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RESEARCH ARTICLE



Under-represented and overlooked: Māori and Pasifika scientists in Aotearoa New Zealand's universities and crown-research institutes

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ABSTRACT

This article provides insights into the ethnicity of people employed in Aotearoa New Zealand's publicly-funded scientific workforce, with a particular focus on Māori and Pasifika scientists. We show that between 2008 and 2018, Māori and Pasifika scientists were severely under-represented in Aotearoa New Zealand's universities and crown-research institutes. Despite espousals by these institutions of valuing diversity, te Tiriti o Waitangi and Māori research, there have been very little changes in the overall percentage of Māori and Pasifika scientists employed for a period of at least 11 years. Notably, one university reported having not employed a single Māori or Pasifika academic in their science department from 2008 to 2018. We highlight the urgent need for institutions to improve how they collect and disseminate data that speaks to the diversity of their employees. We present data that illustrate that universities and crown-research institutes are failing to build a sustainable Māori and Pasifika scientific workforce and that these institutions need to begin to recruit, retain and promote Māori and Pasifika scientists.

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Indigenous scientists; higher education; equity; university; crown-research institutes; Māori; Pacific

Introduction

In 2018, Dr Megan Woods (Minister of Research, Science and Innovation) launched the Ministry of Business, Innovation and Employment's (MBIE) diversity in science statement, which states that 'Diversity is vital for our science system to realise its full potential' (MBIE 2018). Whilst this statement is a step towards raising awareness of the importance of diversity in science it needs to be followed by institutional changes, targeted programmes and directed responses from institutions. A vital component of achieving the aspirations espoused in this statement includes open reporting on diversity of 'applicants, award holders, and advisory, assessment and decision making bodies' (MBIE 2018). In two recent papers, McAllister et al. (2019) and Naepi (2019) spoke to the lack of diversity in

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This article has been corrected with minor changes. These changes do not impact the academic content of the article.

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Aotearoa New Zealand¹'s eight universities and provided evidence of the severe under-representation of Māori and Pasifika scholars, who comprise 16.5% and 7.5% respectively of the total population of Aotearoa. The authors showed that Māori and Pasifika comprise 4.8% and 1.7% respectively of academics, despite the espousals by universities of valuing diversity and their obligations to equity as outlined in *te Tiriti o Waitangi* (McAllister et al. 2019; Naepi 2019). The data used in these two studies, obtained from the Ministry of Education (MoE), provided information on the ethnicity of academic staff university wide and was not disaggregated by faculty. Consequently, data on the number of Māori and Pasifika academics in each faculty or department is currently not openly available. Previous research has shown that very few Māori academics exist outside of Māori departments and it remains difficult to access quantitative data on their lived experience as universities continue to silence reports (Kidman et al. 2015; UoO [date unknown](#)).

To ensure that the aspirations championed within MBIE's diversity statement can be met, we first need open and accurate reporting on the diversity of people employed within Aotearoa New Zealand's scientific workforce and there is currently a significant gap of openly available data that investigate this. Some annual reports and equity profiles of crown-research institutes (CRIs) and universities do contain selected ethnicity data (i.e. MWLR 2018; UoA 2018). However, these reports do not always present data in a meaningful and consistent way and are not always publically available. For example, the University of Otago's annual report does not contain any information on the ethnicity of staff and instead focuses only on gender of staff and the ethnicity of students (UoO 2018). Instead, the ethnicity data for staff is presented in the equity report, which is only available to staff and access must be requested from the Head of Organisational Development (UoO [date unknown](#)).

A survey of Aotearoa New Zealand's scientists and technologists in 2008 provides the most recent quantitative indication of the diversity of Aotearoa New Zealand's scientific workforce, despite being conducted 12 years ago (Sommer 2010). The author indicated that there was very little change in ethnicity of Aotearoa New Zealand's scientific workforce between the 1996 and 2008 surveys, with 'European' scientists making up 82.3% and 80.9% respectively (Sommer 2010). According to the author, there was a 'modest increase' in Māori scientists from 0.7% (1996) to 1.7% (2008) and this increase 'represents a glimmer of success for those who have sought to develop policies to bring more Māori into the science and technology workforce' (Sommer 2010, p. 10). However, an increase of 1% over a period of 15 years (i.e. an average increase of 0.07% per year) should be viewed as a significant failure. The percentage of Pasifika scientists also increased very slightly from 0.5% in 1996 to 0.6% in 2010 (Sommer 2010). McKinley (2002, p. 109) provided an insight into the extremely low numbers of Māori women employed by CRIs in 1998:

'Of the 3,839 people employed by seven Crown Research Institutes (CRIs) in New Zealand, 57 women or approximately 1.5% of the total identified as Māori women. At the time these data were collected in 1998 there were no Māori women in management positions, two were categorised as scientists, 15 as science technicians, and 40 as 'support' staff that includes cafeteria staff, administration staff and cleaners'

The data presented by both McKinley (2002) and Sommer (2010) highlight the urgent need for institutions and government to move away from 'business as usual' and make a serious commitment to firstly collecting data on diversity, openly and transparently

presenting it and secondly increasing the hiring, promoting and retention of Māori and Pasifika scientists.

