# The Marsden Fund Te Pūtea Rangahau a Marsden Results 2023

## Summary

The Marsden Fund Council has recommended funding amounting to $83.591 million (excl. GST) over the next three years for the 2023 funding round. In all, 123 new proposals have been selected. The list of recommendations has been approved by the Council of the Royal Society Te Apārangi.

Key points:

- 123 new proposals have been selected for funding supporting 76 Standard proposals and 47 Fast-Start proposals — with an allocation of $83.591 million (excl. GST) over three years.
- Interest in the Marsden Fund has declined this year compared with historic averages (circa 1100 proposals). The Fund received 922 proposals (593 Standard, 323 Fast-Start and 6 Marsden Fund Council Award proposals), and similar to last year's 902 applications. Unfortunately, we do not have a rationale for this decline.
- The overall success rate for applicants is 13.3% this year, compared to 12.6% last year and 10.4% the year before that. The success rate for Standard applications is 12.8% and for Fast-Start applications, it is 14.6%.
- Universities will receive 92.7% of the funding for new proposals, similar to the 90.5% last year. The University of Auckland, University of Otago, and Te Herenga Waka University of Wellington are the strongest performers with 31 proposals, 27 proposals, and 19 proposals funded respectively.
- The overall proportion of new funding going to CRIs is 5.7%. For the previous six years, it had averaged 5.7% but has shifted by several percent from year to year.
- The representation of women and Māori as Principal Investigators on successful proposals (55.4% and 8.8%, respectively) is greater than their representation on the preliminary proposals (40.9% and 5.7%, respectively).
- This year, compared to 2022, there were no disruptions to the funding round processes due to the COVID-19 pandemic. Contingency planning and lessons from the past two years ensured the Fund maintained a fair, robust and defensible process.

## The Council's Mission Statement

*To drive world-class research in New Zealand by supporting and incentivising excellent researchers to work on their best and boldest ideas and to connect internationally, leading to new knowledge and skills with the potential for significant downstream impact for New Zealand*

## Objectives of the Fund

The primary objectives of the Marsden Fund are to:

- Enhance the quality of research in New Zealand by creating increased opportunity to undertake excellent investigator-initiated research; and
- Support the advancement of knowledge in New Zealand, and contribute to the global knowledge base.

The secondary objectives of the Marsden Fund are to:

- contribute to the development of advanced skills in New Zealand including support for continuing training of post-doctoral level researchers and support for the establishment of early careers of new and emerging researchers; and,
- contribute in the long-term to economic, social, cultural, environmental, health or other impacts for New Zealand.

## The Marsden Fund Panels

All areas of research are covered by the ten panels shown below. Each panel consists of a Convenor, who is a member of the Marsden Fund Council, plus six to nine researchers representing different areas of research within the panel's definition. Seven of the ten panels have at least one Australian researcher, to give an international perspective.

**Biomedical Sciences (BMS)** – research related to human health and disease in: physiology, pathology, pharmacology, molecular biology, genetics, cell biology, microbiology; neurobiology (including animals as a model species for humans); human genomics and related bioinformatics.

**Cellular, Molecular and Physiological Biology (CMP)** – studies related to understanding the activities that occur in cells and tissues, and their integration within living organisms across the biological, agricultural and veterinary and biochemical sciences. This includes: plant physiology; animal physiology; cell biology; plant and animal genetics; molecular biology and molecular genetics; functional genomics and related bioinformatics; microbiology excluding microbial ecology; animal and plant pathology.

**Ecology, Evolution and Behaviour (EEB)** – studies related to the interrelationships between organisms and their environment, evolution and behaviour. This includes: animal, plant and microbial ecology; biogeography; biodiversity; phylogenetics; systematics and evolution; population biology and genetics; animal behaviour; physiological plant ecology; biostatistics and modelling.

*Note that proposals seeking to establish the molecular basis of processes or traits are better sent to CMP or BMS panels, unless they materially concern the evolution of those processes or traits.*

**Economics and Human & Behavioural Sciences (EHB)** – including: economics; psychology (experimental, cognitive, neuro-); cognitive science; cognitive linguistics; archaeology; biological anthropology; business studies; commerce; management studies; marketing; communication science and demography.

