who are not in other classes of Society membership, shall be entitled to receive the same preferential rights as Friends of the Society .
- 2.9.8 Organisational Members are entitled to be represented at regular Forums as set out in Rule8.
- **2.9.9** Each Constituent Organisation has the right to represent itself as a Constituent Organisation of Royal Society Te Apārangi, but in doing so must follow a format specified by the Council.

- **2.9.10** Each Branch has the right to represent itself as a Branch of Royal Society Te Apārangi, but in doing so must follow a format specified by the Council.
- **2.9.11** Each Affiliate Organisation has the right to represent itself as an Affiliate Organisation of Royal Society Te Apārangi, but in doing so must follow a format specified by the Council.
- **2.9.12** Other than as set out in s14(1)(b) in regard to Branches, no Member is entitled to represent the Society unless expressly authorised by the Council, President or Chief Executive to do so on a particular matter.
- **2.9.13** Whilst only Royal Society Te Apārangi may use the term "President" together with the names "Royal Society of New Zealand" or "Royal Society Te Apārangi" without further qualification, Branches may use the nomenclature "Branch President".

2.10 Membership Statuses

2.10.1 The Council may define statuses to apply within one or more classes of member such as emeritus or life status, part-time working or low-income status, retired status or early career researcher status.

2.11 Subscriptions [s26(2)(b)]

- **2.11.1** The Council may set different annual subscription levies for each class of Member. Honorary Members and Honorary Fellows are exempted from payment of subscription levies under s16(2) and s17(2)(a).
- **2.11.2** Individual Members may have their subscription rebated according to their membership status.
- **2.11.3** Individual Members may apply to the Chief Executive for rebate of their subscription on the grounds of hardship. The Chief Executive shall, at his/her sole discretion, decide whether to grant a rebate and the size of that rebate. Any rebate granted shall apply to only the current subscription year.
- **2.11.4** Subscriptions shall apply to a year commencing 1 July, and notices for each year shall be issued by the Chief Executive on or about this date each year.
- **2.11.5** The Society may charge Members a part year subscription levy for the year during which they were admitted.
- **2.11.6** If the subscription levied on a Member remains unpaid ninety (90) days after the issue of the notice, the rights of the Member including voting rights are suspended until payment is received.

2.12 Termination and Reinstatement of Membership

- **2.12.1** Members may apply to resign their membership at any time by written notice sent to the Chief Executive. For Organisational Members such notice must include evidence of the decision of the relevant governing body.
- **2.12.2** The Chief Executive may delay the acceptance of a resignation of a Member if either:
 - a. that Member is in arrears in their levied subscription applicable to any previous year or years, or
 - b. the hearing and determination of a complaint against that Member alleging a breach of the Code has not been completed.
- **2.12.3** The Chief Executive must, without undue delay, accept a resignation of a Member if Rule 2.12.2 does not apply.
- **2.12.4** Should the Chief Executive receive notice of the death of an Individual Member, or the dissolution or cessation of an Organisational Member, the Chief Executive shall treat that notice as if it were a resignation, but may not apply Rule 2.12.2.

- **2.12.5** Acceptance of a resignation cancels any outstanding obligation for payment of a subscription levy in the year in which the resignation was accepted.
- **2.12.6** Should the Council revoke or terminate a Membership under s18, it may require the Member to return any certificate of membership provided by the Society.
- **2.12.7** Should the subscription levied on a Member under Rule 2.11 remain unpaid at the expiry of six months from invoice date, the Council may terminate the Membership.
- 2.12.8 The Council may revoke the status of an Affiliate Organisation at any time under s15(3).
- **2.12.9** A former Member may apply for reinstatement. The Council may decide at its sole discretion whether to reinstate the Member to the class or sub-class of Membership previously held, whether to treat the request as a new application for admission, and whether any subscription arrears need to be paid.

2.13 Register of Members [s19]

2.13.1 The register shall be kept in electronic form and be publicly available.

2.14 Procedures and Delegation of Authority

- **2.14.1** The Council may establish operating procedures and detailed criteria for the purpose of implementing Rule 2, and within those procedures may delegate authority to the Chief Executive to make decisions on matters other than the admission of Fellows, Honorary Fellows, Companions, Honorary Members and Organisational Members.
- **2.14.2** The Chief Executive may delegate responsibility for procedural actions required to implement Rule 2 to other officers of the Society.

3. Friends of the Society

- **3.1** Natural persons may be recognised as Friends of the Society if they express an interest in the object of the Society. Admission as a Friend does not confer the rights or responsibilities of membership.
- **3.2** A Friend may be required to pay an annual levy to continue on the Roll of Friends of the Society. Failure to pay that levy within ninety (90) days shall lead to automatic removal of the person from the Roll.
- **3.3** The Council may, at its sole discretion provide services or privileges to Friends of the Society.
- 3.4 The Council may delegate responsibility for implementing Rule 3 to the Chief Executive.
- **3.5** The Chief Executive may delegate responsibility for procedural actions required to implement Rule 3 to other officers of the Society.

4. Council

4.1 Composition of the Council [s20]

- **4.1.1** From 1 July 2020 the Council shall be constituted as follows:
 - a. President elected according to s25;
 - b. President-elect elected by the Electoral College of Council [s21,22];
 - c. Chair of the Academy Executive Committee elected by the Electoral College of the Academy Executive Committee [s21,22];
 - d. Deputy Chair of the Academy Executive Committee elected by the Electoral College of the Academy Executive Committee [s21,22];
 - e. One (1) Councillor elected by the Membership Electoral College [s21, 22];
 - f. One (1) Councillor elected by the Electoral College of Constituent Organisations [s21, s22];

- g. One (1) Councillor appointed by the Branches [s23];
- h. Two (2) Councillors elected by the Electoral College of Māori Researchers [s21,22];
- i. One (1) Councillor elected by the Electoral College of Early Career Researchers [s21,22]; and
- j. Up to three (3) Councillors co-opted under s24.
- **4.1.2** The following positions in the Council may only be occupied by Members who are Fellows:
 - a. Chair of the Academy Executive Committee
 - b. Deputy Chair of the Academy Executive Committee
- **4.1.3** All other positions on the Council may only be occupied by people who are individual Members.
- **4.1.4** The Council may rebate the Member subscription of a person co-opted to Council under s24 for a one (1) year tenure.

4.2 Tenure and Terms of Council

- **4.2.1** The tenure of the President shall normally be three consecutive terms of one year. At the end of the first and second terms the Council shall confirm the continuation of the President in the subsequent term. [s25]
- **4.2.2** The tenure of the President-elect shall be no more than one year, this being the remaining time from his or her election until completion of the tenure of the President. Should the President-elect already be a Councillor he or she shall continue to hold both the existing Councillor role and that of President-elect, but is entitled to only a single vote in such circumstances.
- **4.2.3** The term for all other elected roles on Council shall be three (3) years, and each incumbent shall be eligible for immediate re-election to a second consecutive term of three (3) years.
- **4.2.4** The term for the appointed Councillor shall be three years [s23(4)]. The appointed Councillor is eligible for re-appointment for a further term.
- **4.2.5** The term for each co-opted Councillors shall be one year [s24(3)]. In co-opting a Councillor, the Council may decide whether that co-option shall be for a tenure of one, two or three terms. At the end of each term within the tenure, the Council shall confirm the continuation of the co-opted Councillor in the subsequent term.
- **4.2.6** The terms shall be staggered as follows:
 - The terms for the following positions shall commence in the same year:
 - President-elect,
 - o Chair of the Academy Executive Committee
 - Councillor appointed by Branches, and
 - One (1) Councillor elected by the College of Māori Researchers.
 - The terms for the following positions shall commence one year later:
 - o President,
 - Councillor elected by the Membership Electoral College, and
 - One (1) Councillor elected by the College of Māori Researchers.
 - The terms for the following positions shall commence one further year later:
 - Deputy Chair of the Academy Executive Committee,
 - o Councillor elected by College of Constituent Organisations, and
 - Councillor elected by College of Early Career Researchers.

- **4.2.7** No other Rule limits the ability of the Council to apply s30(3) and s31(3).
- **4.2.8** A Councillor who resigns his or her membership of the Society, or has his or her membership terminated under Rule 2.12 shall be deemed to have resigned from the Council under s30(1).
- **4.2.9** Any Councillor who fails to attend Council meetings for three consecutive meetings without a written apology being accepted by the Council, or without seeking and receiving leave of absence from the Council, shall be deemed to have resigned from the Council.
- **4.2.10** In the event that a Councillor is appointed or elected to fill a vacancy created under s30, that Councillor shall complete the existing tenure for the role in which the vacancy arose.
- **4.2.11** In the event that a person is elected to the role of President to fill a vacancy created under s31, unless the Council otherwise decides, that person shall complete the existing tenure for the role.
- **4.2.12** Service on the Council to fill a vacancy created under s30 or s31 shall be counted towards determining future eligibility to serve under s25(3) or s22(4).

4.3 Electoral Colleges [s21]

- **4.3.1** The Electoral College of Council shall comprise all members of the Council in the year preceding the commencement of the tenure of each new President;
- **4.3.2** The Electoral College of the Academy Executive Committee shall comprise all those serving at the time on the Academy Executive Committee plus any other Fellows serving at the time on the Council.
- **4.3.3** The composition of the Membership Electoral College is set out in Rule 2.9.2.
- **4.3.4** The composition of the Electoral College of Early Career Researchers is set out in Rule 2.9.3.
- **4.3.5** The Electoral College of Māori Researchers shall have a composition to be defined by the Council no later than 30 November 2019.
- **4.3.6** The composition of the College of Constituent Organisations is set out in Rule 2.9.4.

4.4 Election of President and President-elect [s25]

- 4.4.1 In the last term of the tenure of the President, the Electoral College of Council shall elect or appoint a President-elect who is eligible under Rule 4.1.3, to serve a term as specified in Rule 4.2.2. Candidates for President-elect should normally be Fellows, and thus be eligible to serve on the Academy Executive Committee.
- **4.4.2** The President-elect shall automatically succeed to the role of President on the completion of the tenure of the incumbent President.
- **4.4.3** The Electoral College of Council may set its own process and is not required to follow that set out in Rule 4.6.

4.5 Election of Chair and Deputy Chair of the Academy Executive Committee

4.5.1 The Electoral College of the Academy Executive Committee may set its own process and is not required to follow that set out in Rule 4.6, but must:

- Ensure each newly elected person is from a different domain to the incumbent completing their term,
- Ensure each newly elected person is from a different domain to the incumbent in the other Academy Executive Committee Chair or Deputy Chair role,
- Have regard to:
 - the benefits of the newly elected person having had experience of at least a year, normally during the last four years, on the Academy Executive Committee, and
 - the need, over a period of time, for the Chair and Deputy Chair roles to be shared across the six domains,
 - the benefits of having the Chair and Deputy Chair from different domains to the incumbent President and President-elect.

4.6 Returning Officer and Election Processes [s22, s23]

- **4.6.1** The appointment of a Councillor under s23 shall proceed as if the Branches were members of an electoral college of Branches.
- **4.6.2** The Chief Executive shall act as returning officer for the election of Councillors under s22 and appointment of a Councillor under s23.
- **4.6.3** The Chief Executive shall set a timetable for the election or appointment of Councillors that shall allow at least fourteen (14) days during which nominations are open and at least fourteen (14) days for casting of votes.
- **4.6.4** All elections shall be by confidential ballot.
- **4.6.5** The call for nominations for a position to be elected by an Electoral College shall be notified by Written Notice to all Members who are entitled to vote in that Electoral College.
- **4.6.6** The call for nominations for election to the position of Councillor appointed by Branches shall be notified by Written Notice to all Branches.
- **4.6.7** Each written notice under Rule 4.6.5 or Rule 4.6.6 must set out the position description, and the skills required to fulfil the role.
- **4.6.8** All nominations must be made by a Member of the relevant College and seconded by one other Member of the same College.
- **4.6.9** All nominations shall be made on the nomination form provided by the Chief Executive and shall include a statement of not more than 500 words setting out the suitability of the candidate as a governor of the Society.
- **4.6.10** Nominees must sign the nomination form indicating agreement to stand for office.
- **4.6.11** Ballot forms shall include the statements on nominees required by rule 4.6.9 and shall be provided to each Member eligible to vote.
- **4.6.12** Those Constituent Organisations entitled under Rule 2.9.4 to cast more than one vote must cast those votes as a group for one candidate.
- **4.6.13** Should there be more than one position to be filled each individual Member who is entitled to vote shall be allowed to cast as many votes as there are positions to be filled. Each Constituent Organisation shall be entitled to cast as many groups of votes as there are vacant positions. The size of each group shall be in accordance with Rule 2.9.4.

- **4.6.14** In order to be valid, the returned ballot forms must clearly show the voting intention of the Member.
- **4.6.15** The Chief Executive shall determine the eligibility of each returned ballot form against the electoral rolls of the Society.
- **4.6.16** Completed ballot forms must be received by the Chief Executive by the closing date specified on the ballot form.
- **4.6.17** The Council shall appoint scrutineers for each election who shall confirm eligibility of voters and the validity of electronic and hardcopy votes, and count the valid votes.
- **4.6.18** The candidate in each Electoral College who receives the most votes shall be declared to have been elected to the Council, and in the event that a College is electing to more than one position the highest polling candidates shall be elected.
- **4.6.19** Ties shall be resolved by a recount of votes in which each block of votes cast by a Constituent Organisation is reduced to a single vote, and if that fails to resolve the tie, by the Chief Executive drawing lots in the presence of the scrutineers.
- **4.6.20** The Chief Executive shall report the result declared by the scrutineers to the Council and to the candidates prior to any wider release. That report shall not contain the details of votes cast for each candidate.
- **4.6.21** On specific request to the Chief Executive, a candidate may be informed of the number of votes cast for him or herself, and the minimum number of votes required to have been elected.
- **4.6.22** The Council shall authorise the destruction of voting papers.