The present paper aims to begin to address the gap in knowledge by collating data and investigating how diverse Aotearoa New Zealand's scientific workforce is. An intersectional lens must be applied when thinking critically about diversity and equity, however policies, actions and research often privilege gender (i.e. Bhopal and Henderson 2019; Brower and James 2020) over ethnicity whilst ignoring other intersectional identities that go beyond white, cis women. Here, we focus on the intersectional identities of Māori and Pasifika scientists, while acknowledging that people who have other intersectional identities including those with disabilities, LGBTQIA, non-binary and women of colour are likely to be disproportionately affected and disadvantaged within Aotearoa New Zealand's science system, which like universities, was arguably created by and made for white, cis men (Ahmed 2012; Osei-Kofi 2012; Naepi et al. 2017; Akenahew and Naepi 2015). This paper examines the current diversity of Aotearoa New Zealand's scientific workforce, with a particular focus on Māori and Pasifika. We will address the following questions:

- (1) How many Māori and Pasifika scientists are employed in Aotearoa New Zealand's universities and CRIs?
- (2) How has the percentage of Māori and Pasifika scientists in these institutions changed between 2008 and 2018?

Methods

Data collection

Data was requested from universities and CRIs by emailing key individuals within each organisation in 2019. Data from 2008 to 2018 on the percentage of scientists, relative to both the total headcount and the total number of full-time equivalents (FTEs) for each recorded ethnicity employed was requested from CRIs and universities. Both the nature of responses to this request and the time it took to receive a response varied among institutions. Responses from institutions ranged from an openness and willingness to contribute data to this project to hostility and racist remarks. Several institutions did not respond to multiple email requests. A subsequent email sent by a Principal Advisor from the Office of the Prime Minister's Chief Science Advisor elicited a prompt response from all remaining institutions. After initial conversations with staff from HR departments and university management, it was agreed that all institutions would remain anonymous and we believe that this contributed significantly to increasing the willingness of institutions to contribute data. Overall, data was obtained from 14 out of 15 of Aotearoa New Zealand's universities and CRIs. At most of these institutions staff self-declare their ethnicities and are given multiple choices, where data was provided for multiple ethnicities we used the first reported ethnicity.

Data from universities

Seven out of eight universities contributed data directly to this project, whereas data for university B was extracted from annual reports. Ethnicity data in the form of FTEs and

headcount data was provided by most universities. Māori and Pasifika academics are more likely to be employed on contracts of less than one FTE compared to Pākehā academics (unpublished data). We therefore present the percentage of FTEs of staff for each recorded ethnicity, rather than headcount data as it is likely to be a more accurate measure of diversity. Recorded ethnicity groups differed among some universities, mainly in the fact that some distinguished between ‘European’ and ‘NZ European/Pākehā’, whereas at others these two ethnicities were combined.

Data on the number of scientists employed at universities only includes scientists employed in science faculties (i.e. excludes Māori scientists in health faculties). It is important to note that the data from universities presented in this paper includes academic staff and excludes research staff, including post-doctoral fellows and laboratory technicians. However, a recent paper published by Naepi et al. (2020) showed that in 2017, there were only 55 Māori and 20 Pasifika postdoctoral fellows across all faculties in all of Aotearoa New Zealand’s universities. The number of Māori and Pasifika postdoctoral fellows employed in science faculties is, therefore, likely to be very small. Academic staff includes other academic staff, senior tutors, tutors, tutorial assistants, lecturers, senior lecturers, associate professors and professors. Previous research has shown that a large proportion of Māori and Pasifika academics are employed as tutors and other academic staff rather than in permanent senior academic positions (see Naepi 2019), so this is also likely to be the case within science faculties.

Concerningly, two universities (university E and H) were unable to provide data for the requested 11-year period (i.e. from 2008 to 2018). Upon querying this with human resource (HR) departments, their reasons included but were not limited to the following:

- Issues with data quality as ethnicity and nationality were incorrectly used interchangeably
- Changes in HR systems
- Some data (including ethnicity) are overwritten each year (i.e. so there was no historic record)
- Staff ‘change their ethnicity’
- Changes in the way FTEs were calculated

Data from crown-research institutes

Data, in some shape or form, was obtained from six out of seven of Aotearoa New Zealand’s CRIs. Obtaining accurate and consistent temporal data from CRIs was, despite their willingness, much more difficult than from universities. The MoE requires certain ethnicity data from universities in a particular format (see MoE [date unknown](#)), however the diversity of staff employed at Aotearoa New Zealand’s seven CRIs is currently not required by an external organisation. Most CRIs were unable to provide FTE data but were able to provide headcount data, consequently we present the headcount data in this report. Because the data from CRIs was highly variable, we were not prescriptive about how they defined a scientist, however at most institutions this included post-doctoral fellows and scientists.

Data on the percentage of Māori and Pasifika scientists employed from 2008 to 2018 could only be obtained from four out of seven of the CRIs. CRI F could only provide ethnicity for staff that were recent hires from 2016 to 2018, meaning we are unable to differentiate

between science and non-science staff and data on staff employed prior to 2016 was unavailable. CRI E could only provide data for 2019, the year that we had asked for it, due to their HR system overwriting data and therefore having no historical record of staff ethnicity.

The ethnicity data from CRIs, with the exception of CRI B, can only be viewed as indicative due to inconsistencies in how CRIs collect data. Data from most institutions was therefore not conducive to any temporal or statistical analyses. For example, at CRI A over the 11-year period, the ethnicity categories offered to staff changed four times. Māori and Pasifika were consistently given as options, which provides some level of confidence in CRI A's ethnicity data.