**Engineering and Interdisciplinary Sciences (EIS)** – including: fundamentals of engineering (biomedical, bioprocessing, civil, chemical, electrical, electronic, environmental, materials, mechanical and robotics); and cross-disciplinary research relating to engineering.

**Earth Sciences and Astronomy (ESA)** – including: geology; geophysics; physical geography; oceanography; hydrology; meteorology; atmospheric science; earth sciences; astronomy and astrophysics; also cross-disciplinary topics which include substantial components in some of these areas.

**Humanities (HUM)** – including: English; languages; history; religion; philosophy; law; classics; linguistics; literature; cultural studies; media studies; art history; film.

**Mathematical and Information Sciences (MIS)** – including: pure mathematics; applied mathematics; statistics; operations research; logic; computer science; information systems; and software engineering.

**Physics, Chemistry and Biochemistry (PCB)** – including: materials science; physics; chemistry; biophysics, chemical biology and biochemistry.

**Social Sciences (SOC)** – including: sociology; Māori studies; indigenous studies; sociology; social, developmental, organisational, community and health psychology; social, cultural and human geography; social anthropology; education; urban design and environmental studies; public health; nursing; public policy; political science; socio-linguistics; architecture.

The panels used the criteria of the Fund as a basis for their assessment. Recommendations from these assessments went forward to the Marsden Fund Council which made the final decisions on who should be invited to submit a full proposal and, in the full round, which proposals would be recommended to the Council of the Royal Society Te Apārangi for contracting.

## The 2023 Selection Process

There were a number of changes to the Marsden Fund, following the 2017 *Assessment of Strategy and Management of the Marsden Fund* which have continued in the 2023 selection round. For more information on these changes, please refer to the latest updated version of the Marsden Fund Council's Investment Plan 2021-2024:

https://www.royalsociety.org.nz/what-we-do/funds-and-opportunities/marsden/about/marsden-councils-strategic-direction/

## *2023 Process*

The 2023 Marsden Fund process was run in two stages. The first stage, the preliminary round, closed on 20 February 2023 with the Executive receiving 922 applications (916 Expressions of Interest and 6 Marsden Fund Council Award proposals). The Expressions of Interest largely consisted of: a one-page description of the research; a roles and resources section; and curricula vitae for the Principal and Associate Investigators. The Expressions of Interest are submitted through an on-line portal system. Applicants self-select a single panel for their application.

### Changes in the Expression of Interest stage of the process due to the Cyclone Gabrielle[1]

With the arrival of Cyclone Gabrielle, along with widespread power outages and flooding in many areas of Aotearoa New Zealand, the secretariat anticipated disruption to researchers and research offices, especially in the north of the North Island. As a result, there was an extension of the application deadline for all Expressions of Interest by two working days, to noon on Monday 20 February 2023.

This was clearly communicated to all applicants who had registered an interest and to the research offices by email.

### Full Application stage

A total of 225 proposals were assessed in the full round. The full proposals were submitted by 21 June 2023 and sent to external referees for review. In 2023, the Council concluded that none of the six Marsden Fund Council Award proposals sufficiently met the criteria to send out to external referees. All referees were approved by members of the assessment panels. All applications received at least two reviews from referees and of the requested 675 referee reports, 664 were usable/available at the time of the panel meetings (98.3% of the target). Practically all of the referees were from countries other than New Zealand. Applicants were given one page to respond to each referee.

The ten assessment panels met over the period of 18 - 29 September 2023 to consider: the full proposals; referees' reports; and applicants' responses. Each panel is convened by a member of the Marsden Fund Council. Furthermore, the Marsden Fund Council had an additional representative present as an observer for all the panel meetings. Marsden Fund administration staff members were also present at each meeting to ensure that the prescribed processes were followed at all times and to take notes for the Convenors to use for feedback to the applicants. The panellists provide initial grades before the meeting and then discuss each proposal to create a final ranked list, for both Fast-Start and Standard proposals.