4.7 Co-option of Councillors [s24]

- **4.7.1** In co-opting Councillors, the Council shall have regard to the purpose of those positions set out in s24(2). That purpose shall include but not be limited to:
 - a. ensuring diverse perspectives, such as those from the New Zealand business community, Pasifika people, people with disabilities, and any other relevant sectors within New Zealand society are sufficiently represented;
 - b. ensuring sufficient diversity of gender and employment contexts;
 - c. ensuring coverage across science, technology and the humanities;
 - d. including expertise relevant to all function of the Society set out in s6 of the Act.
- **4.7.2** The Council shall normally make decisions on co-option as soon as possible after the election of Councillors under Rules 4.4 and 4.5.

4.8 Transitional Arrangements (this Rule shall automatically be removed on 1 July 2021).

- **4.8.1** Until 30 June 2019, the Council shall be structured as:
 - a. President;
 - b. Three (3) Vice-Presidents elected prior to 1 July 2018 by Electoral Colleges based on discipline-based groupings:
 - Biological and Life Sciences;
 - Physical and Mathematical Sciences, Technology and Engineering;

- Humanities and Social Sciences;
- c. Three (3) Councillors elected prior to 1 July 2018 by the General Electoral College;
- d. One (1) Councillor elected by the College of Constituent Organisations;
- e. One (1) Councillor appointed by the Branches; and
- f. Up to three (3) Councillors co-opted under s24.
- **4.8.2** On 1 July 2019, the following transitional arrangements shall apply:
 - a. The Vice-President (Physical and Mathematical Sciences, Technology and Engineering) shall become the Chair of the Academy Executive Committee, with one (1) year left to serve in the term;
 - b. The Vice-President (Biological and Life Sciences) shall become the Deputy Chair of the Academy Executive Committee, with two (2) years left to serve in the term; and
- **4.8.3** From 1 July 2019 to 30 June 2020 the Council shall be constituted as follows:
 - a. President;
 - b. Chair of the Academy Executive Committee;
 - c. Deputy Chair of the Academy Executive Committee;
 - d. Two (2) Councillors elected prior to 1 July 2018 by the General Electoral College;
 - e. One (1) Councillor elected by the College of Constituent Organisations;
 - f. One (1) Councillor appointed by the Branches;
 - g. One (1) Councillor elected by the Electoral College of Early Career Researchers; and
 - h. Up to three (3) Councillors co-opted under s24.
- **4.8.4** Rule 4.3.5 shall be replaced by a definition of the Electoral College of Māori Researchers no later than 30 November 2019.
- **4.8.5** On 1 July 2020, the following transitional arrangement shall apply:
 - a. The one (1) Councillor elected by the General Electoral College shall become the Councillor elected by the Membership Electoral College with one (1) year left to serve in the term;
 - b. The Councillor elected by the College of Constituent Organisations shall commence a two (2) year transitional term.
 - c. One (1) of the two (2) Councillors elected by the Electoral College of Māori Researchers shall commence a one (1) year transitional term.
- **4.8.6** On 1 July 2021, the following transitional arrangement shall apply:
 - a. The Deputy Chair of the Academy Executive Committee shall commence a one (1) year transitional term.
- **4.8.7** The requirements under Rule 4.5.1 for candidates for the positions of Chair and Deputy Chair of the Academy Executive Committee to have had previous experience as a College Chair shall be waived until 1 July 2021.

5. Roles and Procedures of the Council

5.1 Governance Charter

5.1.1 The Council shall maintain a governance charter that addresses the breadth of the functions of the Society in setting out both the general and the specific roles and responsibilities of Councillors.

5.1.2 The President may be deputised, if required, by the Chair or Deputy Chair of the Academy Executive Committee, or if neither of those is available by another Councillor selected by the President for this purpose.

5.2 Meetings and Decisions of the Council

- **5.2.1** The quorum for a meeting to be held shall be no less than 50% of all Council members.
- **5.2.2** The Chair shall be the President.
- **5.2.3** Decisions of the Council shall be by majority vote of Council members present.
- **5.2.4** In cases where there is no clear majority after all the Council members present have voted, the Chair shall have the casting vote.
- **5.2.5** The Chief Executive shall be responsible for keeping minutes of all Council meetings.

5.3 Decisions under Urgency

- **5.3.1** The Council may appoint an Executive Committee consisting of the President, and any other Councillors or Officers of the Society as it sees fit.
- **5.3.2** The Executive Committee may be delegated authority to conduct the business of the Society between Council meetings.
- **5.3.3** The Chief Executive shall be responsible for keeping a record of the decisions from all meetings of the Executive Committee and shall report on those decisions at the following Council meeting.
- **5.3.4** At the discretion of the President the Council may alternatively make decisions under urgency by the following process:
 - The President or Chief Executive (under delegation) shall send a written notice to each Councillor requesting that each responds to the President by a given time and date with their vote;
 - The majority required for a decision by this means is a majority of all Councillors;
 - Those who do not respond by the specified date and time shall be regarded to have abstained.
- **5.3.5** Decisions made under urgency shall be presented at the next Council meeting for ratification and inclusion in the minutes.

6. Academy Executive Committee [s37, 38]

- **6.1** The Academy shall be managed by the Academy Executive Committee according to the Academy Bylaws.
- 6.2 The Academy Executive Committee shall consist of
 - a. Chair and Deputy Chair; and
 - b. President of the Society (if a Fellow); and
 - c. six (6) Domain Convenors (hereinafter "Convenor"), each elected by a domain-based College:
 - Convenor for Humanities,
 - Convenor for Social and Behavioural Sciences,

- Convenor for Physical, Earth and Mathematical Sciences,
- Convenor for Biological and Environmental Sciences,
- Convenor for Medical and Health Sciences, and
- Convenor for Technology, Applied Sciences and Engineering.
- d. up to two additional co-opted Fellows.
- **6.3** The Chair and Deputy Chair of the Academy Executive Committee are elected through the process set out in Rule 4.5.
- **6.4** The membership of each domain-based College shall comprise those Fellows who have selected it under Rule 2.9.1.
- **6.5** Domain Convenors serve for three year terms. Each Domain Convenor shall be eligible for reelection to a subsequent term of three years but no Convenor can serve in that role for more than six (6) consecutive years.
- **6.6** Elections to Domain Convenors shall be carried out by the procedure set out in Rule 4.6, treating each domain-based College as if it were an Electoral College. Two Domain Convenors shall be elected each year.
- **6.7** Co-option under Rule 6.2(d) shall be the responsibility of the Academy Executive Committee, be for a maximum non-renewable term of three years, and conducted in the manner set out in the Academy Bylaws.
- **6.8** An Academy Executive Committee member whose membership of the Society is terminated, shall be deemed to have resigned from the Committee.
- **6.9** An Academy Executive Committee member may resign his or her membership of the Committee by written notice to the Chief Executive.
- **6.10** In the event that a vacancy (other than of a co-opted Fellow) on the Academy Executive Committee arises, the Academy Executive Committee shall appoint a replacement Fellow to serve the remainder of the term as soon as reasonably possible.
- **6.11** In fulfilling the role of intellectual leadership in their domain, each College Chair shall chair the relevant domain-based Forum under Rule 8, and additionally shall engage with relevant external stakeholders in their domain.
- 6.12 Transitional arrangements (this Rule shall automatically be removed on 1 July 2021):
 - Prior to 30 June 2019 there shall be election of six Domain Convenors, for terms commencing on 1 July 2019 as follows:
 - Convenor for Humanities and Convenor for Biological and Environmental Sciences (one year transitional terms)
 - Convenor for Physical, Earth and Mathematical Sciences and Convenor for Medical and Health Sciences (two year transitional terms)
 - Convenor for Social and Behavioural Sciences and Convenor for Technology, Applied Sciences and Engineering (three year terms)

7. Committees (except the Academy Executive Committee) [s28 and 29]

7.1 The Council may from time to time establish Committees.

- **7.2** The purpose (which must lie within a function set out in s6 of the Act), terms of reference, composition and level of delegated authority of each such Committee shall be approved by the Council, after consideration of recommendations from the Chief Executive.
- 7.3 The maximum term for a Committee shall normally be three (3) years. At the completion of the term, the Council may renew the term for one or more further periods, each not exceeding three (3) years if there is a demonstrated need for the Committee to continue.
- 7.4 A Committee will normally comprise between four (4) and ten (10) members.
- 7.5 The convenor of each Committee shall normally be a Fellow, Companion or Professional Member,
- **7.6** The Committee shall be established by the Council according to one of the following processes:
 - **7.6.1** The convenor shall normally be appointed in advance of other members and consulted by the Chief Executive in developing the recommended membership and Terms of Reference of the Committee.
 - **7.6.2** In certain circumstances, where a specific interest is established, the Council shall draft the Terms of Reference for the Committee, and then consult the relevant Members that have that specific interest in the purpose of that Committee to identify their preferences prior to appointing the membership and convenor of that Committee.
- **7.7** The term of Committee members shall normally be the term of the Committee set under Rule 7.3. Committee members may be reappointed for a further term, but would not normally serve more than two consecutive terms. Extensions beyond two consecutive terms would normally only be authorised to ensure continuity of knowledge on the Committee as a whole, or to allow an experienced Committee member to serve further as the convenor.
- **7.8** Committees are bound to operate within their Terms of Reference, the Act and the Code and are expected to follow a practice consistent with any Governance Charter approved by the Council.
- **7.9** The Council may delegate to the Chief Executive the authority to appoint or vary the membership of a Committee and approve or vary Terms of Reference, but if such delegation is made, the Chief Executive is required to inform the Council on all instances of the use of such delegation.
- 7.10 Each Committee shall report to the Council as requested, but no less frequently than annually.
- 7.11 Committee members may resign at any time by giving notice to the Chief Executive.
- **7.12** The President is an ex-officio member of all Committees, established under Rule 7, including the right to attend and speak.

8. Forums

- 8.1 There shall be the following types of Forums:
 - **8.1.1** General Forum (at which representatives of Organisational Members may participate).
 - **8.1.2** Branch Forum (at which representatives of all Branches may participate).
 - **8.1.3** Constituents' Forum (at which representatives of all Constituent Organisations may participate).
 - **8.1.4** Domain-based Forums (at which representatives of the Constituent Organisations within a particular domain may participate).

- 8.1.5 The Council may invite some or all Individual Members to participate in a General Forum.
- **8.1.6** The Council may identify stakeholder groups that are relevant to a domain but which are not Constituent Organisations, and invite each such group to nominate a representative to attend the relevant Domain-based Forum.
- **8.2** General Forums will be held as decided by the Council. Branch Forums will normally be held annually. Constituents' and Domain-based Forums will normally be held at least annually.
- **8.3** The representative of each Organisational Member shall be determined by the Member, but will normally be a member of that Member's governing body.
- **8.4** The General Forum shall be chaired by the President, the Branch Forum shall be chaired by the Council member appointed by the Branches, the Constituents' Forum shall be chaired by the Council member representing Constituent Organisations, and each Domain-based Forum shall be chaired by the relevant Domain Convenor. The President is eligible to attend all Forums and, in the event of a designated Forum Chair being unavailable, shall select a substitute for the Forum concerned.
- 8.5 The purposes of the Forums shall be as follows:
 - 8.5.1 General Forum to provide the opportunity for Organisational Members to be briefed on Society activities affecting all such Members, to provide advice to the Council on opportunities or issues of collective concern, and to raise ideas for new activities that might involve the Society working with the Organisational Members collectively.
 - **8.5.2** Branch Forum to provide the opportunity for Branches to be briefed on Society activities affecting all such Members, to provide advice to the Council on opportunities or issues of collective concern, and to raise ideas for new activities that might involve the Society working with the Branches collectively.
 - **8.5.3** Constituents' Forum to provide the opportunity for Constituent Organisations to be briefed on Society activities affecting all such Members, to provide advice to the Council on opportunities or issues of collective concern, and to raise ideas for new activities that might involve the Society working with the Constituent Organisations collectively.
 - **8.5.4** Domain-based Forum to provide the opportunity for relevant groupings of Organisational Members to be briefed on Society activities affecting their domain, to provide advice to the Council on opportunities or issues of concern within the domain, and to raise ideas for new activities that might involve the Society working with some or all Constituent Organisations in the domain.
- **8.6** Forums are advisory to the Council. The Council shall report its response to any advice given back to the relevant Forum.
- **8.7** Reports from the Forums to the Council of the Society shall normally be through provision of the written record of the outcomes of discussion at each Forum. All those entitled to attend a Forum shall be provided with the written record of that Forum.
- **8.8** The Chief Executive shall be invited to all Forums.

9. Expert Advice and Practice Advice Panels

9.1 The Council shall develop procedures and criteria for the selection and operation of Expert Advice Panels and/or Expert Advice Reference Groups for the purpose of providing expert advice under s6(e).