Results

Māori scientists employed in Aotearoa New Zealand's universities

Before even considering the data presented below, we must acknowledge and highlight that science faculties within universities are generally not safe and inclusive environments for Māori and Pasifika academic staff. Reasons for this include that being the only Indigenous person in a faculty puts that one person under extreme pressure to help colleagues, indigenise curriculum, support Indigenous students while also advancing their own career (Mercier et al. 2011; Kidman et al. 2015). It is well established that the job satisfaction of Māori academics is influenced by their proximity to other Māori academics (Mercier et al. 2011; Kidman et al. 2015). The interdisciplinary work of Māori scientists also often does not align with what the academy and their Pākehā counterparts define as 'science' and many scholars have explored this (see for example, McKinley 2005; Mercier 2014; Hikuroa 2017). Consequently, of the few Māori scientists that exist and survive within academia, several are employed outside of science faculties (see for example, Mercier 2014). This data therefore is likely to very slightly underestimate the numbers of Māori scientists within the academy. Furthermore, in the present paper we focus on Māori and Pasifika scientists in science faculties but there will also be Māori and Pasifika scientists in social science and humanities and health faculties, which will not be captured by the data reported below.

Māori are under-represented in science faculties at all of Aotearoa New Zealand's eight universities (Table 1). University A had the highest level of representation, which may be attributed to the science faculty being combined with another discipline at this particular university (Table 1). From 2008 to 2018, University D has never employed a Māori academic in their science faculty (Table 1). Māori comprised less than 5% of the total FTEs in science faculties at all other universities between 2008 and 2018, the averages were 4.3, 1.4, 1.6, 3.7 and 0.6% respectively at University B, C, E, F and H (Table 1). Importantly, there were no significant differences between the percentage of Māori FTEs in 2008 and 2018 (paired t-test: $t_{10} = -0.24$, $p = 0.82$). Thus, meaning that over 11 years there has been no improvement in Māori representation in science faculties (Table 1).

Māori scientists employed in Aotearoa New Zealand's crown-research institutes

Promisingly, and in contrast with patterns of Māori scientists at universities the percentage of Māori scientists (i.e. of the total headcount) employed by CRIs has increased from 2008 to 2018 at half (2/4) of the CRIs that were able to provide temporal data

Ethnicity	University	Year										
		2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Māori	A	7.3	5.5	5.1	5.1	5.4	5.6	5.8	7.1	6.6	6.4	6.4
	B	4.2	4.2	3.7	3.7	4.3	4.3	4.1	4.7	4.8	4.5	4.4
	C	1.0	1.0	1.3	1.2	1.1	1.1	1.1	1.4	1.5	2.2	2.5
	D	0	0	0	0	0	0	0	0	0	0	0
	E	–	–	–	1.5	1.3	0.7	1.1	1.4	2.0	2.6	2.0
	F	3.5	3.8	3.3	3.4	3.4	3.7	3.4	4.1	3.8	4.2	4.2
	G	1.8	3.0	2.6	3.8	3.8	3.8	3.6	3.2	3.2	3.0	3.5
	H	–	–	–	–	–	–	–	0.7	0.6	0.6	0.5
Pasifika	A	2.0	1.2	1.7	2.0	2.2	2.4	2.9	2.7	2.8	3.8	4.8
	B	0.6	1.0	0.9	1.0	1.2	1.0	1.2	1.2	1.0	1.2	1.3
	C	0.3	0.5	0.5	0.5	0.6	0.6	0.6	0.9	0.9	0.8	0.9
	D	0	0	0	0	0	0	0	0	0	0	0
	E	–	–	–	0.6	0.7	0.6	0.7	0.6	0.7	0.7	1.1
	F	0.6	0.2	0.3	0.3	0.4	0.3	0.3	0.3	0.5	0.5	0.7
	G	7.4	4.9	3.9	3.5	3.2	3.2	3.0	3.3	3.3	4.0	3.3
	H	–	–	–	–	–	–	–	0.4	0.4	0.2	0

Certain CRIs are doing better than others, it is however important to note, particularly given CRIs outward espousals of commitments to and valuing ‘Māori research’ and mātauranga (i.e. GNS 2018), that Māori remain under-represented in all CRIs in Aotearoa New Zealand, including CRI A and B (Table 2). Additionally, the fact that three out of

[illegible]

seven of the CRIs could not provide sufficient data suggests that these institutions have a lot of work to do in collecting data on the diversity of the staff that they employ.

Pasifika scientists employed in Aotearoa New Zealand's universities and crown-research institutes

There is currently an absence of research into the experiences of Pasifika scientists in Aotearoa-New Zealand's science system. However like Māori scientists, Pasifika scientists are likely to be marginalised and under-valued within the current science system. Pasifika scientists in both universities and CRIs are extremely under-represented (Tables 1 and 2). Notably of the 11 institutions (inclusive of universities and CRIs) that provided data only three reported having Pasifika representation exceeding 1% of either the total headcount or total number of FTEs in more than one year (Tables 1 and 2). Four institutions (one university and three CRIs) reported having employed zero Pasifika scientists for 11 consecutive years (Tables 1 and 2). Importantly, there were no significant differences between the percentage of Pasifika FTEs in universities in 2008 and 2018 (paired t-test: $t_8 = 0.36$, $p = 0.73$). Thus, meaning that over 11 years there has been no improvement in Pasifika representation in science faculties (Table 2).

The patterns in the percentage of both Māori and Pasifika scientists employed at university G were very different from all other institutions (Table 1). Firstly, university G was the only university that in some years employed more Pasifika than Māori scientists (Table 1). In 2008, 7.4% of FTEs in the science faculty of university G belonged to Pasifika scientists, which was the highest recorded in all eight institutions over 11 years (Table 1). However, Pasifika scientists in this faculty had only 4.4 FTEs in 2008, meaning that 7.4% equated to five Pasifika staff (data not shown).