A predetermined amount of funding agreed by the Marsden Fund Council is available for each panel. The panel uses this amount to decide the number of Fast-Start and Standard proposals to be recommended to the Marsden Fund Council. The panel advises on any anomalous funding requests, with the recommended allocation of funding for each proposal decided by the panel Convenor and the Tumu Pūteau Maruārangi Director–Research Funding (based on the requested funding, the available funding, and the comments of the panel). The recommended funding amounts for

[1] https://www.royalsociety.org.nz/news/2023-marsden-fund-eoi-round-update/

Standard grants varied from 98.1% of the requested funds, to 100%. For Fast-Start grants, all were recommended for funding at the maximum amount ($120,000 p.a. excl. GST), and no funding request was cut. All funding recommendations have been approved by the Marsden Fund Council.

To minimise conflicts of interest, panel members are prevented from being Principal or Associate Investigators on any proposals submitted to the panel they sit on. Other conflicts of interest, such as panel members being colleagues, collaborators or close associates of applicants do arise. The Fund has a clear policy on how these conflicts are handled and, in all cases where a panellist was considered conflicted, they did not score the proposal and left the room while that proposal was discussed.

### *Marsden Fund Council Award*

The Marsden Fund Council Award attracted six applications in the 2023 round. The Marsden Fund Council considered these six proposals over a zoom conference call and at the May 2023 meeting. After considerable discussion, referenced to the assessment criteria for the Award, the Council decided that none of these proposals met the standard for the Marsden Fund Council Award in this instance.

### *Fast-Start Applications*

The Fast-Start programme is targeted at early career researchers, who are employed at New Zealand universities, Crown Research Institutes and other research organisations. The Fast-Start programme is designed to establish independent research and create research momentum for these individuals. The researchers eligible for the Fast-Start programme must have completed their PhD no more than seven* years ago (excluding illness), or 10* years ago if they commenced their research career before starting their PhD. In addition, they must not have been Principal Investigators on Marsden Fund contracts previously. The Fast-Start programme is for up to $120,000 p.a. (excl. GST) for research programmes lasting up to three years.

**In 2018, the Council introduced an eligibility extension of two years per dependent child for researchers who have been, or currently are, primary caregivers of dependent children*.

## Final Recommendations

A total of 922 applications were received in the preliminary round, of which 225 were considered at the full proposal stage.

The Marsden Fund Council has recommended 123 proposals to be offered funding (76 Standard applications and 47 Fast-Starts), at a cost of $83.591 million (excl. GST) over three years. The overall standard of these proposals was such that the Council is confident that the proposals selected are of excellent quality, which is expected of the Marsden Fund. In future years, the projected total of spending is $83.591 million (excl. GST), which represents spending within the limit of the amount received from the government.

The following point is noted about the recommendations.

1. **Conflicts of Interest**: A full account of the meetings was recorded by the Marsden Fund Executive, including a record of panellists in attendance and the written account of conflicts of interest. The Convenor, Marsden Fund Council representative and the Executive, instigated firm rigour of the selection process during the panel meetings.

The Marsden Fund Executive warrants that the process of assessment of all the proposals followed the guidelines written for the conduct of the Marsden Fund Council and the conduct of the assessment panel meetings.

Nāku noa, nā

Dr Mark Stagg
*Tumu Pūtea Maruārangi Director — Research Funding*
*Royal Society Te Apārangi*

# Appendix

## Number of applications by research area

The number of proposals by panel is given in Table 1. While overall 13.3% of the Expressions of Interest have been recommended for funding at the final stage, this percentage is not constant over all panels or categories as a change of just one proposal — attributed to either a Fast-Start or Standard award — in the number of successful proposals causes significant change in this percentage.