- **9.2** The Council shall develop procedures and criteria for the selection and operation of Practice Advice Panels and/or Practice Advice Reference Groups for the purpose of providing research and scholarly practice guidance to meet the professional needs of scientists, technologists and humanities scholars under s6(c).
- **9.3** Procedures developed under Rules 9.1 and 9.2 must include provisions for consulting Constituent Organisations in order to identify suitable candidates for each Panel and any associated Reference Group.
- **9.4** Expert Advice and Practice Advice Panels formed under this Rule are subject to the provisions of s28 and s29.
- **9.5** Expert Advice and Practice Advice Panels are required to act in a manner consistent with the Code.

Procedures and Schedules to General Rules

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Professional Member Criteria (Rule 2.1.2)

- 1. The criterion for admission as a Professional Membership is holding the competence to undertake independent research practice. This may be demonstrated by one of several pathways:
 - PhD qualification or equivalent, plus subsequent independent research activity (normally evidence by acceptance of peer-reviewed output not drawn from the PhD study); or
 - Master's qualification, or equivalent, and demonstrated independent research activity (normally evidenced by at least 3 peer reviewed publications drawn from the subsequent research); or
 - A Bachelor's degree (Level 7 tertiary qualification on the New Zealand Qualifications Framework) plus demonstrated independent research activity (normally evidenced by at least 5 peer reviewed publications drawn from the subsequent research); or
 - Other forms of evidence that demonstrate research independence, subject to the satisfaction of Royal Society Te Apārangi.
- 2. An applicant for admission must declare:
 - a. His or her commitment to abide by the Act, the Rules, the Code of Professional Standards and Ethics, and the Complaints Procedures.
 - b. That the information contained in the application is true and complete,
 - c. His or her commitment to pay all subscription levies within the prescribed time.
- 3. Each application for admission must include contact details of a referee whom the Society may approach in respect of this application.
- 4. Candidates for Professional Membership, and existing Professional Members may apply for Early Career Researcher status (Rule 2.10). The criterion for this status is to be both an active researcher and within 10 years of completing the highest research qualification held, normally a PhD. Parental and

other forms of leave will be deducted from the 10-year post-qualification time limit. (PhD, Master's and other degree candidates will not normally be considered as Royal Society Te Apārangi Early Career Researchers.)

- 5. Decisions on admission to Professional Member and award of Early Career Researcher status are delegated to the Chief Operating Officer. The Chief Operating Officer may seek the advice of a member of the Academy Executive Committee relevant to the discipline of the applicant prior to making a decision on admission of a particular candidate, or of the Early Career Researcher Forum Committee prior to making a decision on award of Early Career researcher status.
- 6. The Chief Operating Officer is delegated authority to further develop and implement procedures and information requirements for an application.

Associate Member Criteria (Rule 2.1.3)

- 1. The criterion for admission as an Associate is the competence to apply the established body of knowledge in a discipline. This may be demonstrated by one of several pathways:
 - A Bachelor's degree (Level 7 qualification) or equivalent, and work experience of no less than six months in a role in which the applicant uses the knowledge relevant to their discipline; or
 - A combination of a Level 6 qualification (or equivalent), learning through subsequent professional development and work experience of no less than two years in a role in which the applicant uses the knowledge relevant to their discipline; or
 - Other forms of evidence that demonstrate knowledge and use of this knowledge in a discipline, subject to the satisfaction of Royal Society Te Apārangi.
- 2. An applicant for admission must declare:
 - a. His or her commitment to abide by the Act, the Rules, the Code of Professional Standards and Ethics, and the Complaints Procedures.
 - b. That the information contained in the application is true and complete,
 - c. His or her commitment to pay all subscription levies within the prescribed time.
- 3. Each application for admission must include contact details of a referee whom the Society may contact in respect of this application.
- 4. Decisions on admission to Associate Member are delegated to the Chief Operating Officer.
- 5. The Chief Operating Officer is delegated authority to further develop and implement procedures and information requirements for an application.

Student member Criteria (Rule 2.1.4)

- 1. The criterion for admission as a Student Member is demonstration that the applicant is resident in New Zealand and currently enrolled in study at a New Zealand secondary school or tertiary education institution.
- 2. An applicant for admission must declare:
 - a. His or her commitment to abide by the Act, the Rules, the Code of Professional Standards and Ethics, and the Complaints Procedures.
 - b. That the information contained in the application is true and complete,
 - c. His or her commitment to pay all subscription levies within the prescribed time.
- 3. Decisions on admission to Student Member are delegated to the Chief Operating Officer.
- 4. The Chief Operating Officer is delegated authority to further develop and implement procedures and information requirements for an application.

Admission of Honorary Members (Rule 2.2)

- 1. S16 states that Honorary Membership may be granted to a person who is an ordinary member. The interpretation applied is that the person needs to:
 - a. Be, or eligible to be one, of Associate Member, Professional Member or Companion, and
 - b. Have rendered eminent service to science, technology or the humanities, or the Society.

Eminent service may be demonstrated by meeting some or all of the following indicators:

- i. A sustained period of activity in a voluntary role in the non-profit sector in promoting or advancing science, technology or the humanities,
- ii. A personally-directed programme of activity in science, technology or the humanities leading to outcomes that benefit New Zealand,
- iii. A sustained period of activity, going beyond the norm for the person's employment role, and leading to outcomes that benefit New Zealand,
- iv. A sustained period of meritorious activity in the service of the Society.

These indicators are not prescriptive, and nominators may present other forms of evidence of contribution as appropriate to the candidate.

2. The Chief Operating Officer is delegated authority to further develop and implement procedures and information requirements for implementation of Rule 2.2.3

Companions Criteria (Rule 2.3)

- 1. S12(1) states that candidates for election as a Companion must demonstrate either:
 - a. outstanding leadership in science, technology or the humanities, or
 - b. eminent or sustained contributions to the promotion and advancement in New Zealand of science, technology or the humanities.

In interpreting s12(1), the contribution must be significant at a national level, and beyond what could reasonably be expected from competent performance of their role for their current and previous employers. It must also be demonstrated that candidates are held in esteem by, and have broad support in the community or communities that are relevant to the nomination

Outstanding leadership may be demonstrated by meeting some or all of the following indicators:

- i. Meritorious service and leadership within non-commercial national entities formed to address important national public issues,
- ii. Uniting stakeholders around a common purpose to achieve beneficial outcomes in New Zealand's interests,
- iii. Undertaking a personal programme of activity highlighting an issue in a way that leads to its successful resolution in a manner that benefits New Zealand,
- iv. Developing, building and delivering a nationally significant organisation, activity or programme.

Eminent or sustained contribution may be demonstrated by meeting some or all of the following indicators:

- i. Development of a national profile as a communicator trusted by the public within their discipline, or more widely,
- ii. Procuring and managing the deployment of resources for public engagement to achieve demonstrated outcomes, for example in terms of improved public knowledge and perceptions,

- iii. Role modelling of new approaches to working with the community, leading to changes in the way the research and scholarly community interacts with the public,
- iv. Obtaining and deploying resources for delivery of nationally-significant public engagement programmes to advance community understanding of science, technology or the humanities

These indicators are not prescriptive, and nominators may present other forms of evidence of contribution as appropriate to the candidate.

- 2. Candidates for Companion may be asked how they are able to contribute to the activities of the Society.
- 3. The Chief Operating Officer is delegated authority to further develop and implement procedures and information requirements for an application.

Constituent Organisations - schedule of votes (Rule 2.9.4)

Number of members as at Number of votes Number of members Number of votes 1 January as at 1 January 6 0-49 400-549 1 50-99 2 550-699 7 3 8 100-199 700-849 200-299 4 850-999 9 5 300-399 1000 or more 10

The number of votes for a Constituent Organisation shall be determined as follows

Format of presentation of membership for COs (Rule 2.9.9)

The format of presentation shall be use of the words "xxx (*name of CO*) is a Constituent Organisation of Royal Society Te Apārangi" in 11 pt or smaller type as a footer on letters and other documents.

Format of presentation of membership for Branches (Rule 2.9.10)

The format of presentation shall be use of the words "xxx (name of RCO) is a Regional Constituent Organisation(/Branch) of Royal Society Te Apārangi" in 11 pt or smaller type as a footer on letters and other documents.

Format of presentation of membership for Affiliate Organisations (Rule 2.9.11)

The format of presentation shall be use of the words "xxx (name of Affiliate Organisation) is an Affiliate Organisation of Royal Society Te Apārangi" in 11 pt or smaller type as a footer on letters and other documents.

Schedule to show membership statuses, subscription and rebates (Rules 2.10.1, 2.11.1, 2.11.2 and 2.11.5)

Membership Classes Subscription **Statuses and rebates** Emeritus Retired Part-time **Early Career** Fellow 500 50% 75% 100% **Honorary Fellow** NIL Nil Companion **Honorary Member** NIL 180 **Professional Member** 75% 50%

The membership statuses, subscriptions and rebates shall be:

Associate Member	120	75%	
Student Member	30		

Those joining, elected or admitted in the first quarter of the year will pay a full annual subscription. This will be reduced to 75% and 50% for the applicable periods of the year. Those elected or admitted between 1 April and 30 June will be invoiced for the next membership year and will enjoy a 15 month first subscription period.

Reinstatement Process (Rule 2.12.9)

- 1. Decisions on reinstatement to Professional Member, Associate Member and Student Member are delegated to the Chief Operating Officer. Decisions on reinstatement to Honorary Fellow, Fellow and Companion are delegated to the Academy Executive Committee. Decisions on reinstatement to Honorary Member remain with the Council.
- 2. The Chief Operating Officer is delegated authority to further develop and implement procedures and information requirements for applications for reinstatement.

Friends (Rules 3.4 & 3.5)

- 1. Decisions on admission to Friend of the Society are delegated to the Chief Operating Officer.
- 2. The subscription levy for a Friend of the Society shall be \$30/year (including GST), and shall be rebated in 6 month periods.
- 3. The Chief Operating Officer is delegated authority to further develop and implement procedures and information requirements for applications for recognition as a friend of the Society.

Appointment of Scrutineers (Rule 4.6.17)

The Chief Executive is delegated authority to appoint scrutineers on behalf of the Council, but in doing so must ensure that any person selected is a Fellow, Companion or Professional Member of the Society and has no actual, perceived or potential conflict of interest in respect of any candidate.

Schedule of committees (Rule 7)

- There shall be a Committee of the Society known as the Early Career Researcher Forum Committee (ECR Committee) which shall be responsible for development of a programme of activities for the benefit of those Professional Members holding Early Career Researcher status.
- 2. There shall be a Committee of the Society known as the National Committee for SCAR which shall be responsible for coordinating activities for New Zealand's involvement in SCAR.
- 3. There shall be a New Zealand Committee of ANZCCART which shall undertake activities under the wider umbrella of ANZCCART.

Delegation for appointment of Committee members (Rule 7.9)

The Chief Executive is delegated authority to appoint the members (but not the convenors) of Committees unless the Council decides otherwise for a particular Committee.
Part 1: Preliminary Provisions

1.1 Introduction

- The object of Royal Society of New Zealand (hereinafter Royal Society Te Apārangi) is "the advancement and promotion in Aotearoa New Zealand of science, technology, and the humanities". For that purpose, the Society is required by the Royal Society of New Zealand Act 1997 to establish and administer for Members of the Society a Code of Professional Standards and Ethics in Science, Technology, and the Humanities (hereinafter the Code).
- 2. For the Society to support its Members to achieve the objectives of both exemplary ethical behaviour and world class research and scholarly practices, a robust code of practice is required. This Code applies across all fields of science, technology and the humanities, and across differing knowledge systems and research epistemologies, so as to address the complexity of ethical and practice concerns that may arise in Members' work. This Code also functions to support public trust through transparent standards.
- 3. The Code is divided into parts. Part 2 sets out ethical values and principles that underpin relevant research epistemologies, and describes research and scholarly practice that is consistent with those values and principles within the context of Aotearoa New Zealand. Part 3 describes the responsibilities on Members and sets out the standards.
- 4. The Code gives effect to the Treaty of Waitangi through a foundation of bi-cultural ethical principles from which the standards of the Code have been developed.
- 5. It is in the public interest¹ that all scientists, technologists, and humanities scholars act ethically, professionally and seek to prevent harm². Thus, Royal Society Te Apārangi makes this Code freely available to researchers and scholars, research institutions, research funding agencies and any other stakeholders in research or scholarly activities to adopt or use as a guide.

1.2 Legal status of the Code

- 1. This Code of Professional Standards and Ethics in Science, Technology, and the Humanities is made pursuant to section 34 of Royal Society of New Zealand Act 1997.
- 2. This Code replaces all previous codes of professional standards and ethics issued by the Council of Royal Society Te Apārangi, and commences on 1 January 2019.

² Harm includes but is not limited to cultural harm, defined as conduct that results in, or contributes to, the breakdown of the spiritual, moral, physical and emotional wellbeing of indigenous peoples or members of other groups sharing an ethnicity or cultural identity, and includes racist conduct. (model: *caid.ca/ILD2002v5n17p4.pdf*). Harm can only be justified if the potential benefits sufficiently outweigh any residual harm remaining after all reasonable avoidance and mitigation actions have been taken.



¹ The interests of people generally, including communities, whānau, hapū and iwi.

1.3 Compliance with the Code

- 1. Members³ of Royal Society Te Apārangi are obliged to comply with Part 3 of this Code when undertaking their research, scholarly or professional activities (hereinafter "activities")⁴.
- 2. In order to comply with Part 3 it shall be sufficient for a Member to take the actions and to exercise the level of care that a reasonable, ethical, professional researcher or scholar would normally take in the same circumstances⁵.
- 3. Members are also required to meet their regulatory and legal obligations⁶ in order to comply with this Code.
- 4. The Code does not otherwise limit Members' rights to exercise freedom of expression and freedom of enquiry under the Bill of Rights Act 1990, or to exercise the role of critic and conscience of society under s162 of the Education Act 1989.