The diversity of scientists employed in science faculties in Aotearoa New Zealand's universities

Between 2008 and 2018, the majority of academics in the Computing and Mathematical Sciences, Engineering and Science departments at university D were European comprising between 58.7% and 85.2% of the total FTEs (Figure 1(A)). University D distinguishes between 'European' and 'New Zealand European/Pākehā' and the data presented in Figure 1(A) suggests that not many academics in these departments associate with the latter group. Thus, suggesting that most academics employed within these departments are from overseas. In these departments (i.e. Computing and Mathematical Sciences, Engineering and Science) between 2008 and 2018 there was a consistent increase in the percentage of FTEs of Asian ethnicities (12.3% increase in Computing and Mathematical Sciences, 6.8% in Engineering, 2.4% in Science; Figure 1(A)).

The data provided by university D clearly illustrates a severe lack of Māori and Pasifika academic staff representation in sciences faculties (Figure 1(B)). It shows that in two of the three departments, there have never been any Māori academics employed (Figure 1(B)). Furthermore, in those three departments no Pasifika academic staff have been employed in 11 years (2008–2018). Māori academics have comprised 4.1%–7.5% of the total FTEs in the Computing and Mathematical Science department (Figure 1).

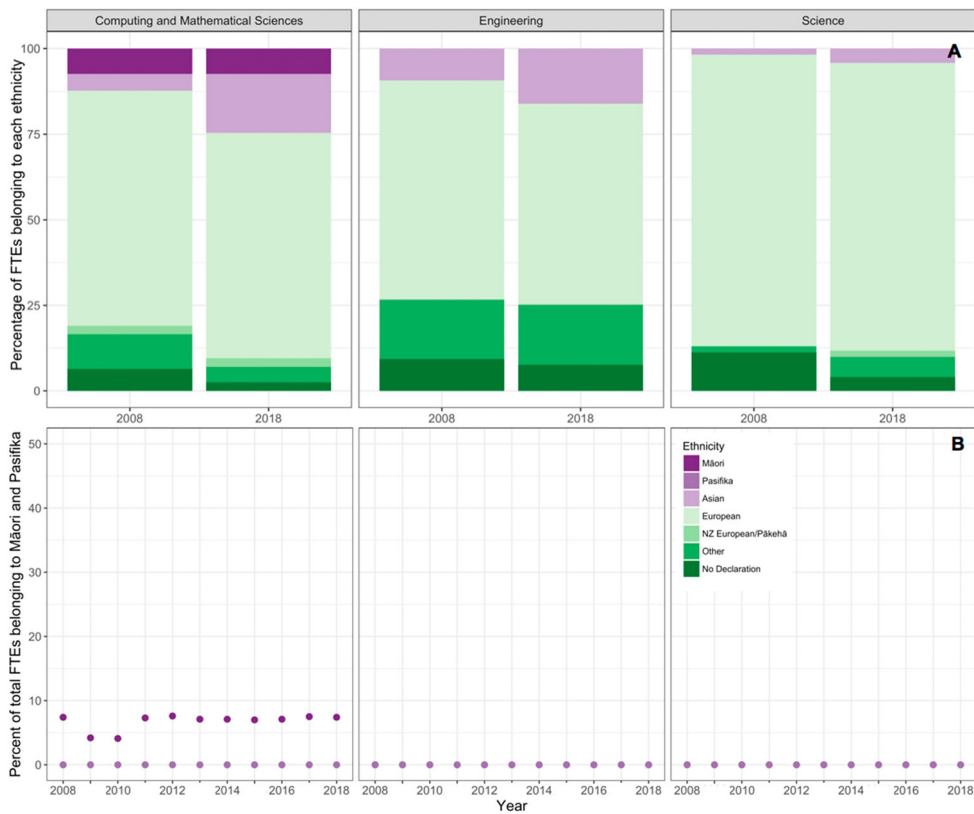


Figure 1. (A) The percentage of full-time equivalents (FTEs) for each recorded ethnicity in three science faculties at university D in 2008 and 2018 and (B) the percentage of Māori and Pasifika FTEs in those three faculties for academic staff from 2008–2018.

Note: In both the Engineering and Science departments there were no Māori or Pasifika employed between 2008 and 2018.

NZ European/Pākehā formed the majority (52.8%–63.6%) of academic staff employed in the science faculty of university B and this percentage has decreased by 11.8% between 2008 and 2018 (Figure 2). People who did not declare their ethnicity (unknown) comprised a small percentage (average = 3.2% of the total FTEs; Figure 2). European academics made up on average 20% of the total FTEs employed in this faculty between 2008 and 2018 (Figure 2). Māori and Pasifika scientists were under-represented, comprising on average 6.0% and 2.6% respectively (Figure 2). The percentage of Māori FTEs has decreased from 7.3% (2008) to 6.4% (2018), whereas the percentage Pasifika FTEs has increased from 2.0% to 4.8% over the 11-year period (2008–2018; Figure 2). However, there was no statistically significant difference between both Māori and Pasifika FTEs over time ($p > 0.05$).