| | **EoIs** | | | **Full** | | | **Proposed Contracts** | | | **Success Rate** | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | FS | SD | Tot. | FS | SD | Tot. | FS | SD | Tot. | FS | SD | Tot. |
| Panel | | | | | | | | | | | | |
| BMS | 24 | 71 | 95 | 6 | 17 | 23 | 3 | 10 | 13 | 12.5% | 14.1% | 13.7% |
| CMP | 21 | 63 | 84 | 6 | 18 | 24 | 4 | 7 | 11 | 19.0% | 11.1% | 13.1% |
| EEB | 28 | 72 | 100 | 9 | 15 | 24 | 4 | 9 | 13 | 14.3% | 12.5% | 13.0% |
| EHB | 31 | 56 | 87 | 8 | 15 | 23 | 4 | 8 | 12 | 12.9% | 14.3% | 13.8% |
| EIS | 44 | 62 | 106 | 10 | 12 | 22 | 6 | 7 | 13 | 13.6% | 11.3% | 12.3% |
| ESA | 37 | 44 | 81 | 7 | 10 | 17 | 5 | 6 | 11 | 13.5% | 13.6% | 13.6% |
| HUM | 33 | 32 | 65 | 8 | 9 | 17 | 5 | 5 | 10 | 15.2% | 15.6% | 15.4% |
| MIS | 32 | 53 | 85 | 9 | 13 | 22 | 5 | 7 | 12 | 15.6% | 13.2% | 14.1% |
| PCB | 12 | 56 | 68 | 5 | 12 | 17 | 3 | 6 | 9 | 25.0% | 10.7% | 13.2% |
| SOC | 61 | 84 | 145 | 15 | 21 | 36 | 8 | 11 | 19 | 13.1% | 13.1% | 13.1% |
| MFC | | | 6 | | | 0 | | | 0 | | | 0.0% |
| **Total** | **323** | **593** | **922** | **83** | **142** | **225** | **47** | **76** | **123** | **14.6%** | **12.8%** | **13.3%** |

**Table 1:** Number of funded proposals by panel (and as a percentage of number of EOIs). For the purposes of clarity, the Marsden Fund Council Award has been presented as a panel (MFC) and is assessed by the Marsden Fund Council.

## Panel Allocation

| | 2021 | 2022 | 2023 | weighted | Allocation $m (excl. GST) | Actual $m (excl. GST) | Difference ($m) |
|---|---|---|---|---|---|---|---|
| **BMS** | 11.80% | 12.82% | 11.86% | 11.43% | 9.547 | 10.489 | -0.942 |
| **CMP** | 8.92% | 9.38% | 10.46% | 9.18% | 7.666 | 8.024 | -0.358 |
| **EEB** | 11.15% | 11.47% | 12.18% | 10.73% | 8.966 | 9.908 | -0.942 |
| **EHB** | 10.70% | 10.19% | 9.21% | 8.87% | 7.408 | 8.183 | -0.775 |
| **EIS** | 10.79% | 9.13% | 11.59% | 10.04% | 8.386 | 8.746 | -0.360 |
| **ESA** | 9.12% | 9.79% | 8.54% | 8.48% | 7.085 | 7.444 | -0.359 |
| **HUM** | 7.17% | 6.88% | 4.97% | 5.60% | 4.674 | 5.093 | -0.419 |
| **MIS** | 8.02% | 8.06% | 7.64% | 7.22% | 6.034 | 6.708 | -0.674 |
| **PCB** | 7.17% | 8.62% | 8.93% | 7.62% | 6.365 | 6.726 | -0.361 |
| **SOC** | 15.17% | 13.65% | 14.61% | 13.65% | 11.406 | 12.270 | -0.864 |
| **MFC** | 3.64% | 0.00% | 2.69% | 7.18% | 6.000 | 0.000 | 6 |
| **TOTALS** | | | | **100%** | **83.536** | **83.591** | **-0.055** |

**Table 2:** The funding distributed across panels, as a weighted percentage, is calculated from modelling the historic and current demand (using the allocation model approved by the Marsden Fund Council August 2015).

## Funding Distribution by Sector

The distribution of funding between the Universities, Crown Research Institutes and other research institutes and individuals is shown in Table 6.

| | Percentage of funding for each group in the given year's funding round | | | | | | |
|---|---|---|---|---|---|---|---|
| | **2017** | **2018** | **2019** | **2020** | **2021** | **2022** | **2023** |
| TEOs | 92.5 | 93.4 | 92.8 | 94.7 | 94.2 | 90.5 | 92.7 |
| Crown Research Institutes | 7.5 | 5.1 | 5.6 | 5.3 | 3.3 | 7.1 | 5.7 |
| Other research institutes and private individuals | 0.0 | 1.5 | 1.6 | 0.0 | 2.5 | 2.4 | 1.6 |

**Table 3:** Percentage of funding for new awards classified according to the type of originating institution – data for 2017-2023.