Part 2: Values and Principles

Within the context of Aotearoa New Zealand, the ethical and professional values and principles relevant to, and responsibilities on, those who conduct research or scholarly activities are interpreted within a general framework that recognises human and civil rights, the principles of free enquiry and an open society, and the obligations arising from the Treaty of Waitangi. These principles and values represent the ethical sources of both the responsibilities as well as the detailed and specific standards that follow. They share a common ground: respectful and rights-based knowledge discovery between researchers, participants and communities to advance science, technology, and the humanities in Aotearoa New Zealand. The Code prioritises neither the established research ethics principles nor the Māori values, and encourages Members to regard them as working together to guide action appropriate to their specific research context.

Tika ⁷	Mana	Whakapapa	Manaakitanga
Pūkenga	Kaitiakitanga	Justice	Duty of care
Beneficence	Non-maleficence	Respect	Integrity

³ Members include Honorary Fellows, Fellows, Companions, Professional Members, Associate Members, Student Members, Honorary Members, Regional Constituent Organisations (Branches) and Constituent Organisations, but does not include Affiliate Organisations or Friends of the Society. Membership of a Regional Constituent Organisation or a Constituent Organisation of itself does not make a person a Member of the Society.

⁴ Research, scholarly and professional activities include, but are not limited to, activities in employment, consulting, contracting and in voluntary roles.

⁵ Circumstances includes consideration of the type of Membership held.

⁶ Relevant legislation includes but is not limited to: the New Zealand Bill of Rights 1990; the New Zealand Public Health and Disability Act 2000; the Health and Disability Commissioner (Code of Health and Disability Consumers' Rights) Regulations 1996 (www.hdc.org.nz); the Privacy Act 1993; the Health Information Privacy Code 1994; the Injury Prevention, Rehabilitation and Compensation Act 2001; the Resource Management Act 1991; the Hazardous Substances and New Organisms Act 1996; the Animal Welfare Act 1999; the Health Research Council Act 1990; and the Protection of Personal and Property Rights Act 1988.

⁷ Māori words have meanings that are highly context-dependent. In this context **tika** means acting with integrity and respecting the interests of relevant communities; **mana** means balancing one's own authority and the rights held by others; **whakapapa** acknowledges the importance of relationships with relevant communities; **manaakitanga** means acting with care and respecting diverse values and communities; **pūkenga** means acting with rigour; and **kaitiakitanga** means acting with responsibility and ensuring resources are managed appropriately. In this context, **beneficence** means acting to benefit other people, contributing to broad concepts of wellbeing, and balancing benefits against risks and costs; non-maleficence means not causing harm intentionally, and ensuring that the risks of harm are outweighed by the expected benefits, **justice** requires that people are treated fairly and equitably, including fairly distributing the benefits and burdens of research to individuals and communities; **respect** for persons means respecting an individual's right to make choices and hold views, and to take actions based on their own values and beliefs; **integrity** refers to the trustworthiness of research due to the soundness of its methods and the honesty

Research and scholarly practices that are consistent with these values and principles will:

- 1. Be conducted with professionalism, integrity, care and diligence by appropriately knowledgeable people;
- 2. Be undertaken in a manner consistent with accepted standards and codes of practice;
- 3. Be respectful to other people, including acting with cultural intelligence⁸ and intellectual rigour (pūkenga), and respecting diverse values and communities (manaakitanga);
- 4. Recognise the potential impacts on communities, including their intergenerational interests;
- 5. Endeavour to identify and engage with affected communities (whakapapa), recognise their rights (mana) and respect their interests (tika);
- 6. Ensure that activities with partners and/or participants have potential benefits that outweigh the risks and that the risks and benefits are not distributed inequitably;
- 7. Take reasonable actions and precautions to protect vulnerable people and prevent harm to participants or others;
- 8. Make results and findings available as soon as it is appropriate to do so;
- 9. Support the public interest, including by averting or avoiding unacceptable levels of risk of adverse consequences;
- 10. Manage collected data responsibly;
- 11. Exemplify, require and support respectful and professional conduct amongst colleagues, and across the research community (manaakitanga);
- 12. Take reasonable precautions to prevent significant avoidable or unjustified degradation of the environment (kaitiakitanga); and
- 13. Where appropriate, contribute to improving conservation, protection and sustainability (kaitiakitanga).

Part 3: Responsibilities and Standards

Members have responsibilities to behave with professionalism, integrity, care and diligence; responsibilities to the public interest, affected and participating communities, partners and participants in their activities and colleagues; and responsibilities for guardianship of the environment and improving sustainability. Accordingly, Members are obliged:

and accuracy of its presentation; **duty of care** describes the obligations that a reasonable person owes to others who may be affected by their acts or omissions.

⁸ Cultural intelligence means the capability to relate and work effectively across cultures.

- 1. To behave with honesty, integrity, and professionalism when undertaking their activities;
- 2. To only claim competence commensurate with their expertise, knowledge and skills, and ensure their practices are consistent with relevant national, Māori⁹ and international standards and codes of practice in their discipline or field;
- 3. To undertake their activities diligently and carefully;
- 4. To support the public interest by making the results and findings of their activities available as soon as it is appropriate to do so, by presenting those results and findings in an honest, straightforward and unbiased manner, and by being prepared to contribute their knowledge or skills to avert or lessen public crises¹⁰ when it is appropriate to do so;
- 5. In undertaking their activities, to endeavour, where practicable, to partner with those communities and mana whenua for whom there are reasonably foreseeable direct impacts, and to meet any obligations arising from the Treaty of Waitangi;
- 6. To safeguard the health, safety, wellbeing, rights and interests of people involved in or affected during the conduct of their activities;
- 7. To ensure that the three Rs (Replacement, Reduction and Refinement) are considered at all stages of their activities involving animals, minimise the impacts on animals used in those activities, and in so doing, support the welfare and wellbeing of those animals;
- 8. To develop, and implement so far as they are reasonably able¹¹, a management plan to ensure the integrity, retention, secure storage, appropriate and transparent use of data and samples gathered or developed during their activities;
- 9. To demonstrate and encourage ethical behaviour and high professional standards amongst their colleagues;
- 10. To not harass¹², bully or knowingly act with malice towards individuals or groups of people; and
- 11. To take reasonable steps to prevent their activities leading to significant avoidable or unjustified degradation of the environment, and where appropriate, to contribute to improved conservation, protection and sustainability.

⁹ As set out, for example, in Te Ara Tika Guidelines for Maori Research Ethics.

¹⁰ In this context, public crisis means a situation in which there is an unacceptable risk of significant harm to people, or of substantial and widespread damage to property or the environment.

¹¹ This obligation expires when the Member is no longer able, in practical terms, to influence the ongoing management of the information, data, samples, materials or derived results gathered or developed during their activities, when their employer assumes responsibility on their behalf, or when the data or samples are transferred to a recognised long term data or sample repository which assumes responsibility for their further management.

¹² Harassment is conduct that unjustifiably disturbs or upsets another. It is characteristically repetitive and may be physically or psychologically harmful to the victim. It is exacerbated when the consequences of not accepting the behaviour may be disadvantageous to the victim. Forms of harassment include but are not limited to: verbal comments that reinforce social structures of domination (related to gender, gender identity and expression, sexual orientation, marital and family status, disability, physical appearance, body size, culture, ethnicity, nationality, age, religion or lack thereof, beliefs or socioeconomic status etc.); sexual images in public spaces; deliberate intimidation, stalking, or following; harassing photography or recording; sustained disruption of talks or other events; inappropriate physical contact; unwelcome sexual attention; and advocating for or encouraging any of the above behaviour.

In their activities¹, Members² who undertake the actions below to the standard expected of a reasonable, professional, ethical researcher or scholar in the same circumstances³ would comply with the Code.

Statements in italics are the standard as set out in the Code.

Members are obliged:

Honesty, integrity and professionalism

1. To behave with honesty, integrity and professionalism when undertaking their activities.

To meet this standard, Members should --

- a. honestly represent their research goals and intentions; and
- b. present the results of their research without falsification (including by deliberate omission) or conscious bias; and
- c. fairly represent and not suppress the intellectual, material and practical contributions of others to their work and results; and
- d. take ongoing responsibility for the contents of publications and reports authored by them; and
- e. preserve research records in order to allow examination by bona fide critics; and
- f. ensure all claims of their own or others' qualifications and experience are accurate and truthful; and
- g. not commit plagiarism, or assist or condone acts of plagiarism by others; and
- h. be fair and unbiased in their activities, in the application and communication of their knowledge, and in developing their professional view; and
- i. make evident those statements that are speculative or interpretive, and avoid undue simplification, in their reports or expressions of their professional view; and
- j. avoid and oppose any selective manipulation or presentation of results to meet the perceived needs or requirements of employers, clients, funding agencies, the media or other interested parties; and



¹ Activities means research, scholarly and professional activities including, but are not limited to, activities in employment, consulting, contracting and in voluntary roles.

² Members include Honorary Fellows, Fellows, Companions, Professional Members, Associate Members, Student Members, Honorary Members, Regional Constituent Organisations (Branches) and Constituent Organisations, but does not include Affiliate Organisations or Friends of the Society. Membership of a Regional Constituent Organisation or a Constituent Organisation of itself does not make a person a member of the Society.

³ Circumstances includes consideration of the type of Membership held.

- k. avoid or declare real or potential conflicts of interest, and where appropriate, record them; and
- reject and oppose any inappropriate inducement, including receiving in their own right anything of substantial value from any third party, or giving or promising to give anything of such value to any third party, where doing so might compromise or might reasonably be seen to compromise the integrity of their, or that other party's, research or other activity; and
- m. recognise their obligation to uphold ethical and professional standards across the research community including raising concerns about adherence to applicable standards with the researchers involved or on matters of sufficient gravity, reporting their concerns about suspected misconduct, substandard or irresponsible research practices to the relevant authorities.

Competence and good practice

2. To only claim competence commensurate with their expertise, knowledge and skills, and ensure their practices are consistent with relevant national⁴;, Māori⁵ and international standards and codes of practice in their discipline or field.

To meet this standard, Members should -

- a. present themselves as competent only within their relevant areas of expertise, knowledge or skills; and
- b. maintain the currency of their relevant knowledge and skills in any area in which they claim to be competent; and
- c. ensure their practices are consistent with any relevant national, Māori or international codes of practice or standards pertaining to their activities and
- d. act with cultural intelligence⁶ and intellectual rigour in their activities; and
- e. ensure that activities they undertake in other jurisdictions meets both the ethical standards pertaining in Aotearoa New Zealand and those of the jurisdiction in which the activities are undertaken.

Care and diligence

3. To undertake their activities diligently and carefully.

To meet this standard, Members should --

- a. ensure that their proposed research or scholarly methodologies are fit for purpose; and
- b. be diligent and careful in their activities to ensure that their methodologies are proficiently applied and undertake sufficient checking to minimise undetected mistakes or errors; and

⁴ E.g. within Aotearoa New Zealand, the standards of the New Zealand Psychological Society, the Association of Social Science Researchers, the New Zealand Association for Research in Education, and Engineering New Zealand.

⁵ As set out, for example, in Te Ara Tika Guidelines for Maori Research Ethics.

⁶ Cultural intelligence means the capability to relate and work effectively across cultures.

- c. report to their employer, funder and/or client as appropriate when there are insufficient resources to undertake their activities in accordance with the relevant standard or code of practice; and
- d. accept responsibility, including for rectification where practicable, if mistakes, errors or poor practice are discovered in their activities or results, or in the activities or results of those whose activities they have supervised; and
- e. take reasonable steps⁷ to protect others from harm (including cultural harm) and guard against unconscious bias during the course of their activities.

Responsibilities in the public interest

4. To support the public interest by making the results and findings of their activities available as soon as it is appropriate to do so, by presenting those results and findings in an honest, straightforward and unbiased manner, and by being prepared to contribute their knowledge or skills to avert or lessen public crises⁸ when it is appropriate to do so.

To meet this standard, Members should —

- a. encourage employers, funders and clients to permit public disclosure of the results of their activities unless there are legitimate and lawful reasons for confidentiality but, nevertheless, always ensure that confidentiality is maintained when it is legitimately required by the employer, funder or client; and
- b. within the caveat of a., ensure the communication of the results of publicly-funded research at the earliest appropriate opportunity; and
- c. inform, as appropriate to the circumstances, their employer, funder and/or client, if they consider that there is an unacceptable risk of adverse consequences for the public interest arising from any contractual conditions that limit the public disclosure of the findings from their activities and, if practicable, seek relief from or reconsideration of the relevant contractual condition; and
- d. not knowingly suppress negative research results, and endeavour to publish and/or notify affected parties of any negative results or results that may not support present theories or interpretations of previous results; and
- e. support the publication and dissemination of all competent research even when the conclusions drawn by the authors are contrary to the Member's own opinions or to the currently accepted consensus; and
- f. to the extent it is practicable, ensure that public statements derived from their activities are accurate, especially in communicating the potential impacts of the research; and
- g. where reasonably practicable, be prepared to contribute in a public crisis, if either the risks or consequences can be substantially reduced or averted by application of their expertise, knowledge and skills.

⁷ In this context, "reasonable steps" does not include suppressing research findings or scholarly output that may challenge the activities, views or beliefs of groups of people.

