Sylvia Tapuke

NZASE scientist profile

Born where and when

Tāmaki Makaurau/Auckland, 1972.

Affiliations

Ko Ngāi Tūhoe, Hineuru, Ngāti Manawa, Ngāti Tūwharetoa, Raukawa ki te Tonga, me Hamoa ngā iwi.

"We were part of an urban whānau. My mum was Māori and my dad was from Samoa; I went to Pacific Island churches in Mangere and Glen Innes. At 12 I didn't even know I was Māori. My mum and dad were native speakers of their languages, but they went silent without a community of speakers around us."

"I married into a family involved in the revitalisation of te reo; my husband became principal of a total immersion kura. By the time our children were born I'd reconnected with my whānau. You need your identity when you're going through school."

School and subjects

Sylvia didn't take any science subjects at Aorere College in South Auckland. "I found it boring – I was the quiet person at the back."

"I started doing a Bachelor of Arts but didn't enjoy it and failed in my first year. I moved over to science and really loved it, especially earth science. I had to work really hard picking up new subjects."

How she got into science

"I did love teachers asking why questions: 'Why do you think this is happening?' Curiosity runs in our family, we were always curious about the world. Mentors at the University of Auckland were really encouraging and shoulder-tapped me; I ended up being a peer tutor for Māori science students."

Sylvia with indigenous people from around South America after a cultural ritual at a conference in Peru.

Training and jobs

Bachelor of Science, University of Auckland, 1995.
Postgraduate Diploma of Teaching, 1996, Auckland College of Education. "Education Outside the Classroom influenced how I teach, I love using the outdoors as a classroom."
Primary teacher, 1997, Kawerau and Te Aroha
School secretary, Torere, 1999
Postgraduate Diploma in Māori Resource Development and Management, Massey University, 2005
Country Intern, South Pacific Applied Geoscience Commission, 2006
Research assistant, Massey University
Lecturer and researcher, Waiariki Polytech
Masters in Emergency Management, Massey Uni, 2017
Researcher, GNS, from 2017 on the Eclipse programme (**E**ruption or **C**atastrophe: **L**earning to **I**mplement **P**reparedness for future **S**upervolcano **E**ruptions).
Researcher, then **Kaiārahi Maori Partnerships** at Scion, Rotorua from 2019.

Field of science

Kaupapa Māori research – bridging sciences and Mātauranga Māori.

Research topics

Historic waiata as a way to communicate volcanic risk and readiness

Sylvia studied two waiata about the Tarawera eruption for her Master's thesis; 'He waiata tohu mate mo Tarawera', an adaption from

one by Te Kooti beforehand, and 'Tērā te Auahi', an anonymous response waiata composed afterwards. Analysing kōrero from wānanga, hui and interviews, she found that Te Kooti used waiata to communicate volcanic risk and readiness, and that traditional knowledge, values and practices about disasters encoded in waiata can broaden understandings of volcanic risk, and preparedness.

Mātauranga Māori about the health of the Taupo volcanic zone

As part of the ECLIPSE programme, Sylvia collected pūrākau about the Taupō volcanic zone through mātauranga Māori, engaged iwi to work with scientists about the zone, and co-created with the ECLIPSE team and iwi approaches to communicate preparedness information about the zone.

Te Arawa climate change strategy

Sylvia took over as the Scion lead on Te Ara Ki Kōpū strategy advisory committee, writing the technical document behind the strategy, and providing advice and direction. She helped analyse data from workshops and wānanga, aligning it with wider iwi work on climate change, and other organisations like the local council, "ensuring there were strong alliances towards climate change goals. We also compiled indigenous climate change strategies in Australia, Canada, and other countries." Te Arawa and Ngāi Tahu are the only iwi currently with their own climate change strategies.

A cheeky photo of Sylvia during a forestry course in 2020.

The impact of housing and health

Sylvia studied the condition of houses and the health of occupants in the small Urewera town of Minginui, as part of Toitū te Kāinga, Toitū te Ora, Toitū Te Tangata/Healthy Homes, Healthy People – a national science challenge.