## Proposals by institution

| | EoI | | | | Full | | | | Fund | | | | Success Rate | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | FS | SD | MFCA | Total | FS | SD | MFCA | Total | FS | SD | MFCA | Total | FS | SD | MFCA | Total |
| **CRI** | **32** | **42** | | **74** | **7** | **6** | | **13** | **4** | **3** | | **7** | **12.5%** | **7.1%** | | **9.5%** |
| AgResearch | 1 | 3 | | 4 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0.0% | 0.0% | | 0.0% |
| GNS Science | 9 | 9 | | 18 | 2 | 2 | | 4 | 2 | 1 | | 3 | 22.2% | 11.1% | | 16.7% |
| Manaaki Whenua Landcare Research | 6 | 5 | | 11 | 1 | 0 | | 1 | 0 | 0 | | 0 | 0.0% | 0.0% | | 0.0% |
| NIWA | 9 | 14 | | 23 | 2 | 2 | | 4 | 1 | 2 | | 3 | 11.1% | 14.3% | | 13.0% |
| Plant & Food Research | 5 | 9 | | 14 | 2 | 1 | | 3 | 1 | 0 | | 1 | 20.0% | 0.0% | | 7.1% |
| Scion | 1 | 1 | | 2 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0.0% | 0.0% | | 0.0% |
| ESR | 1 | 1 | | 2 | 0 | 1 | | 1 | 0 | 0 | | 0 | 0.0% | 0.0% | | 0.0% |
| **OTHER (4 organisations)** | **5** | **6** | | **11** | **0** | **0** | | **0** | **0** | **0** | | **0** | **0.0%** | **0.0%** | | **0.0%** |
| **PRIVATE (17 organisations)** | **16** | **13** | | **29** | **4** | **2** | | **6** | **2** | **0** | | **2** | **12.5%** | **0.0%** | | **6.9%** |
| **TEO** | **270** | **532** | **6** | **808** | **72** | **134** | **0** | **206** | **41** | **73** | **0** | **114** | **15.2%** | **13.7%** | **0.0%** | **14.1%** |
| Auckland University of Technology | 6 | 8 | | 14 | 3 | 2 | | 5 | 2 | 2 | | 4 | 33.3% | 25.0% | | 28.6% |
| Lincoln University | 4 | 4 | | 8 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0.0% | 0.0% | | 0.0% |
| Massey University | 29 | 66 | 1 | 96 | 4 | 14 | 0 | 18 | 2 | 5 | 0 | 7 | 6.9% | 7.6% | 0.0% | 7.3% |
| The University of Auckland | 69 | 147 | 2 | 218 | 18 | 34 | 0 | 52 | 12 | 19 | 0 | 31 | 17.4% | 12.9% | 0.0% | 14.2% |
| University of Canterbury | 33 | 66 | 1 | 100 | 15 | 16 | 0 | 31 | 6 | 9 | 0 | 15 | 18.2% | 13.6% | 0.0% | 15.0% |
| University of Otago | 55 | 128 | 1 | 184 | 16 | 36 | 0 | 52 | 7 | 20 | 0 | 27 | 12.7% | 15.6% | 0.0% | 14.7% |
| University of Waikato | 24 | 28 | | 52 | 6 | 10 | | 16 | 3 | 8 | | 11 | 12.5% | 28.6% | | 21.2% |
| Victoria University of Wellington | 45 | 83 | 1 | 129 | 10 | 22 | 0 | 32 | 9 | 10 | 0 | 19 | 20.0% | 12.0% | 0.0% | 14.7% |
| Unitec Institute of Technology | 3 | 2 | | 5 | 0 | 0 | | 0 | 0 | 0 | | 0 | 0.0% | 0.0% | | 0.0% |
| Universal College of Learning (UCoL) | 1 | | | 1 | 0 | | | 0 | 0 | | | 0 | 0.0% | | | 0.0% |
| Waikato Institute of Technology | 1 | | | 1 | 0 | | | 0 | 0 | | | 0 | 0.0% | | | 0.0% |
| **Grand Total** | **323** | **593** | **6** | **922** | **83** | **142** | **0** | **225** | **47** | **76** | **0** | **123** | **14.6%** | **12.8%** | **0.0%** | **13.3%** |

**Table 4:** Number and percentages of funded proposals by institution, grouped by type of institution. The 'Other' category includes not-for-profit research institutes and the 'Private' category includes individuals and companies.

