

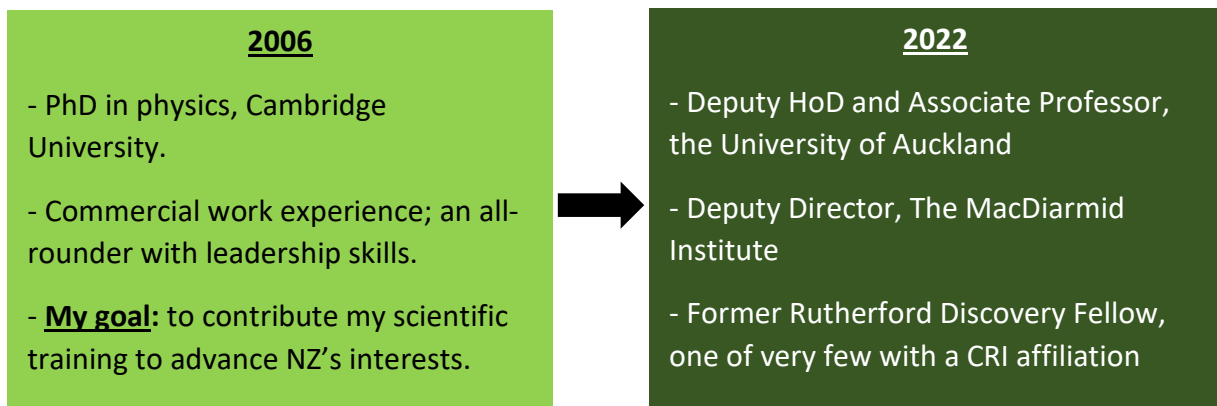
Te Ara Paerangi – Personal Submission

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This submission focusses on my own personal story and experiences. I am a several-generation pakeha male New Zealander whose parents were primary school teachers. My three key messages for this consultation are:

1. **He tāngata.** To address **any of the themes** in the green paper, the starting point must be properly supporting the people in the sector and their career development.
2. **GERD should be raised to OECD average levels.** This point must be prominent in any discussion of our science system, even if the consultation has been steered in other directions.
3. **Hand up.** I have wide experience in the research system and I am available to assist with improving it.

My Journey in the NZ RS&T System



Some Thoughts and Experiences

Increased and flexible student and postdoctoral support is essential to attract and retain talent in the workforce. I was able to return to NZ because of the discontinued FRST Postdoc. I took a 50% pay cut from my graduate job and undertook a significant change in research direction from my PhD. My ability to commit to this move was primarily due to student scholarships; I did not have large debt and could take personal financial risks.

Institutions must be stable to attract people, and they should focus on supporting the careers of their workforce. At a CRI (IRL, 2006-13):

- I almost did not return to NZ as a financial bailout of IRL made headlines in December 2005. The financial security of the organization and my employment were never stable, and were implicitly contingent on external research income and political whims.
- IRL was a very good place to do research and train as a scientist, chiefly due to the collegial environment and the available space, as well as access to "NZ Inc." research opportunities (of variable quality). There is a clear contrast with the design of University research as commoditized student research projects.

- The dilapidated infrastructure at IRL (both on and around the site) was constantly discussed but seldom attracted investment, to the detriment of those working there. I imagine that the Robinson building still has problematic leaks, and that there is still no shelter at the bus stop on Gracefield Rd.
- The method and scale for career progression was not transparent. No counter-offer was made when I suggested that I would leave.
- The reorganization to form Callaghan Innovation provides a clear example of how a researcher-led initiative (the ATI) was overturned by institutional and political concerns, with inefficient outcomes for NZ overall.

Institutions should be incentivized in the right way. They can drive efficiencies by carefully recruiting research staff whom they can trust and empower, and support staff who can effectively support research.

- Every NZ research institution I have interacted with has been primarily motivated by finance rather than researchers, quality of research, or outcomes for society. The primary reason for my success within institutions has been my ability to win funding, not because I had a good research idea, but because of the revenue obtained.
- The process of doing research is always burdened by institutional administration. Common examples include procurement of software which is not fit-for-purpose, prioritization of support functions (e.g. accounting, HR, marketing / media) over the research they should be supporting, and gatekeeping indicating a lack of trust.
 - As a 19 year old in a private sector internship in NZ I was handed a corporate credit card. No NZ research institution has shown me anywhere near that level of trust.

Our funding system should reduce its complexity, fragmentation and competitiveness.

- The documentation around my FRST Postdoc application was basically unfathomable, requiring my NZ-based mentor to write the majority of the proposal. It took ~3 years back in NZ before I could understand the system well enough to put together a good-quality funding proposal.
- NZ's best funding systems have the common trait that researchers have control over the research planning and workflow.
 - In the late 2000s I signed a colleague's open letter calling for a tripling of the Marsden fund, consistently NZ's best funding stream (in process as well as mission). Despite a recent increase, Marsden remains a small fraction of overall research spending.
 - A Centre of Research Excellence provided me with the best overall support as an ECR: collegiality, freedom to explore research, and long timeframes.
 - A Rutherford Discovery Fellowship is obviously great *for those who win them*, and their focus on leadership skills is welcome.
- Mechanisms such as MBIE Endeavour, NSCs, and Callaghan student grants have encouraged adverse outcomes such as replication of research, poor peer review and poor funding choices, failure to avoid conflicts of interest, failure to provide timely funding, overcomplication of the application process, and massively inefficient administration. The NSCs, a lesson in how not to do **research prioritization**, costs us about two Marsden funds.

- My own productivity is severely affected by overcompetition (i.e. by writing many funding proposals asking for small amounts of money with low chance of success). Notably, this has included *competition for core funding* at IRL, for PBRF funds at UoA, and within NSCs.
- The policy framework for Vote RS&T (e.g. as per the diagram in the NSSI) fundamentally misrepresents the nature of research (with labels like mission- and investigator-led) and the size of the budget (where business subsidies, administration and education functions are included). It accurately illustrates overfragmentation of the system.

Reflections on my 2006 Goal

In many parts the system, it is only through personal values and sheer persistence that team players with an “NZ Inc.” mission survive.

The research system’s ideas of how to advance NZ’s interests are confused and changeable. More often than not, there is fundamental misalignment between personal and professional incentives for individuals, research groups, institutions, the country, and globally.

The system is set up to focus on individuals who can earn revenue for their employer. The result is that our science system is populated by metaphorical cockroaches, whose chief distinguishing feature is survival. I count myself and many talented, respected colleagues among them. This culture of prioritizing survival has been passed through the system by mentor to mentee; it is good advice for career development.

Thus, the system encourages selfishness and self-promotion. The effect on teamwork is perhaps even more devastating than it is on individuals.

Learning how to build effective teamwork in research would be a constructive challenge for NZ to take on. Some key features of successful teams, that we don’t necessarily emphasize in research, include:

- Aligning all incentives behind a clear shared objective, and using this objective as the primary driver for the team.
- Transparently and independently choosing the best people and plan to reach the objective, while maintaining a flexible open door policy.
- Demanding and practicing respect, honesty and trust within the team. Especially, respect for the sacrifice that has gone into each individual’s career development.
- Giving team members the freedom to express themselves and use their skills.
- Being inspired, staying positive, and celebrating success.
- Welcoming diversity; understanding that each team member is motivated in different ways, and can contribute different things.