The importance of department by department analysis of universities ethnicity data is highlighted when comparing the percentage of Māori FTEs university-wide and the science faculty (Figure 3). The average percentage of Māori FTEs university wide at university F was 4.7% from 2008 to 2018, whereas it was consistently lower within the science faculty (Figure 3). Similarly, representation of Pasifika academics in the science faculty at university F was much lower compared to the entire university (Figure 4). The average

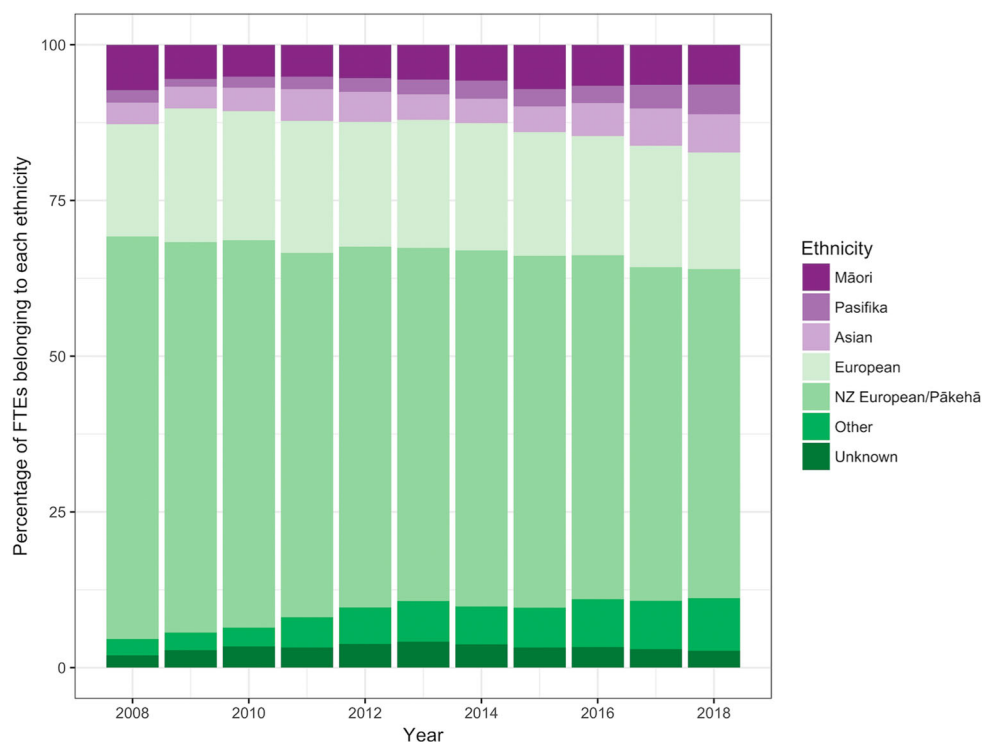


Figure 2. The percentage of full-time equivalents (FTEs) for each recorded ethnicity at university B from 2008 to 2018.

Note: University B has a combined science faculty (i.e. science and another discipline).

between 2008 and 2018 was 1.5% of Pasifika FTEs across the university whereas it was only 0.4% in the science faculty (Figure 4).

The diversity of scientists employed in Aotearoa New Zealand's crown-research institutes

CRI B was the only CRI that was able to provide relatively good quality, temporal data. Data from this institution indicated that African scientists made up approximately 1% of scientists employed from 2016 to 2018 and both Asian and Australian scientists have made up on average 5.4% and 5.0% respectively of the total headcount from 2008 to 2018 (Figure 5). The percentage of European scientists has increased steadily from 16.1% in 2008 to 23.5% in 2018 (Figure 5). The percentage of Māori scientists employed has also increased from 3.4% in 2008 to 7.8% in 2018 (Figure 5). Although this increase is promising, Māori remain under-represented within this institution. Interestingly, the percentage of NZ European/Pākehā employed at CRI B has decreased from 64.9% (2008) to 45.3% (2018; Figure 5). This may speak to the increasing value the science system places on international expertise, whereby scientists from overseas or with international experience are valued more than those from Aotearoa, which is driven in a large part by global ranking systems that value international staff recruitment (Stack 2016). This is driven

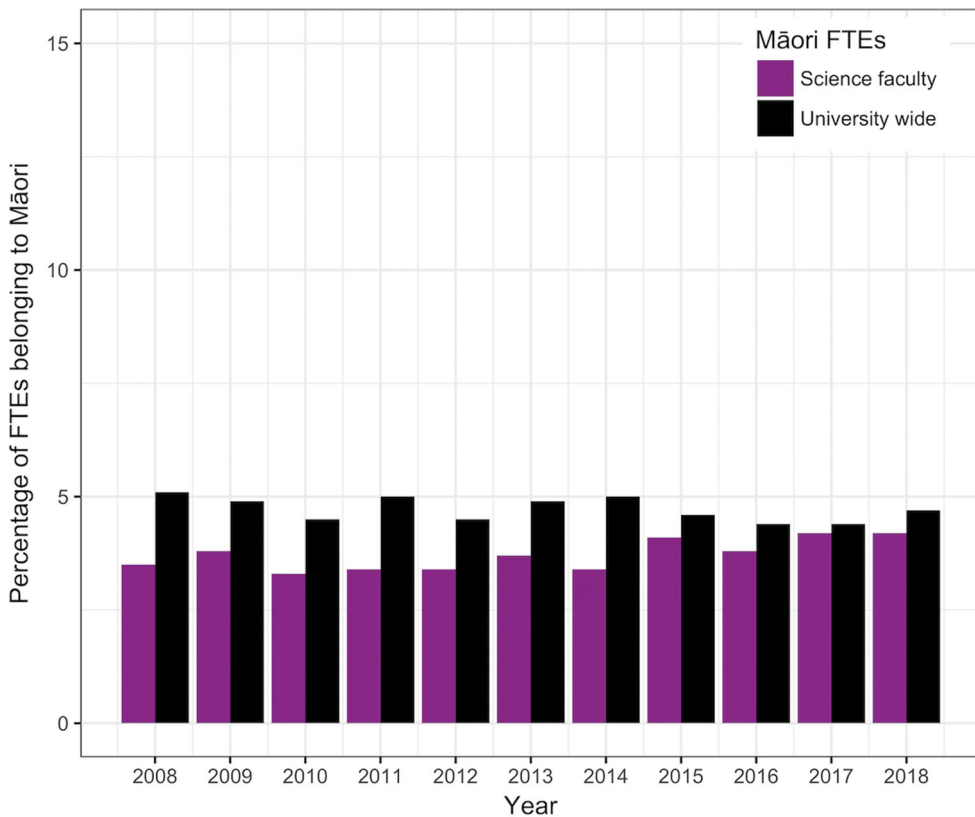


Figure 3. The percentage of Māori full-time equivalents (FTEs) of academics in both the science faculty and across the entire university at university F.