## Gender and Ethnicity Data

The following tables presents the percentages of female and Māori researchers in the preliminary proposals, full proposals and recommended contracts. The figures present the current round for comparison with the data over time. The "Total" column represents all applicants in a particular category, regardless of gender or ethnicity.

| | | **Investigators Identifying as Female** |
|---|---|---|
| **Principal Investigators** | EoIs | 40.9% |
| | Full | 52.6% |
| | Funded | 55.4% |
| **Associate Investigators** | EoIs | 32.6% |
| | Full | 37.0% |
| | Funded | 37.8% |
| **All Investigators** | EoIs | 35.8% |
| | Full | 42.8% |
| | Funded | 44.7% |

**Table 5:** Gender data for 2023 proposals.

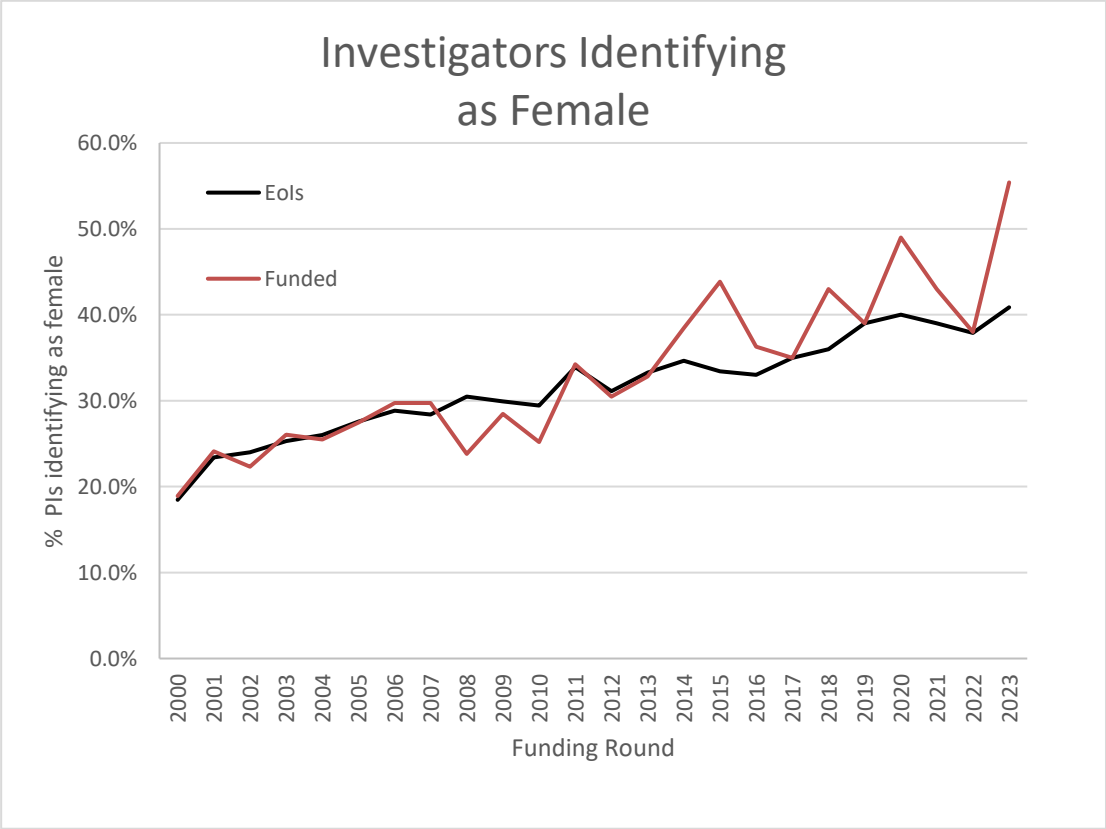


**Figure 1:** The percentage of responding Principal Investigators identifying as Female in the Marsden Fund.

| | | Investigators Identifying as Māori |
|---|---|---|
| **Principal Investigators** | EoIs | 5.7% |
| | Full | 9.0% |
| | Funded | 8.8% |
| **Associate Investigators** | EoIs | 6.4% |
| | Full | 9.5% |
| | Funded | 10.0% |
| **All Investigators** | EoIs | 6.2% |
| | Full | 9.3% |
| | Funded | 9.5% |

**Table 6:** Ethnicity data for 2023 proposals.

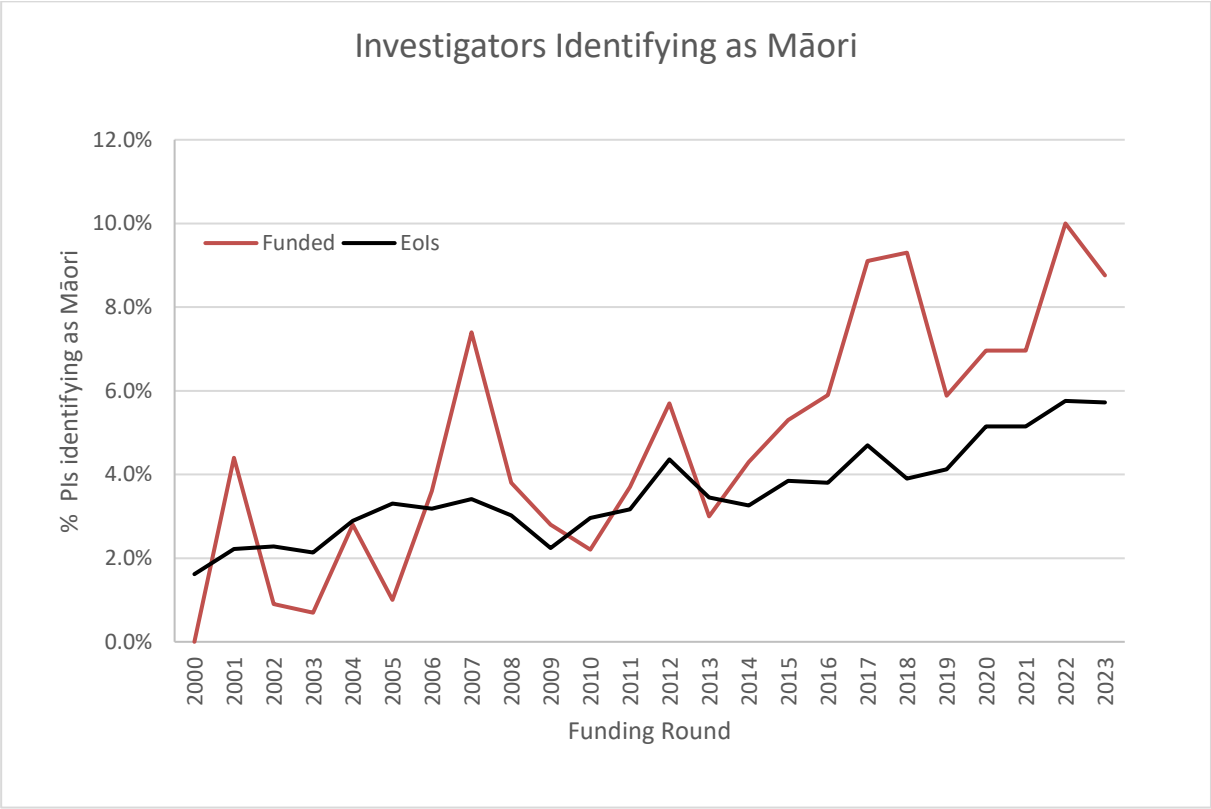


**Figure 2:** The percentage of responding Principal Investigators identifying as Māori in the Marsden Fund.