⁸ In this context, public crisis means a situation in which there is an unacceptable risk of significant harm to people, or of substantial and widespread damage to property or the environment.

Responsibilities to partners, participating and affected communities⁹

5. In undertaking their activities, to endeavour, where practicable, to partner with those communities and mana whenua for whom there are reasonably foreseeable direct impacts, and to meet any obligations arising from the Treaty of Waitangi.

To meet this standard, Members should —

- a. endeavour to identify potentially affected communities, hapū or iwi prior to commencement of the activity and, where practicable, ascertain whether they wish to participate; and
- b. where practicable and appropriate, involve any participating community, hapū or iwi in the development of the aims, design of the activity and the selection of means for its execution; and
- c. where practicable and appropriate, both involve and adequately resource participating communities, hapū and iwi as partners in the activity and respect their rights and cultural practices; and
- d. recognise and respect any established rights and interests of participating or affected communities, hapū or iwi, in intellectual property, mātauranga¹⁰, or of materials, samples, data or information gathered or developed during the research, including obtaining necessary permissions to use existing mātauranga and giving effect to any established right to participating or affected community, hapū or iwi ownership of new knowledge created during the activity; and
- e. endeavour, where practicable, to share those results and findings that are specific to the participating or affected community, hapū or iwi with them in advance of publishing or otherwise communicating the results and findings to others.

Responsibilities to participating people

6. To safeguard the health, safety, wellbeing, rights and interests of people involved in or affected during the conduct of their activities.

To meet this standard $^{\rm 11}$, Members should -

a. assess and minimise foreseeable hazards and safeguard the safety and health of people involved in, or likely to be affected during the conduct of their activities; and

⁹ An "affected community" is an identifiable community for which there are reasonably foreseeable direct impacts, which has sufficient internal organisation to make engagement at a community level practicable, and a "participating community" is one which has assented to engagement without imposing conditions that would unreasonably restrict the proposed activities.

¹⁰ Mātauranga Māori is the intellectual capital generated by whānau, hapū and iwi over multiple generations. It is a sharedcommunity knowledge that is embedded in lived experience and carried in stories, song, place names, dance, ceremonies, genealogies, memories, visions, prophesies, teachings and original instructions, as learnt through observation and copying of other community members. It is a holistic system of orally passed knowledge, concepts, beliefs and practice. Mātauranga Māori, mātauranga ā-iwi, mātauranga ā-hapū, and mātauranga ā-whānau are dynamic, innovative, and generative systems of knowledge.

¹¹ Obtaining approval of the proposed protocol for involving human participants from an accredited committee that assesses proposals against widely accepted codes of good practice (e.g. those for health research at www.hrc.govt.nz); or having quality assurance of the protocol undertaken by a competent committee constituted for that purpose, and following the approved protocol, would normally meet the expectations set out in 6 b. to i. but not necessarily all those under a.

- b. only involve people as participants in any proposed activity if the potential benefits sufficiently outweigh the risk of harm to those participants; and
- c. design and perform their activities according to an approved research protocol which conforms to widely applied good practice in their discipline, and which describes how the following ethical principles for human participants have been addressed:
 - 1. disclosure of research aims,
 - 2. respect for personal autonomy by informed and voluntary consent,
 - 3. respect for the rights of privacy and confidentiality,
 - 4. respect for the vulnerability of some participants,
 - 5. minimisation of harm, including cultural harm,
 - 6. avoidance of conflicts of interest,
 - 7. respect for established property rights including intellectual, material, financial and cultural, and
 - 8. social and cultural responsibility; and
- d. disclose the research aims to participants, normally in advance of the research, but at a later time only if it can be justified through a relevant authority that such disclosure would adversely affect either data quality or the validity of the research method, and that all regulatory requirements can still be met; and
- e. give highest priority to the welfare¹² of participants, including ensuring that there are sufficient protections (including, where relevant, insurance) for participants who may suffer injury or be harmed as a result of participation in research; and
- f. disclose any vested interest in a trial to any entity from which approval or quality assurance is sought, and to participants; and
- g. refer the matter to the appropriate authority should any unexpected ethical issue arise and, if necessary, be prepared to stop the research and not restart it until the authority's approval to do so has been obtained; and
- h. avoid coercion, and fully inform potential participants of their rights to refuse participation without negative consequences, and to withdraw from the research at any time; and
- i. ensure that any overseeing committee or authorised individual has access to trial data as they accumulate in order to assess the risk/benefit ratio and whether the trial should be discontinued because the re-evaluated ratio is no longer acceptable.

Responsibilities for the welfare of animal subjects

7. To ensure that the three Rs (Replacement, Reduction and Refinement) are considered at all stages of their activities involving animals, minimise the impacts on animals used in those activities and in so doing support the welfare and wellbeing of those animals.

¹² Including their health, mental and cultural wellbeing.

To meet this standard¹³, Members should —

- a. investigate possibilities for using alternatives and avoiding the use of animals at all; and
- b. use the minimum number of animals required for scientific validity; and
- c. design and perform their activities according to an accepted research protocol or code of conduct that meets the requirements of the Animal Welfare Act 1999¹⁴, conforms to widely applied good practice in their discipline, and addresses the following ethical principles for animals:
 - 1. undertaking a comprehensive review of previously published research to ensure there is a new and justifiable need to use animals,
 - 2. undertaking a comprehensive review of available research methodologies and animal handling practices to select the most effective research method and animal handling practices,
 - 3. selecting the most appropriate animal species,
 - where practicable, endeavour to partner with Māori in activities involving as subjects or likely to significantly affect taonga species¹⁵ or fauna indigenous to Aotearoa New Zealand,
 - 5. minimising harm or distress which will be inflicted on any animal and ensuring any such harm is outweighed by the realistic benefits likely to accrue,
 - 6. using appropriate and approved methods of anaesthesia, analgesia and tranquilisation on animals subjected to invasive procedure,
 - 7. undertaking supervision of the animals to ensure they are fed and cared for to safeguard their health and comfort,
 - 8. ensuring the competence of all persons handling animals or undertaking the research through adequate training and supervision, and
 - 9. ensuring the research is sufficiently well resourced so if an adverse or unforeseen event was to occur the welfare of the animals can be assured; and
- d. disclose any vested interest in a trial to any entity from which approval or quality assurance is sought; and
- e. refer the matter to the appropriate authority should any unexpected ethical issue arise and, if necessary, be prepared to stop the research and not restart it until the authority's approval to do so has been obtained; and

¹³ Obtaining approval of the proposed protocol for using animals from an accredited committee that assesses proposals against widely accepted codes of good practice such as those established under the Animal Welfare Act 1999; or having a quality assurance of the protocol undertaken by a competent committee constituted for that purpose, and following the approved protocol, would normally meet the expectations set out in 7 other than those set out in 7 c.4 in relation to taonga species or fauna indigenous to Aotearoa New Zealand.

¹⁴ Or any comparable successor legislation to the 1999 Act.

¹⁵ Taonga species are species of particular cultural significance to Māori generally, an iwi or a hapū.

- f. ensure that any overseeing committee or authorised individual has access to trial data as they accumulate in order to assess the risk/benefit ratio and whether the trial should be discontinued because the re-evaluated ratio is no longer acceptable; and
- g. share their own experiences to assist other researchers in giving effect to the three Rs in their own activities; and
- h. disseminate any negative results to prevent unnecessary use of animals for research of a similar purpose to that in which the negative results occurred.

Responsibilities to manage data and samples¹⁶

8. To develop, and implement so far as they are reasonably able¹⁷, a management plan to ensure the integrity, retention, secure storage, appropriate and transparent use of data and samples gathered or developed during their activities.

To meet this standard, in development and implementation of their management plan, Members should —

- a. recognise differing types of data and samples, including personal and community data, and identify situations where both individual and community permissions are required; and
- b. recognise the mana¹⁸ that Māori communities, iwi and hapū have over data and samples collected from and about them, their communities, cultural knowledge and resources, including respecting any relevant rights to ownership, governance and control of use of the data or samples; and
- c. recognise and disclose the intellectual property that may exist in any data or samples, and ensure that the established rights of the intellectual property owner are recognised and observed; and
- d. ensure that all conditions under which consent has been given, including any limitations on future use of the data and samples, are recorded and those records securely linked to the data or samples; and
- e. ensure or require that all conditions of consent are met whenever the data and samples are accessed, used, collated, interpreted or presented; and
- f. ensure that if data or samples collected for one restricted purpose are proposed to be used for another that any practicable steps are taken to extend existing consents or obtain new consents; and
- g. label and/or annotate data and samples collected by them to enable their accurate interpretation by others; and

¹⁶ In this context, data and samples includes collated information, data that is collected or measured, samples or specimens of material collected for analysis, and results derived from analysis of raw data.

¹⁷ This obligation expires when the Member is no longer able, in practical terms, to influence the ongoing management of the information, data, samples, materials or derived results gathered or developed during their activities, when their employer assumes responsibility on their behalf, or when the data or samples are transferred to a recognised long term data or sample repository which assumes responsibility for their further management.

¹⁸ Māori data sovereignty principles have been published by Te Mana Raraunga: <u>https://static1.squarespace.com/static/58e9b10f9de4bb8d1fb5ebbc/t/5bda208b4ae237cd89ee16e9/1541021836126/TMR+Ma</u> <u>%CC%84ori+Data+Sovereignty+Principles+Oct+2018.pdf</u>.

- h. endeavour to safeguard the privacy of individuals and segmented groups when data sets are collated or aggregated with other data; and
- i. endeavour to minimise the risk of data harm¹⁹; and
- j. where practicable, lodge samples of any newly discovered flora and fauna in recognised national collections²⁰ or with appropriate authorities.

Responsibilities to colleagues

9. To demonstrate and encourage ethical behaviour and high professional standards amongst their colleagues.

To meet this standard, Members should --

- a. provide comment in a respectful way to colleagues on the quality of their work or on their proposals, manuscripts and papers, and treat all information gained in such activity as privileged and confidential; and
- b. appropriately acknowledge and fairly record the intellectual, cultural, material and practical contributions of others to their work and results; and
- c. avoid falsely, vexatiously or maliciously impugning the reputations of colleagues or otherwise compromising or denigrating them in order to achieve commercial, professional or personal advantages; and
- d. ensure that those they supervise or guide comprehend both the need to further develop their own knowledge and skills and the behavioural norms of a professional researcher or scholar in the discipline or field.

Harassment, bullying and malice

10. To not harass²¹, bully or act with malice towards individuals or groups of people.

Responsibilities for sustainability and guardianship of the environment

11. To take reasonable steps to prevent their activities leading to significant avoidable or unjustified degradation of the environment, and where appropriate to contribute to improved conservation, protection and sustainability.

To meet this standard, Members should --

¹⁹ Data harm is adverse effects caused by uses of data (including big data) that may impair, injure, or set back a person, entity or society's interests.

²⁰ For example, taxonomic collections held in museums, Crown research institutes or universities.

²¹ Harassment is conduct that unjustifiably disturbs or upsets another. It is characteristically repetitive and may be physically or psychologically harmful to the victim. It is exacerbated when the consequences of not accepting the behaviour may be disadvantageous to the victim. Forms of harassment include but are not limited to: verbal comments that reinforce social structures of domination (related to gender, gender identity and expression, sexual orientation, marital and family status, disability, physical appearance, body size, culture, ethnicity, nationality, age, religion or lack thereof, beliefs or socioeconomic status etc); sexual images in public spaces; deliberate intimidation, stalking, or following; harassing photography or recording; sustained disruption of talks or other events; inappropriate physical contact; unwelcome sexual attention; and advocating for or encouraging any of the above behaviour.

- a. identify and assess the impacts of their activities on the environment, and take reasonable steps to avoid or mitigate avoidable or unjustified degradation; and
- b. where practicable, inform decision makers, mana whenua and others likely to be significantly affected of any major environmental impacts or foreseeable consequences for the environment of their activities; and
- c. not impair the ongoing conservation of unique or valued features, components and systems within the Aotearoa New Zealand natural environment; and
- d. not impair the ongoing protection and conservation of artefacts, places, or areas of cultural or historical significance; and
- e. where practicable, partner with Māori as kaitiaki in activities likely to affect taonga species, or flora and fauna indigenous to Aotearoa New Zealand; and
- f. support improved sustainability through seeking to use resources efficiently, and where practicable, through re-use and recycling.

Procedures for Handling Complaints (Complaints Procedures)

These Rules are made by the Council of the Royal Society of New Zealand (the Society) on 22 September 2016 under section 32 of the Royal Society of New Zealand Act 1997.

1. Title

These Rules shall be known as the "Complaints Procedures".

2. Commencement and Applicability

- 2.1 These Rules come into force on 1 October 2016.
- 2.2 These Rules give effect to section 18 of the Act.
- 2.3 Any complaint received after the commencement date shall be determined according to the procedures set out in these Rules, even if the events to which the complaint refers pre-date the commencement date.
- 2.4 Matters which commenced to be processed under earlier versions of these Rules shall be determined in accordance with the Rules in place at the time of receipt of the complaint.