Note: y axis is limited to 15%.

largely by the increasing importance placed on international university ranking systems. Importantly, scientists coming from overseas will likely have very little understanding of things that are highly important within the context of Aotearoa (e.g. te Tiriti o Waitangi). Considering the data presented, urgent action is required to address this apparent selection of international scientists over Māori and Pasifika scientists. Rather than copying and pasting a blanket statement in job advertisements of empty words like the following: ‘The University of Canterbury actively seeks to meet its obligation under the Treaty of Waitangi | Te Tiriti o Waitangi’ (UoC date unknown), CRIs and universities need to be actively recruiting Māori and Pasifika scientists and hence need to consider the following questions when hiring new staff:

- (1) How is this person likely to contribute to the uplifting of Māori communities in a meaningful way?
- (2) Do they have any experience working with Indigenous communities?
- (3) What is their understanding of Te Tiriti o Waitangi and the Treaty of Waitangi?
- (4) How do you see your role as supporting our institution’s commitments to Pasifika communities?

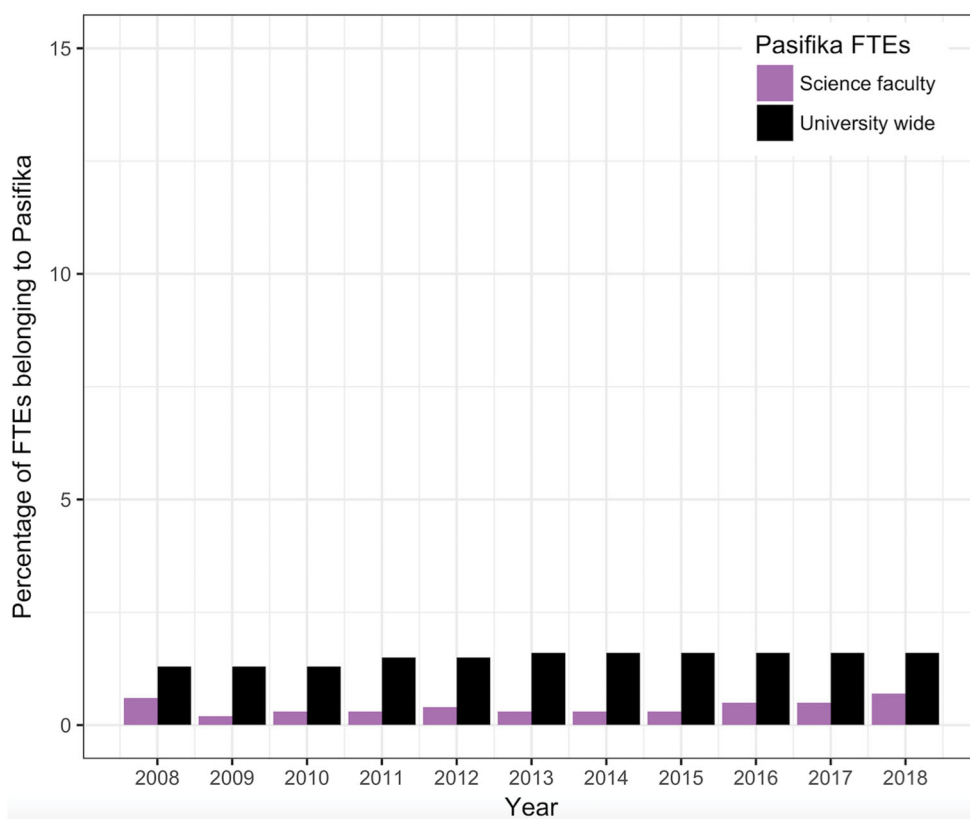


Figure 4. The percentage of Pasifika full-time equivalents (FTEs) for academic staff in both the science faculty and across the entire university at university F.

Note: The y axis is limited to 15%.

CRI E were only able to supply data in the year that it was requested (i.e. 2019) due to their HR systems. In 2019, this particular CRI employed zero Pasifika scientists and 1.6% of scientists were Māori (Figure 6). The majority of scientists employed at CRI E in 2019 were NZ European/Pākehā (55.0% NZ European) and 21.5% were ‘European’ (Figure 6).

CRI F only began collecting ethnicity data, despite previously collecting gender data, in 2016. Their data was also only collected for new recruits. We were, therefore, unable to disaggregate science staff from general and non-science staff. From 2016 to 2018 the majority (59%–66%) of new recruits were ‘NZ Europeans’. In 2017, 14% of new recruits were Pasifika whereas in 2016 and 2018 there were no Pasifika recruits. Māori comprised between 2% of new recruits in 2017 and 2018 but 8% in 2016 (data not shown).

