

**Panel Paper:**

**The emergence of science communication in New Zealand**

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New Zealand (NZ) is a long, narrow country, with a current population of 4.5 million people, situated at the “bottom of the world”. Its relative isolation and rugged geography has ensured a culture of exploration, discovery and communication. Māori, the indigenous people of Aotearoa New Zealand, have always had a deep knowledge of the world around them, from astronomy to agriculture. They recognise several star patterns, as well as the planets. They know the yearly star cycle and relate this to seasonal activities such as the planting and harvesting of crops. The oral traditions of Māori include many stories aimed to help people grow and store food and sustainably maintain the land and its inhabitants [1-5].

Captain James Cook visited New Zealand in 1769 in the barque *Endeavour*, having observed the transit of Venus in Tahiti. In November of that year, Cook and astronomer Charles Green undertook the first astronomical observations on New Zealand soil, when they viewed the transit of Mercury from a beach, now named Mercury Bay, on the Coromandel Peninsula [6, 7]. On subsequent visits to Aotearoa New Zealand, in 1773–74 and 1777, Cook and his astronomers made extensive observations, determining latitude and longitude from Dusky Sound in Fiordland and Ship Cove in Queen Charlotte Sound.

Naturalist Joseph Banks travelled with Cook on the *Endeavour* during its 1768–71 voyage, along with botanist, Daniel Solander, and three draughtsmen or artists to record the natural history of the places they visited. The collections of plants they brought back to England established modern New Zealand botany [8, 9]. The first colonial

immigrants from the Northern Hemisphere, at first traders and hunters of seals and whales, came to exploit the biological and mineral resources of the land. The Waitangi Treaty between the indigenous Māori population and the immigrant British was signed in 1840 [10, 11]. Geological and geographical discoveries were well reported by the early Institutes and Societies, set up in the main population centres of Auckland, Dunedin, Nelson, Christchurch and Wellington [12].

Science Communication started informally as associations of scientists, with the formation of the Royal Society of New Zealand (RSNZ) in 1933 and the New Zealand Association of Scientific Workers, later the NZ Association of Scientists (NZAS) in 1942. The former, formed gradually from consolidated regional Institutes, established a society to connect scientists and support research in the new country [12] and published the first scientific papers (*RSNZ Transactions*, 1868). The NZAS, formed around 1942, published *The New Zealand Science Review*, aimed at a broader audience, the same year. This group set up the first awards for science communication, with the Science Journalism Award in 1980 and the Science Communicator's Award in 1990 [12-14].

Two media stand out as important in the emergence of New Zealand science communication. The first is radio. With a small population scattered over an island nation, communication by radio was critical in the early twentieth century, before television arrived in 1960. The monthly *Science Report* radio programme was established by the New Zealand Broadcasting service in 1957, but its broadcast time of 1.30 pm on a Sunday meant it did not survive beyond 1958. It was not replaced on a regular basis until 1999, when Allan Coukell established the weekly *Eureka!* radio programme. *Eureka!* ran until 2005, with host Veronika Meduna from 2002. Regular science programming is now well established in the weekly *Our Changing World*. Veronika Meduna, Alison Ballance and Ruth Beran host an hour of science narratives and interviews with scientists, on a Thursday evening on Radio New Zealand National. The late Professor Sir Paul Callaghan and Radio New Zealand National journalist Kim Hill did much to establish the place of science on Saturday morning radio, with their discussions on everything from the Big Bang and nanotechnology to novel cancer treatments [15]. Kim Hill continues to welcome scientists of all persuasions to her show, as does the host for the Sunday Morning show on Radio New Zealand National. The challenge has also been taken up by

the host for the Nights show on the same station, Bryan Crump, who discusses a broad array of topics, from Extreme Weather to Body Parts, on Thursday evenings before *Our Changing World* (<http://www.radionz.co.nz/national/presenters/bryan-crump>).

New Zealand's stunning landscapes, increasing problems with pest control and loss of rare native birds have been a catalyst for the development of the wildlife documentary. In 1975, journalist Neil Harraway and photographer Robert Brown made a television documentary on the endangered flightless parrot *kakapo*, signalling the emergence of natural history filmmaking in the southern city of Dunedin. The manager of TVNZ Dunedin, Hal Weston, established the Natural History Unit in 1978. Led by Michael Steadman, this unit evolved into Natural History NZ (now NHNZ), internationally recognised for its documentaries on wildlife and natural history (<http://www.nhnz.tv/home>). From the start, the NHNZ developed close working relationships with close relationship with the New Zealand Wildlife Service, which became the Department of Conservation, as well as other government science departments and many universities. In 2001 the NHNZ formed a partnership with the Zoology Department of the University of Otago in Dunedin, leading in 2008 to the formation of the Centre for Science Communication at the University of Otago (<http://www.sciencecommunication.info>). This postgraduate training centre runs three streams for its MSciComm, in documentary filmmaking, creative science writing and popularising science and also has PhD students in science communication.

Documentary films on research in New Zealand were also made in other parts of the country in the 1970s. For the Department of Scientific and Industrial Research's 50<sup>th</sup> Jubilee in 1976, Geoff Gregory, from the Science Information Division of DSIR scripted a film, *Research 50*, which was available for schools and public showing. It was followed by *Crop Research in DSIR*, and in 1986, a documentary on volcanoes in New Zealand, *Ruamoko's Heritage*.

New Zealand's interest in and engagement with science took off in the late 1990s and early 2000s. The first New Zealand International Science Festival was held in Dunedin in 1998 and has been a biannual event ever since (<http://www.scifest.org.nz/>). One major event may have contributed to the rise in public engagement with science in New Zealand. In 2000 the new coalition government of the New Zealand Labour Party

and the New Zealand Greens established the Royal Commission on Genetic Modification [16]. There followed 14 months of hot debate about the future of genetic modification (GM) in New Zealand. Over 10,000 personal written submissions were received, 92% opposing any GM in New Zealand. Public meetings were held all over New Zealand and daily editorials or reports were published in all the main media. A huge number of New Zealanders engaged in the debate over this controversial scientific issue. The RCGM demonstrated the inadequacy of the deficit model of science communication: Commissioners concluded involvement of the public in the consideration of major ethical issues and in decision-making on such issues was of vital importance, when finding outcomes to today's problems. Much of the discussion was on the ethical, cultural and spiritual issues of GM, rather than on the science itself [17]. An increase in levels of outreach and public engagement all over New Zealand was seen in subsequent years. In 2004, agricultural journalist Peter Burke formed the Science Communicators' Association of New Zealand (SCANZ: [www.scanz.co.nz](http://www.scanz.co.nz)), with support from the Ministry of Research, Science & Technology, signalling New Zealand's coming of age in science communication.

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