3. Definitions

In these Rules unless the context otherwise requires-

- Academy Executive Committee means the Academy Executive Committee constituted under section 37 of the Act;
- Act means the Royal Society of New Zealand Act 1997;
- Chair means the Chair of the Academy Executive Committee;
- Chief Executive means the Chief Executive Officer of the Society;
- **Code** means the Royal Society of New Zealand Code of Professional Standards and Ethics issued under section 34 of the Act, as adopted by resolution of the Council, and includes any amendments to the Code issued to replace it;
- **complaint** means a complaint made under Rule 4.1
- **Complaint Determination Committee** or **Committee** means a committee appointed under Rule 7.1.
- Council means the Council of the Society constituted under section 20 of the Act
- Initial Investigation Panel or Panel means a panel appointed under Rule 6.
- material conflict of interest means, in relation to any matter, a financial or other interest of a person that is likely to affect the person's judgement in relation to the matter
- **Member** means a Member of the Royal Society of New Zealand in accordance with sections 9 to 19 of the Act. Section 9 of the Act provides that Membership of the Society consists of the following:

- a. Fellows:
- b. Ordinary Members (known as Professional Members):
- c. Companions:
- d. Constituent Organisations:
- e. Regional Constituent Organisations:
- f. Affiliate Organisations that are Members in accordance with section 15(2) of the Act:
- g. Honorary Members:
- h. Honorary Fellows.
- **notify** means to send a written notice (by post, email, fax, or other similar means of communication) to the last known address of the person concerned
- **respondent** means the Member complained about or into whose conduct the Society has initiated an inquiry;
- Society means the Royal Society of New Zealand continued by section 3 of the Act

4. How to complain about a Member

- 4.1 Any person may make a complaint to the Society alleging that there has been a breach by a Member of one of more of the professionalism and ethical obligation, membership obligation or good character obligation set out in General Rule 2.8.
- 4.2 To be valid a complaint must contain:
 - a. The name and contacts details of the complainant;
 - b. The name of the Member against whom the complaint is made;
 - c. The nature of the alleged breach, including identifying those obligations the complainant considers to be breached, and if part or all of the alleged breach is of the professionalism and ethics obligation, the specific clauses of the Code alleged to be breached; and
 - d. All information that the complainant considers relevant to the complaint.
- 4.3 Should the Society receive an intended complaint that, in the opinion of the Chief Executive, does not contain sufficient information to be valid, or is unsatisfactory in its form the Chief Executive shall request that information or the revision of the form of the complaint, and if, after thirty (30) days the information is not received or the complaint not put into satisfactory form, the Chief Executive shall deem the complaint to have lapsed.
- 4.4 The Chief Executive may explore with the complainant, the possibility of the complaint being better resolved by conciliation, mediation, arbitration, or another dispute resolution process. If a complainant is amenable to attempting resolution in such a manner, the Chief Executive may delay taking further steps under these Rules whilst he or she is satisfied that there is a reasonable chance of resolution. If the Chief Executive is satisfied that resolution has been achieved, he or she may deem the complaint to have lapsed.

5. Society may initiate enquiry

- 5.1 The Council may initiate an enquiry if it has reason to suspect that a Member may have breached the obligations on that Member, or supplied false or misleading information for the purpose of becoming a Member.
- 5.2 The Council may delegate the power to initiate an enquiry.
- 5.3 If Rule 5.1 applies, the Society may
 - a. Carry out an investigation of the matter in accordance with these Rules as if it were a complaint; or
 - b. If a complaint on that matter has already been made, continue to inquire into the matter even if the complaint is subsequently withdrawn.

6. Initial Investigation of the Complaint

- 6.1 The Initial Investigation Panel shall be comprised of two or three Fellows or Companions of the Society, selected by the Chair of the Academy Executive Committee. In the event that a member of the Panel is temporarily not available, the Chair shall, to deal with a specific complaint, appoint a substitute who shall be a Fellow or a Companion of the Society. To deal with a specific complaint, the Chair may supplement the Panel with a further member, who shall be a Fellow or a Companion of the Society.
- 6.2 On receipt of a valid complaint under Rule 4, or on commencement of an enquiry under Rule 5, the Chief Executive must open a file on the complaint and notify the Member complained about (the "respondent") of the nature of the complaint, and the membership of the Panel.
- 6.3 The Panel may invite the respondent to provide any written information that he or she considers relevant to the complaint, and must allow a reasonable period not exceeding thirty (30) days for the respondent to supply such information.
- 6.4 The Panel shall review the complaint and any information received from the respondent under Rule 6.3 and may decide no further action will be taken on the complaint if the Panel considers that, having regard to all the circumstances of the case further action is unnecessary or inappropriate, including by reason of:
 - a. there is insufficient evidence to establish that a breach has occurred or may have occurred: or
 - any breach, alleged or proven, is insufficiently grave to warrant further pursuit, including by reference to a Complaint Determination Committee under section 7; or

- c. the complaint is frivolous or vexatious or is not made in good faith: or
- d. the person alleged to be aggrieved does not wish action to be taken or continued: or
- e. an inquiry into the complaint is not practicable because the complainant has failed to provide information that would be needed for referral of the complaint to a Complaint Determination Committee: or
- f. a hearing on the complaint is no longer practicable given the time elapsed since the matter giving rise to the complaint;
- g. the subject matter of the complaint is not materially different to a previous complaint against the same respondent, which has already been heard by the Society; or
- h. the complaint is not amenable to resolution by a Complaint Determination Committee, including by reason of its demanding the open-ended evaluation of contentious expert opinion or of contested scientific evidence amongst researchers and scholars.
- 6.5 Before making a decision on a complaint, the Panel may explore, with the complainant and respondent, the possibility of the matter which gave rise to the complaint being referred to conciliation, mediation, arbitration, or another dispute resolution process.
- 6.6 If a complaint is referred to a dispute resolution process under Rule 6.5 and the complainant and respondent fail to resolve the matter within sixty (60) working days of the referral, or within any other time period that the Panel thinks fit, the Panel must make a decision on the complaint.
- 6.7 The intended decision of the Panel as to whether further action should be taken on the complaint and the reasons for that decision shall be notified to both the respondent and the complainant. The complainant and the respondent shall be given the opportunity to make a written submission within thirty (30) days.
- 6.8 The Panel shall consider any submissions received under Rule 6.7 and shall finalise its decision.
- 6.9 If the Panel decision is that further action shall be taken on the complaint it must identify in its decision the obligations, and if applicable the clauses in the Code, which it considers may have been breached, and if those do not correspond to the obligations and clauses alleged to be breached in the complaint, state the reasons for the difference.
- 6.10 The decision and the reasons for it shall be notified to the Academy Executive Committee, Council, respondent and complainant by the Chief Executive.
- 6.11 Should the decision of the Panel be that no further action will be taken on the complaint, that decision is final and not subject to appeal.

7. Determination of the Complaint

- 7.1 If it is decided that further action will be taken on the complaint, the Chair of the Academy Executive Committee shall establish a Complaint Determination Committee comprising:
 - a. a convenor who is a Fellow or Companion of the Society, but must neither be the Chair of the Academy Executive Committee nor a member of the Initial Investigation Panel; and
 - one or two other members who must be Fellows, Companions, Professional Members or Associate Members of the Society but must neither be the Chair of the Academy Executive Committee nor a member of the Initial Investigation Panel; and
 - c. one or two members who are not Members of the Society but who are considered to bring a perspective representative of the public interest.
- 7.2 The Committee must, before making its decision on a complaint
 - a. advise the complainant and the respondent of the process that the Committee intends to follow; and
 - b. provide the complainant with an opportunity to put all information about the complaint before the Committee; and
 - c. provide the complaint and all material relating to the complaint to the respondent (subject to confidentiality considerations in exceptional cases); and
 - d. give the respondent at least fifteen (15) working days to make submissions in writing or orally to the Committee; and
 - e. provide any material that the complainant has not had an opportunity to address to the complainant, and provide the complainant with an opportunity to respond.
- 7.3 In setting its process under Rule 7.2(a) the Committee may do any of the following:
 - a. make, or appoint a person to make, any enquiries it considers necessary:
 - b. engage counsel, who may be present at a hearing of the Committee, to advise the Committee on matters of law, procedure, and evidence:
 - c. request the respondent or the complainant or both to provide to the Committee, within a specified period of not less than 15 working days that the Committee thinks fit, any documents, things, or information that are in the possession or control of the person and that are relevant to the investigation:
 - d. take copies of any documents provided to it:
 - e. request that the respondent or the complainant appear before the Committee, at that person's own cost, on no less than 15 working days' notice:
 - f. receive any evidence it thinks fit:
 - g. request a person giving evidence to verify a statement by statutory declaration:
 - h. provide information to assist the complainant and the respondent to obtain counsel or other advocacy assistance:

- i. treat a complaint as having been withdrawn if, in the opinion of the Committee, sufficient information has not been provided by the complainant within a reasonable time to allow a proper investigation to take place.
- 7.4 The Committee may dismiss the complaint only if any one (or more) of the grounds set out in Rule 6.4(b) to (h) apply, or if, in the opinion of the Committee a breach has not been established in respect of any of the obligations, and if applicable clauses of the Code, identified in the decision of the Panel under Rule 6.9.
- 7.5 The intended decision of the Committee on whether to dismiss or uphold the complaint and the reasons for that decision shall be notified to both the respondent and the complainant. The complainant and the respondent shall be given the opportunity to make a written submission within thirty (30) days.
- 7.6 The Committee shall consider any submissions received under Rule 7.5 and shall finalise its decision.
- 7.7 The Committee must make its final decision on a complaint in accordance with the following:
 - the Committee must make its decision on the complaint as soon as practicable, but may delay making the decision until the outcome of any legal proceedings that may affect its findings is known; and
 - b. if the Committee is not unanimous, the decision of the majority of the Committee is the decision of the Committee (but dissenting members may record dissenting views); and
 - c. the Committee must give reasons in writing for its decision, or the decision of the majority, as the case may be.
- 7.8 The decision and the reasons for it shall be notified to the Academy Executive Committee, Council, respondent and complainant by the Chief Executive.
- 7.9 The decision of the Committee is final and not subject to appeal.

8. Determination of Penalties

- 8.1 Should the decision of the Committee be to uphold the complaint; the Committee shall prepare its intended decision on penalties which may include:
 - a. revoking the Member's Membership of the Society or suspending the Member's Membership for any period; or
 - b. requiring the Member to relinquish, or be suspended for any period from, any official positions within the Society; or
 - c. reprimanding or admonishing the Member; and
 - d. notifying all Members of the Society of the name of the Member concerned and the circumstances of the breach; and

- e. notifying any relevant professional body of the name of the Member concerned and the circumstances of the breach; and
- f. publication of the name of the Member concerned and the circumstances of the breach.
- 8.2 In Rule 8.1 "publication" includes but is not limited to placing a notice in electronic newsletters or other written publications of the Society, placing a notice in the media, for example in a newspaper, or sending a notice to regulators or other parties within whose domain of activity the subject matter of the complaint falls.
- 8.3 In determining its intended decision on penalties the Committee must take into account the gravity of the breach, any relevant mitigating factors, the need for protection of the public interest, and the benefit of informing other scientists, technologists or humanities scholars of the breach, and it may also seek the advice of the Council.
- 8.4 The Committee, at its sole discretion, may allow the complainant and the respondent an opportunity, not exceeding fourteen (14) days, during which to make submissions relating to penalties.
- 8.5 The Committee must inform the Council of its intended decision on penalties, and must allow reasonable time for the Council to provide any advice prior to finalising its decision.
- 8.6 The Committee must make its decision on penalties (which may only be selected from those set out in Rule 8.1), in accordance with the following:
 - a. the Committee must make its decision as soon as practicable, but may delay making the decision until the outcome of any legal proceedings that may affect its findings is known; and
 - b. the Tribunal must have regard to any advice from the Council in regard to the intended penalties; and
 - c. if the Committee is not unanimous, the decision of the majority of the Committee is the decision of the Committee but dissenting members may record dissenting views; and
- 8.7 The Chief Executive must, as soon as practicable after receiving the decision of the Committee
 - a. notify the Council, Academy Executive Committee, complainant and the respondent of the decision on penalties; and
 - b. implement any decision that requires action by the Society, but must allow at least twenty-eight (28) days after notifying the complainant and the respondent before implementing the penalties.
- 8.8 The decision of the Committee on penalties shall be final and not subject to appeal.

9. Publication for Learning Purposes

9.1 If, in the view of Academy Executive Committee or the Council, dissemination of a summary of the matters raised in the complaint and the decision of either the Initial Investigation Panel or the Complaint Determination Committee would be beneficial to other scientists, technologists or humanities scholars, the Academy Executive Committee or the Council, as is appropriate, may order that such a summary be published in such manner that does not identify the complainant or respondent. In such circumstances both the respondent and complainant shall be allowed a period, not exceeding fourteen (14) days to comment on the proposed text prior to publication.

10. Costs

10.1 The Society is not liable for any expense by way of travelling, engagement of counsel, calling of any witness or in any other matter connected with either a Panel's or a Committee's consideration of any matter under these Rules, whether incurred by a Member whose conduct is under investigation or by any person or persons who make a complaint.

11. Appointments, delegated functions and powers

- 11.1 The Council delegates to the Academy Executive Committee Chair the powers to implement these Rules, including, but not limited to:
 - a. appointing a person to a role under these Rules; or
 - b. revoking a person's appointment to a role under these Rules by written notice to him or her; or
 - c. reconstituting any body of persons appointed under these Rules by written notice.
- 11.2 The Council delegates to the Complaint Determination Committee the powers to decide penalties.
- 11.3 A person appointed under these Rules may resign the appointment by written notice to the Chief Executive.
- 11.4 Should a person appointed to a role by these Rules have a material conflict of interest, that person must resign from the role immediately the conflict is identified and the Chair of the Academy Executive Committee shall appoint a substitute person to undertake or continue the role.
- 11.5 In the event that the Chair of the Academy Executive Committee has a material conflict of interest, or is otherwise unavailable, the President of the Society shall appoint a person to undertake the role of the Chair in regard to those complaints for which the conflict exists, or for the period of time during which the Chair is unavailable.