Discussion

The data presented in this report provides evidence that Māori and Pasifika scientists are under-represented in both universities and CRIs. Despite some small increases in Māori scientists employed by selected CRIs, the data indicates that at most of these institutions there has been little increase in the overall percentage of Māori and Pasifika scientists

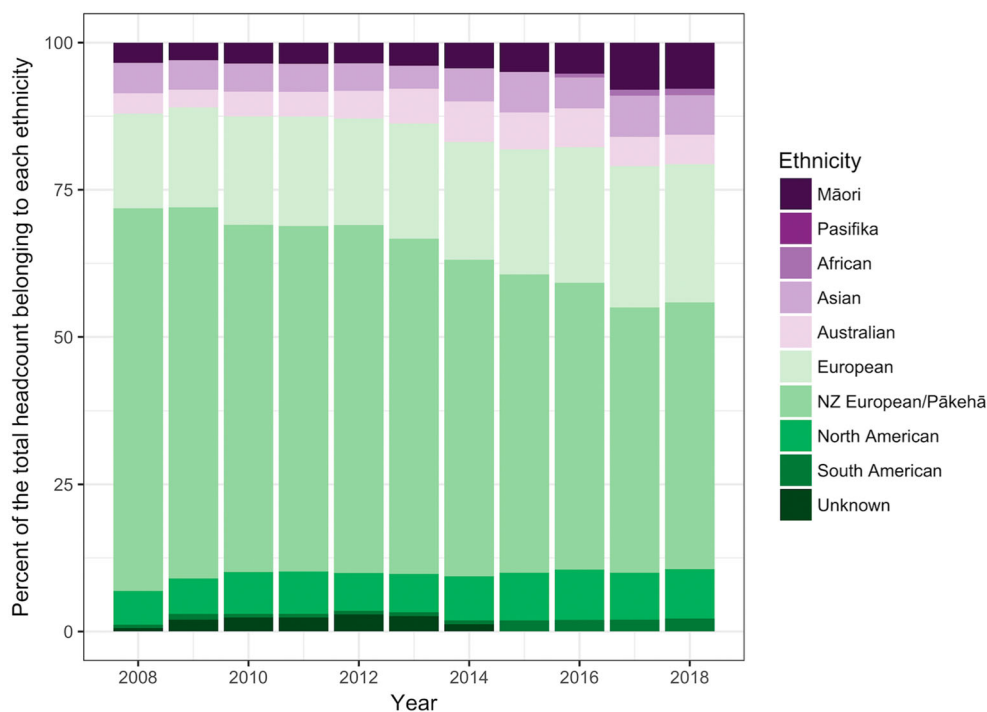


Figure 5. Percentage of the total headcount for each recorded ethnicity at crown-research institute (CRI) B from 2008 to 2018.
Note: Ethnicity groups in this graph differ from previous graphs.

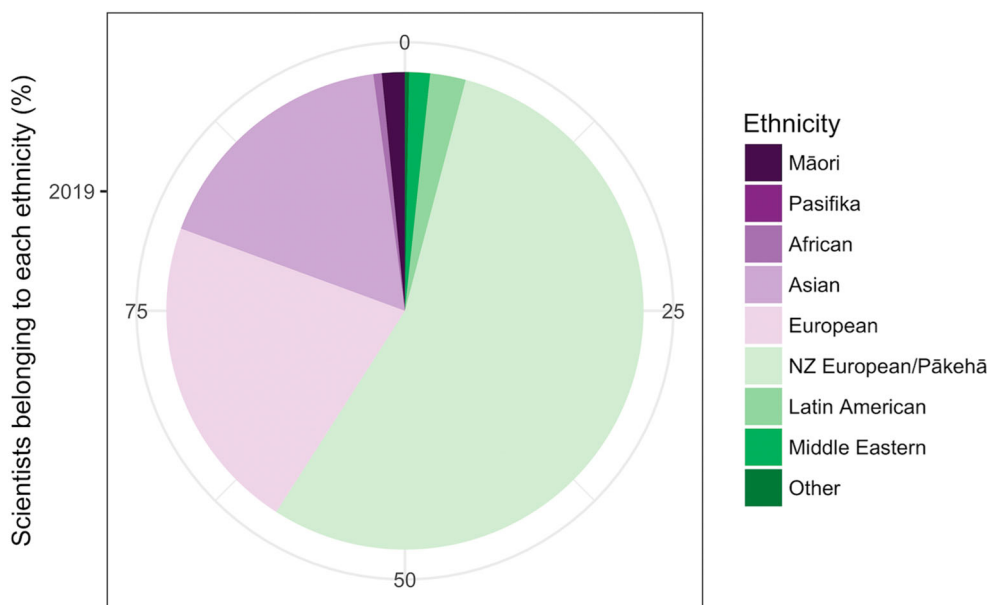


Figure 6. The percentage of the total headcount of each recorded ethnicity at crown-research institute (CRI) E in 2019.
Note: Ethnicity groupings differ from previous graphs.

employed from 2008 to 2018. Urgent responses from institutions in the form of hiring, retaining and promoting Māori and Pasifika scientists coupled with both institutional change and support for scientists coming through the science education system is required to change the current trajectory of continued under-representation. This data represents the start of beginning to address the aspirations outlined in MBIE's diversity in science statement and highlights that further well-resourced research leading to action is urgently required.