Housing in the town was known to be substandard, but none of the promised improvements arrived. "I went with a community researcher to the houses of the participants, measured the temperature, mould spores and other data about their homes, recorded their health status, wrote quarterly reports, communicated the results back to the people, and helped them to get more funding."

The research found that that 88 percent of occupants had long term physical or mental illness, including respiratory disease worsened by cold, damp and mouldy houses. Results were used to help design 20 healthier homes in a new papakāinga, with thermal and moisture control, and energy efficiency.

How she finds things out

"Establishing the relationships with iwi is the most important thing, before you touch on knowledge. It takes time and energy to build trust; some knowledge has been taken and not looked after or not returned, so there can be massive distrust to overcome. Then you need protocols for how you will engage with iwi – agreeing on the ethics, values and principles guiding how you do research."

Sylvia reviews existing research, studies storytelling in pūrākau, hui and wānanga, and in one-to-one and hui interviews. Participatory action research involves "gathering knowledge as you are trialling something new, adjusting how you do it in the next cycle – trial and error." She also uses surveys and collects measurements and other data.

Most valuable results

"If results are valuable to the people I'm working with, they're valuable to me. The people will tell you – if they're sharing it at

Sylvia helped organise this ECLIPSE values workshop with scientists and potential iwi partners at Tangatarua Marae.

hui or on Facebook, then I know."

The te Arawa climate change research project was awarded gold status twice by MBIE; "it's rare to get that once, let alone twice. Being a part of that journey with them has been a valuable experience."

Her voluntary whānau research and sharing it back has been valuable – "being able to understand your own history, knowing who you belong to and your whakapapa." Sylvia is writing a chapter for an international indigenous book about the value of research for families. "My uncle ran wānanga in the 1990s, gathering old people with memories and guest speakers with specialist knowledge, and filmed them. I took the notes, and it fed into my Master's research."

"I volunteer as a researcher for my marae and hapū; we commemorated 100 years of our meeting house Tama-ki-Hikurangi in an event called Te whare e tū nei in 2011. My grandfather helped dismantle and move it after the Tarawera eruption when the land was stolen from us. It was a painful part of our history. The commemoration involved the whole community; the kohanga reo, kapa haka and sports groups, Māori wardens, and music bands."

Mātauranga Māori

"I used to train primary teachers in science; when you're planning, you need to create space for local hapū or iwi to generate or co-construct those unit plans." It's not just teachers holding all the knowledge, but presenting knowledge as owned by lots of different people, she says. "Teachers carry a lot of power in the classroom, so power sharing is critical."

She gives the example of the 2019 LEARNZ field trip, Natural Hazards – our supervolcano, which is built around the journey of tohunga Ngātoroirangi south from Maketū to Tongariro. It explores mātauranga Māori about volcanoes as well as tectonic plate theory. "That journey has been in our stories for generations, encoded in a relational world view. How we tell those stories includes some creativity, but the whakapapa are always factual."

What she likes about science

"I love when someone makes sense of the world, how things happen. I love that you can explain science with graphs, diagrams, numbers, stories, arts and music."

"To me, science is everywhere. It's fun, it's interactive when it's taught well, it can be mind expanding. It's not just about the physical, it's also a holistic approach. Science can come in many codes and forms. Everyone can be a scientist."

Links

Te Ara ki Kōpū: Te Arawa Climate Change Strategy, 2021.
Rosemary Rangitauira, 2020, Nudged by te ao Maori to explore science, Sciblogs.
LEARNZ, 2019, Natural hazards – Meet Sylvia Tapuke.
Te Ao, 2018, Iwi researchers, scientists study natural disasters.

Ngā Kupu

Āhuarangi hurihuri – Climate change
Kairangahau – Researcher
Kauanu – Could, draughty (house)
Kaupapa Māori research – By, for and with Māori, according to tikanga Māori
Puia – Volcano, hot spring
Papakāinga – Communal Māori land
Rangahau – Research, survey
Tūraru – Risk.

Te Aka Maori Dictionary & Paekupu