11.6 All decisions made by a person in accordance with these Rules prior to resigning from a role may not be changed by the substitute.

12. General provisions about procedures

- 12.1 Every person or body appointed under these Rules must
 - a. observe the rules of natural justice; and
 - b. give reasons for its decisions.
- 12.2 Except as otherwise provided in any other rules of the Society or these Rules, a person or body of persons appointed under these Rules may regulate the person's or body's own procedure as it thinks fit.

1. Interpretation

1.1 General Provisions

- 1.1.1 These Bylaws are to be read and interpreted in conjunction with the Act, the Rules, the Code of Professional Standards and Ethics ("the Code") and the Procedures for Handling Complaints under the Code (the "Complaints Procedures").
- 1.2.2 In cases where conflict arises, the Act takes precedence over the Rules, and the Rules take precedence over the Bylaws, Code and the Complaints Procedures.
- 1.1.3 In these Bylaws, references made to sections are references to sections in the Act.
- 1.1.4 Any person undertaking activities under these Bylaws must declare any actual, perceived or potential conflict of interest. The chair of the relevant panel or Committee shall rule on the extent to which the person may participate in the activity for which the conflict is relevant.
- 1.1.5 No person who holds office on the Council or in a decision-making or recommending body under these Bylaws shall be eligible for consideration for a Fellowship, Award or Medal (as the case may be) for which that body forms part of the decision making process.

1.2 Defined Terms

- 1.2.1 In these Bylaws, unless the context requires otherwise, terms that are defined in s2 of the Act bear the same meaning ascribed to them in s2 of the Act.
- 1.2.2 In addition to the terms defined in the Act, the following definitions are provided for the purpose of interpreting these Bylaws:
 - Academy means the group of members comprising all Fellows and Honorary Fellows;
 - Annual General Meeting means a meeting held annually to which all Fellows are invited;
 - Chief Executive means the Chief Executive Officer appointed under the Schedule to s36 of the Act;
 - Emeritus status means a status in which a Fellow who has contributed to the activities of the Academy, but is no longer able to contribute, is entitled to have continued recognition as a Fellow;
 - Evaluation Panel means a group of Fellows appointed to undertake the role of evaluating nominations for Fellowship within a discipline-based domain;
 - Executive Officer means an employee of the Society delegated by the Chief Executive to support the Academy Executive Committee;



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• Fellowship Selection Committee means a committee of Fellows appointed to decide the list of Fellows to be recommended for election to Fellowship

2. Fellows

- 2.1 The maximum number of Fellows may be restricted to a number set from time to time by the Academy Executive Committee, taking into account any advice by the Council. [s10(2)]
- 2.2 In setting any maximum number of Fellows and determining the actual number of Fellows, the Academy Executive Committee may exclude those Fellows holding emeritus status from the count.
- 2.3 The Academy Executive Committee may restrict the number of Fellows elected each year, after consultation at an Annual General Meeting and taking into account both the difference between the maximum and actual number of Fellows, and the number of highly meritorious nominations in recent years.
- 2.4 No person shall be eligible to be elected as a Fellow unless he or she:
 - a. is a citizen or permanent resident of New Zealand; and
 - b. has been a New Zealand resident for at least three years during his or her career; and
 - c. normally spends at least six months in New Zealand each year.
- 2.5 The Academy Executive Committee shall develop and maintain criteria against which nominations for election as a Fellow shall be judged. In setting the criteria the Academy Executive Committee shall take into account differences between different disciplines in evaluating excellence in research and scholarship, and the need to ensure diversity amongst the Fellowship.
- 2.6 The Academy Executive Committee shall set out the requirements for a nomination to be valid, these requirements including a nomination statement addressing the criteria, supporting information, the names and contact details of referees and the consent of the nominee.
- 2.7 Each nomination must be made by two eligible persons, those eligible being Fellows, senior officer bearers of Branches, Constituent Organisations, people holding Fellowships of major national or international professional bodies and learned society organisations, and those holding research or executive leadership roles in research organisations.
- 2.8 The consent of the candidate must be obtained in writing by the nominators and shall include both willingness to be nominated and willingness, if elected a Fellow, to comply with the Act and Rules of the Society and the Bylaws of the Academy Executive Committee.
- 2.9 Nominations shall stand for a period of five years, but further evidence in support of the nomination may be added from year to year.
- 2.10 In the event of a nominee losing eligibility under Bylaw 2.4, his or her nomination will lapse but he or she shall normally be eligible for nomination for Honorary Fellowship.

- 2.11 If the candidate has not been elected within the five year period after nomination he or she shall not be re-nominated for a period of three years. Nevertheless, the Academy Executive Committee may allow a nominee or group of nominees to be re-nominated earlier if, in its opinion, such waiver could assist in increasing the diversity of the Fellowship.
- 2.12 The Academy Executive Committee shall decide the number and composition of Evaluation Panels, define the discipline-based domain for each, and set out a procedure to be followed by each such Panel in developing recommendations to be considered by the Fellowship Selection Committee.
- 2.13 The Academy Executive Committee shall define the composition and procedures of the Fellowship Selection Committee.
- 2.14 The Academy Executive Committee may delegate authority to the Executive Officer to appoint members of Evaluation Panels or the Fellowship Selection Committee.
- 2.15 The Fellowship Selection Committee shall consider the recommendations of the Evaluation panels in order to prepare a consolidated list of candidates to be recommended to the Academy Executive Committee for election to the Fellowship, the number of recommended candidates being less than or equal to any maximum set in Bylaw 2.3.
- 2.16 The Academy Executive Committee shall consider the list and make elections to Fellowship [s10(1)].
- 2.17 The names of the newly elected Fellows shall be reported at the Annual General Meeting.
- 2.18 From time to time, under very exceptional circumstances, the Academy Executive Committee may consider it desirable to elect to the Fellowship an eminent person who has made an outstanding contribution to the nurture and support of science, technology, or the humanities in New Zealand, or the Society, and whose election to the Fellowship the Academy Executive Committee believes would benefit the Academy and the advancement of science, technology, or the humanities.
- 2.19 A nomination to be considered under Bylaw 2.18 must be supported by three Fellows and must have the unanimous approval of the Academy Executive Committee for the recommendation of election to proceed.
- 2.20 No more than two persons may be elected under Bylaw 2.18 in any three consecutive years.
- 2.21 The Academy Executive Committee shall evaluate any notice from a Fellow seeking transfer to emeritus status. Emeritus status shall normally only be available to Fellows who, in the opinion of the Academy Executive Committee, are no longer able to contribute to the activities of the Academy.
- 2.22 Each Fellow who does not hold emeritus status shall pay to the Royal Society of New Zealand an annual subscription. Subscription fees shall be set by the Council under s26(2)(b), rather than by the Academy Executive Committee under s39(2)(a).
- 2.23 If a Fellow fails to pay his or her subscription for two consecutive years, and does not remedy the situation within three months, or such other time as the Academy Executive Committee

may decide, the Academy Executive Committee may recommend to the Council that the Fellowship be revoked [s18(2)].

- 2.24 The Academy Executive Committee may provide advice to the Council on the level of the subscription and any rebates that may be applied to any particular Fellow or group of Fellows.
- 2.25 The Society shall keep a register of Fellows of the Society, with the dates of their election, their degrees, honours and titles, in which shall be recorded the death of any Fellow, and the names of the deceased Fellows thus recorded shall be notified at the next succeeding Annual General Meeting.

3. Honorary Fellows [s17]

- 3.1 The total number of Honorary Fellows shall be at the absolute discretion of the Academy Executive Committee.
- 3.2 The number of Honorary Fellows elected in any one year shall be decided by the Academy Executive Committee.
- 3.3 The Academy Executive Committee shall prescribe criteria for election as an Honorary Fellow which shall be related to research or scholarly excellence in his or her discipline, and the nature of his or her association with New Zealand.
- 3.4 Nominations for Honorary Fellowship may be made by groups of three or more Fellows, or in the case of Constituent Organisations, Regional Constituent Organisations and other scientific organisations, by two Fellows and one other person who shall be a senior office-bearer of that organisation.
- 3.5 Each nomination shall be accompanied by a completed nomination form, curriculum vitae, list of research outputs and a supporting statement, as well as proposing the appropriate Evaluation Panel to consider the nomination. In exceptional circumstances the requirement for part of the above documentation may be waived by the chair of the Academy Executive Committee.
- 3.6 Nominations shall stand for a period of two years, but further evidence in support of the nomination may be added in the second year. If the candidate has not been elected within that period he or she shall not be re-nominated for a period of three years.
- 3.7 Nominations shall be referred to the appropriate Evaluation Panel which shall present its evaluation as to whether the criteria are met to the Fellowship Selection Committee.
- 3.8 The Fellowship Selection Committee shall prepare a list of recommended candidates for election to Honorary Fellowship and present that list to the Academy Executive Committee.
- 3.9 The Academy Executive Committee shall consider the list and make elections to Honorary Fellowship.
- 3.10 The names of those elected to Honorary Fellowship shall be reported to the Annual General Meeting.

4. Transfer between Honorary Fellow and Fellow

- 4.1 An Honorary Fellow who through change in circumstance is now, and intends to continue spending at least six months per year, in New Zealand may apply to the Academy Executive Committee for transfer to Fellow.
- 4.2 A Fellow who through change in circumstance is no longer spending nor intending to spend at least two months per year in New Zealand may apply to the Academy Executive for transfer to Honorary Fellow.
- 4.3 The Academy Executive Committee may define criteria for transfer between Honorary Fellow and Fellow, or vice versa. Such criteria may take into account any differences between the criteria for Fellow and Honorary Fellow that existed at the time of first election of the person concerned, the likelihood of the person being able to contribute to the affairs of the Academy, and whether the person has been previously transferred.
- 4.4 The Academy Executive shall, at its sole discretion, decide whether to approve an application for transfer.

5. Medals and Awards

- 5.1 The Academy Executive Committee shall develop and maintain criteria for the selection of recipients for the Medals and Awards of the Society given for excellence in research and scholarship. In setting the criteria it shall take into account the need for medals and awards to be accessible to a wide diversity of researchers and scholars.
- 5.2 The Academy Executive Committee may limit eligibility for any Medal or Award to ensure that no person is recognised more than once by the Society for what is substantially the same contribution to research or scholarship.
- 5.3 Each year, the Academy Executive Committee shall appoint the required Medals and Awards panels.
- 5.4 The Academy Executive Committee may delegate authority to the Executive Officer to appoint members of Medals and Awards panels.
- 5.5 Each Medals and Awards selection panel shall present its recommendations to the Academy Executive Committee for approval. Before doing so, each such panel must ensure that the recommended recipient meets the requirements of Bylaw 5.2.
- 5.6 Unless the Academy Executive Committee decides there are extraordinary circumstances to justify an exception, there shall normally be a single winner of each Award or Medal in a given year.
- 5.7 Unless the Academy Executive Committee decides there are extraordinary circumstances to justify an exception, no person shall be entitled to be awarded more than one medal or award in a given year.
- 5.8 The Academy Executive Committee shall be the final arbiter on the selection of Medals and Awards of the Society.

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6. Proceedings of Academy Executive Committee

- 6.1 The composition of the Academy Executive Committee is set out in Rule 5.2 of the Society.
- 6.2 In accordance with Rule 6.5, and as soon as possible after the commencement of each new Academy Executive Committee, the Committee may co-opt up to an additional 3 Fellows who do not serve concurrently on the Royal Society of New Zealand Council, to ensure sufficient diversity of representation across the Fellowship. Each Fellow co-opted shall be for a term of at least two (2) but no more than three (3) years.
- 6.3 The Chief Executive shall appoint an Executive Officer for the Academy Executive Committee. That Executive Officer shall act as secretary to the Committee.
- 6.4 The Academy Executive Committee shall normally meet at least four times a year.
- 6.5 The quorum at each Academy Executive Committee meeting shall be 50 percent or more of the number eligible to attend.
- 6.6 At meetings of the Academy Executive Committee each member shall be entitled to one vote; any matter on which the voting is tied shall be deemed to be lost.
- 6.7 Upon receipt of a request signed by not less than two members of the Academy Executive Committee and stating clearly the business to be transacted, the Chairperson of the Academy Executive Committee shall, within seven days, call a special meeting of the Academy Executive Committee, and at such a meeting no business other than that set forth in the request shall be introduced.
- 6.8 In the event of the absence or incapacity of the Chairperson of the Academy Executive Committee, one of the other Vice-Presidents, or failing that the next longest-serving member of the Academy Executive Committee shall serve as its acting Chairperson.

7. Amendment of the Bylaws

- 7.1 The Academy Executive Committee may propose changes to the Academy Bylaws at any time.
- 7.2 Any proposal for change, and the accompanying rationale shall be circulated to all members of the Academy. Prior to a date that shall be set by the Academy Executive Committee, but shall not be less than fourteen (14) days nor longer than thirty (30) days from the date on which the proposal is circulated, those Fellows who do not hold emeritus status shall be entitled to register with the Executive Officer their approval, or disapproval of the proposal.
- 7.3 In the event that the proposal receives a majority of at least two thirds in support of its approval through the process set out in bylaw 7.2, the Academy Executive Committee and the Council must proceed to ratify the proposal as soon as reasonably possible.
- 7.4 New bylaws come into effect immediately after their ratification by the Council and Academy Executive Committee.