McKinley (2002) highlighted that data from crown-research institutes was not available through government sources in 1998 and when she approached CRIs to request data she found that most institutions found it very difficult to supply data on the ethnicity of staff as they were not collated as part of their records. This still appears to be a problem for many CRIs 22 years later. As the Tertiary Education Commission (TEC) requires data from universities, we suggest that MBIE begins to collect this from CRIs, openly reports it in a standardised format and that funding is tied to this data. The meeting of aspirations around diversity and equity, obligations under te Tiriti o Waitangi and the success of any future interventions will not be able to be assessed without robust data. Without clear and accurate data, funding bodies cannot assess whether these institutions (both CRIs and universities) are meeting commitments and expectations (i.e. MBIE 2018). Furthermore, the institutions themselves have no idea if they are meeting these commitments and expected outcomes of increasing diversity. This means that as it currently stands, any commitments by these institutions to valuing diversity is merely window dressing (where diverse bodies are used for media campaigns etc. but no meaningful action is taken towards achieving equity), desirable diversity (one group of people is able to declare diversity desirable and then dictate what it is about diversity that is desirable) and non-performative diversity (institution's ability to write and declare diversity commitments or policies but not resource their implementation; Ahmed 2012, 2017).

Rather than entering zeros for data of Pasifika scientists, some CRIs left blank spaces in the excel spreadsheets, which resulted in having to double check that there were in fact no Pasifika scientists employed. Some responses from HR to this query included:

- We do not employ any Pasifika scientists but are aware of employing 1 or 2 scientists who are Pasifika but have not identified as such.
- We have a very diverse ethnic demographic of our staff.
- We do know that one person who is part Samoan is currently employed.

These comments show that there is a significant lack of understanding and reflection of HR staff about ethnicity and diversity. Firstly, if you do not employ any Pasifika scientists yet do 'a lot of work in the Pacific', you do not have a 'diverse ethnic demographic' of staff. Furthermore, you cannot be 'part Samoan'. Such concerns of being 'part' or 'half' reflect an outdated understanding of ethnicity with roots in colonialism (Kukutai 2004; Saini 2019). Historically and today, such reductions of cultural identity to 'blood quantum' are used to undermine the claims of and to essentially assimilate Indigenous people (Ellinghaus 2017). These ideas persist and colour how even Indigenous peoples conceive of themselves (Kukutai 2004). However, being Indigenous is defined by whakapapa and ancestry and, accordingly, is not divisible (reviewed in Kukutai 2004). The notion of being 'part' has connections to historical attempts render Indigenous people's as dying or as permanently

within the past and not part of our contemporary reality or future. It appears that some of these institutions, universities included, are not being reflective about why people may not want to identify as Māori or Pasifika. It indicates that their work environments may not be culturally safe spaces and rather than institutions claiming to employ a 'very diverse ethnic demographic of staff' when they in fact do not, they should put more effort into ensuring cultural safety of Māori and Pasifika scientists and work towards removing institutional barriers that prevent them from entering, staying and progressing in these institutions.

Some institutions are beginning to respond to the under-representation of Māori by advertising positions for 'Māori scientists' or people with expertise in 'mātauranga Māori'. However, inserting one Māori person into a department of predominantly non-Māori academics is extremely problematic for a variety of reasons. That one person may be under immense pressure to indigenise the department, the curriculum, provide 'cultural advice' on any and every topic and assist Pākehā colleagues with 'ticking the Māori box' in their funding applications, all whilst trying to advance their own career and do research that uplifts their own communities (Naepi et al. 2020). Furthermore, the job satisfaction of Māori academics is heavily influenced by the presence of other Māori academics (Kidman et al. 2015) and the pressure put on a singular Māori scientist within a faculty or team at a CRI is enormous. A better alternative would be cluster hires of Māori and Pasifika scientists coupled with institutional changes and the removal of barriers. One potential reason why CRI B employs a relatively high percentage of Māori scientists compared to other CRIs, is that they have a dedicated team of Māori scientists who work together in a group, which acts as a culturally safe space within a larger, Pākehā institution.

The inability of some universities and CRIs to produce long-term data of the ethnicity of employed staff is highly problematic as how are these institutions going to measure the success (or lack thereof) of their equity and diversity policies? How will they know whether they are meeting their obligations under te Tiriti o Waitangi? How will they assess whether the under-representation of Māori and Pasifika academics has improved? The answer is that they will not and cannot, without robust data. It is highly ironic that these institutions fail to keep such basic data whilst employing leading statisticians, social scientists and academics who study ethnicity who could ensure, for example, that ethnicity and nationality were not blurred. Universities are funded by the government and the government has key and clear goals for Māori and Pasifika (see for example, MoE 2008). The government cannot ensure accountability without data and measurements of the aspirations espoused.

Conclusions

In this article, we have shown that Māori and Pasifika scientists have been severely under-represented in both universities and CRIs and that at most of these institutions there has been very little change in 11 years. This raises many questions and highlights the lack of institutional will to build a sustainable Māori and Pasifika scientific workforce. This paper is a challenge for universities, CRIs and the government to make meaningful structural changes to transform Aotearoa New Zealand's publicly-funded scientific workforce through the active recruitment, retention and promotion of Māori and Pasifika scientists. Without urgent action addressing the inequities and under-representation we have highlighted in the present paper, the aspirations outlined in MBI's diversity in science statement

will never be fulfilled. Furthermore, without Māori and Pasifika voices, our science system will never reach its full potential. The solutions for addressing the under-representation of Māori and Pasifika scientists do not simply lie in getting more people through a fundamentally broken system but require the removal of systematic barriers that prevent Māori and Pasifika from progressing further in science and ultimately pursuing careers in science.

Note

1. Although Aotearoa is a Māori name for New Zealand's North Island, to reflect the nations bi-cultural foundation it is commonly used in this context, e.g. Aotearoa New Zealand, to mean all of New Zealand

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