7.5 Any activity that commenced under the previous bylaws may be completed under either the new or previous bylaws, whichever is deemed by the Academy Executive Committee to be more appropriate to the particular activity.

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To: Convenors and Members of Royal Society Te Apārangi Fellowship Evaluation Panels re Fellowship Selection 2018

The Academy Executive Committee has supported the **election of up to 35 Fellows in 2018**. This higher than normal maximum is specifically to address issues of diversity and under-represented groups, as part of a Centenary initiative to elect more women while upholding standards of excellence. The goal is to induct up to 20 female Fellows through this year's process.

The Academy Executive Committee has confirmed 6 Fellowship Evaluation Panels for 2018:

- Biological and Environmental Sciences
- Human and Behavioural Sciences
- Humanities
- Physical, Earth and Mathematical Sciences
- Medical and Health Sciences
- Technology, Applied Sciences and Engineering

If any of the discipline-based panels has difficulty assessing a particular nomination, then the nomination can be referred to the Academy Executive Panel for assessment (see below).

Diversity

The Society is committed to following best practice in upholding excellence and diversity across its activities – this includes diversity of:

- gender, gender identity and sexual orientation
- ethnicity
- employment context (allowing equal opportunities for those employed at universities, CRIs, independent research associations and business organisations, and those doing voluntary work)
- accessibility (ensuring access to people with disabilities).

As part of following best practice in some other academies, each panel teleconference will probably be joined by a diversity observer whose role it is to monitor the discussion for any indication of unconscious bias and draw that to the attention of the panel convenor. You are encouraged to read the 4-page pamphlet on Unconscious Bias and have a look at the video on unconscious bias at https://royalsociety.org/topics-policy/publications/2015/unconscious-bias/.

Selection criteria

Science

(a) intellect; scholarship; international reputation; and peer recognition;(b) development and progression of



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research programme; contribution to the field; and, in appropriate cases, the impact of the research.

It is expected that these criteria will be met in large part by outstanding publications, but may be supported by evidence of the impact of the research.

Technology, applied science and engineering

(a) intellect; scholarship; international reputation; and peer recognition;
(b) intellectual achievement; innovation; and an ability to creatively synthesise and critically interpret knowledge in a way that has impact on the field.

It is expected that these criteria will be demonstrated via a combination of publications (which may include commissioned investigative reports), intellectual property creation, impact of the research, peer- recognition and end-user recognition, such recognition normally being wider than solely at a national level.

Humanities

(a) intellect; scholarship; international reputation; and peer recognition; depth of knowledge; and originality of thinking.

(b) development and progression of scholarly programme; and, in appropriate cases, the impact of the research.

It is expected that these criteria will be demonstrated via outstanding publications such as monographs, articles, and chapters in books. In appropriate instances publications may be supported by creative outputs of equivalent standing and investigative nature.

Social sciences

(a) intellect; scholarship; international reputation; and peer recognition

(b) development and progression of research programme; and, in appropriate cases, impact of the research.

It is expected that these criteria will be demonstrated via outstanding publications which may include commissioned investigative reports, but may be supported by peer-recognition and end-user recognition, such recognition normally being wider than solely at a national level.

Primary Criteria for Advancement Cases

Relevant criteria are drawn from the following list:

- Major changes to practice in a professional community, at least at a national level;
- Major changes in relevant public policy and/or government investment or operational strategy, for example in health, social policy, environmental protection, conservation, education, justice or emergency management;
- Successful promulgation of new products, processes, IP, or services based on the innovation/new knowledge;
- Major cultural or social change within communities of significant size;
- Major environmental change.

It is expected that these criteria can be evidenced in a variety of ways.

Relevant indicators for impact

Relevant indicators for impact would be drawn from the following list:

- Significant changes in the way a body of knowledge (including Mātauranga Māori) is understood, organised and used (e.g. as a result of challenging previous conventional wisdom);
- Lasting impact of citation;
- Advancement of Mātauranga Māori;
- Development of new methods, concepts and theory that has advanced research practice in the relevant discipline.
- Significantly increased investment in the research programme over an extended period of time by potential technology transfer partners or end-users, including Māori and Pasifika entities;
- Major changes to practice in a professional community, at least at a national level;
- Major changes in relevant public policy and/or government investment or operational strategy, for example in health, social policy, environmental protection, conservation, education, justice or emergency management;
- Successful promulgation of new products, processes, IP, or services based on the research.

For each discipline the relevant impact factors among these will vary.

Fellowship evaluation process to be followed

Each panel should take the following steps to ensure that the Fellowship evaluation process is completed in an orderly fashion.

A face-to-face meeting of all Convenors was held in Wellington on 28 March where the Fellowship evaluation process was clarified and unconscious bias considered. Convenors are asked to discuss the outcome of the meeting with their panellists.

1. Preparation of short list of nominees

This is the first step required to be completed by each panel no later than Thursday, 31 May.

Panel convenors should communicate with members as soon as possible after receipt of the nominations as each panel is required to prepare a short list of nominations which will be considered in greater detail at panel teleconferences. Such short listing is a demanding process and convenors must ensure that all nominations are assessed carefully by each panel member and that due consideration is given to the selection criteria, impact indicators, and diversity which are listed above. Those not included in the short list will take no further part in the selection process in 2018.

The Evaluation Panels are asked to access the nomination documents (nominators/nominees are given the opportunity to provide updated information after the first year), and decide on a short-list **of up to fourteen** nominees. They should NOT be prioritised. The short-listed nominees will be discussed further bearing in mind the relevant selection criteria, impact indicators and diversity (see attached chart on Fellowship nomination and evaluation process to see which criteria should be addressed).

Should you decide to use a scoring system to compile your short list, we encourage you to use "should" (weight = 2) "could" (weight = 1) and "not now" (weight = 0) if scoring nominees to aid evaluation. This scoring is used

by the final Fellowship Selection Committee. It also assists you to establish whether a nominee meets the minimum standard.

An Academy Executive Panel has been established to consider any nominees who fall outside the expertise of a particular panel. The panel may be expanded to give expert advice as needed for specific issues. It has been agreed that a small specialist Advisory Group to the Academy Executive Panel be set up to give the Panel expert advice on the research strengths of Māori nominated for Fellowship, especially nominees whose research articulates concepts, principles and understandings are embedded in Te Ao Māori.

If required, the Academy Executive Panel will have a teleconference call in June, to assess whether or not the nominations should be considered further, and therefore whether Independent Referees' Reports should be sought. If so, the Academy Executive Panel will be asked to suggest the names of independent referees.

Please forward the name of any nominee your panel is unable to assess to Gill Sutherland (<u>gill.sutherland@royalsociety.org.nz</u>) no later than **Wednesday**, **16 May**. Please note that if you request that a nomination be sent to the Academy Executive Panel at your teleconference call, we ask that you provide names and contact details of independent referees.

Once the short list of candidates has been received, the Gill Sutherland will provide access to the relevant referees' reports.

Please note: All current nominees have been given the opportunity to update their nominations.

Please **do not** seek external comments on the nominations. If you wish to discuss a nomination, you should contact the convenor of your panel.

2. Selection of Highly Recommended Candidates

Teleconference calls will be held in late June/early July and Gill Sutherland will take the Minutes, which will include an unranked list of highly recommended nominees. Please note that equal consideration must be given to all short listed nominees. Panels will be able to highly recommend up to eleven nominees. You should not highly recommend any nominee unless the panel considers that nominee meets the standard for election as a Fellow.

Following the teleconference meeting, the convenor of each panel is required to present a written case of not more than 500 words for each highly recommended nominee. These may be prepared by panel members, but must be forwarded to Gill Sutherland by the panel convenor. Please note that evaluation panellists and Fellowship Selection Committee members are looking for clear evidence of excellence in research and scholarship, not only in such activities as published papers and invited lectures, but also via impact through research leadership and facilitating the uptake of research.

The Fellowship Selection Committee places emphasis on independent references for each highly recommended nominee. When you have decided on your highly recommended nominees you must provide, as soon as possible thereafter, the name, address and personal/work (NOT generic) email address of **FIVE** independent referees for each highly recommended nominee. At least **ONE** of these must be from overseas.

When suggesting an independent referee, please ensure he/she is not also a nominator, a member of a Fellowship Evaluation Panel (see list attached), a current nominee, that he/she is not listed by the nominee as a referee, and has not been/is a recent or current collaborator, close colleague, student, close relative or friend

of the nominee; or work in the same institution as the nominee; or hold or have held a position of responsibility in respect of the nominee (*such as Chief Executive, Head of institution or department, manager, supervisor, or mentor*); or have any other conflict of interest (e.g., major disagreements or conflict with the nominee in the published literature).

A truly objective reference will serve a nominee's case better than one that is questioned by the Fellowship Selection Committee.

Normally, referees will not have published with nominees in the last few years, but if they have, the referees will be asked to explain the context of the relationship. Some degree of collaboration is acceptable, provided it is not recent, overly frequent or current.

Please note:

- If the independent referees suggested are NOT independent (per the guidelines above) the panel will be contacted for additional suggestions.
- Please only suggest one independent referee per institution/organisation.

Please do not ask the nominee for names of independent referees. Please do not approach a person and enquire if he/she is willing to be an independent referee. This will be done by the Academy Executive.

Should your panel **not require** a teleconference call, the Convenor must provide the names of the highly recommended nominees and written comments on why these nominees are highly recommended. This will be forwarded to the Fellowship Selection Committee.

3. Fellowship Selection Committee Meeting

The Fellowship Selection Committee will meet **on 23 October in Wellington** to recommend to the Academy Executive Committee those to be elected in 2018, and consists of the Academy Executive Committee plus other panellists appointed by the Academy Executive Committee to ensure that there is appropriate coverage of the disciplines represented within the Fellowship. The panels' written cases for each highly recommended nominee, along with the entire nominations, and references (both from those listed on the nomination forms and the independent referees) will be considered by the Fellowship Selection Committee.

Your Discipline-based Evaluation Panel is also asked to choose a panel member to represent your discipline at the final Fellowship Selection Committee meeting as this has been found to greatly inform discussion of nominees' attributes. The representative may be the Discipline-based Fellowship Evaluation Panel Convenor or a Panel member.

4. Honorary Fellowship Nominations

If your panel receives nominations for Honorary Fellowship, please review these at your teleconference meeting and include the panel's recommendations along with those for Fellowship. Consideration shall be given to each candidate's sustained research excellence **and to his or her association with New Zealand**.

Following the teleconference meeting, the convenor of each panel is required to present a written case of not more than 500 words for each highly recommended nominee. These may be prepared by panel members, but must be forwarded to the Academy Executive Committee (via the Academy Executive) by the panel convenor. Please note that selection panellists and Fellowship Selection Committee members are looking for clear evidence of excellence in research and scholarship, not only in such activities as published papers and invited lectures, but also via impact through research leadership and facilitating the uptake of research.

Teleconference Calls

Teleconference calls for individual panels will be confirmed shortly for dates in late June/early July.

Thank you very much for agreeing to be involved in this important Academy work. Should you have any suggestions on the Fellowship Selection Process, please let me know. We are keen to refine and improve the process where appropriate.

I wish you well in your Fellowship deliberations; it is a time-consuming task particularly this year with the increased number of nominations to be assessed by each panel and I appreciate the assistance you all give.

Kind regards

Gill Sutherland Director – Academy Operations

15 April 2018

04 473 9444 L6, 40 Taranaki Street Wellington 6011 PO Box 12 241 Wellington 6144



18 December 2018

Andrew Cleland FRSNZ Chief Executive Royal Society of New Zealand PO Box 598 WELLINGTON 6140

By email: <a>andrew.cleland@royalsociety.org.nz

Dear Andrew

NEW ZEALAND APPLICATION TO THE COUNCIL OF ACADEMIES OF ENGINEERING AND TECHNOLOGICAL SCIENCES (CAETS)

Engineering New Zealand is the single professional institution for all disciplines of engineering in New Zealand. We have over 22,000 members drawn from across the range of engineering disciplines. We have a mutual interest with the Royal Society Te Apārangi, which is this country's academy for science, technology and the humanities. For over 40 years, it has been electing engineers as Fellows.

We have discussed our respective roles with the Society. The Society as the academy elects Fellows for exceptional intellectual achievement. We elect Fellows on broader grounds including professional achievement. We both have roles in the policy space. The Society takes an independent outlook to explain evidence to governments and the public; we increasingly look to raise the engineering perspective on issues that matter to New Zealanders as well as issues that matter to engineers. As the professional body we are also involved in a number of other areas. These include professional issues including standard setting and accountability, continuing professional development and engineering leadership generally.

We understand that the Society has made considerable efforts over the last four years to embrace intellectual endeavour across all domains. We note it has now recognised structurally that technology, applied sciences and engineering (TASE) do not nest well with mathematical, physical and biological sciences. They have committed to embrace TASE, and agreed that future Fellows can be elected for their role in the advancement of technology as an alternative to distinction in research.
The Society has committed to ongoing dialogue with us and the New Zealand Council of Engineering Deans. We both recognise that benefits could flow from the dual recognition of engineers by both the professional body and by the Society. We also see some useful links between our own role in World Federation of Engineering Organisations and the role of the Society if it were admitted to CAETS.

For those reasons we support the admission of Royal Society Te Apārangi to CAETS.

Yours sincerely

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Susan Freeman-Greene Chief Executive