



2026 IRDR Young Scientists Lumos (4th)

UTC 7:00-8:30, 4 March 2026, Online

Indigenous Knowledge for DRR – Bridging Wisdom and Innovation

Concept Note

1. Rationale

In order to enhance the connection and promote the innovations and actions of young scientists, IRDR IPO designs a mechanism of “IRDR Young Scientists Lumos¹”, which will be webinars, sessions, meetings, or discussions mainly organised and participated by young scientists and young professionals in the global disaster risk reduction (DRR) community.

Indigenous knowledge systems offer deeply rooted, context-specific insights into environmental stewardship, community resilience, and DRR. Despite their value, these knowledge systems remain underrepresented in mainstream DRR discourse and practice. This webinar seeks to bridge this gap by creating a platform for Indigenous scholars and young professionals to share their research, stories, and innovations.

Aligned with the IRDR Young Scientists Programme’s mission to amplify youth-led contributions to DRR, this session will:

- Showcase Indigenous perspectives on DRR practices and solutions.
- Explore how traditional knowledge can be integrated with contemporary science and technology.

It is expected that through the discussion, the innovation cases from young professionals will be visualised and acknowledged by the global DRR community.

2. Structure and Tentative Agenda

¹ Lumos: a wand-light charm in Harry Potter series. This charm is used to create light and reveal hidden things. Lumos here means that the young scientists create innovations and generate the impacts to the world.

It will be a 90-minute online workshop. 3-4 young professionals from different regions will be invited to share their cases. Leading scientists and experts will be invited to give a keynote speech and provide comments and suggestions. There will be 30 minutes of discussion for all participants.

Item 1: Keynote (10 minutes)

- Indigenous knowledges and Disaster Risk Reduction: Challenges and opportunities at the interface, by Distinguished Professor Christine Kenney, Massey University

Item 2: Presentations by young researchers (8 minutes of each)

- Weaving Indigenous Knowledge Systems for Climate Resilience: Southern Māori Approaches to Disaster Risk Reduction, by Lucy Kaiser, Earth Sciences New Zealand
- Indigenous Knowledge and Seismic Engineering, by Sonny Vercoe, University of Auckland
- 2 more speakers tbc

Item 3: Q&A and discussions

3. Organisers

This Lumos will be organised by IRDR with the support of other partners.

4. Call for Presentations

This lumos call for two presenters.

Young researchers, professionals, and practitioners are invited to submit applications, including a 250-word abstract, short bio (100 words), and contact information by **23 February, 2026** to connect@irdrinternational.org, with the subject line: [Lumos] + Your Name. Selected speakers will be notified by 28 February, 2026.

5. Registration and Meeting Link

Registration Link: https://zoom.us/webinar/register/WN_hyXfW2wORHG1sYulrvP-6A

Open to all researchers, practitioners, students, and community members interested in Indigenous knowledge and DRR. Registration will be free and accessible online.

6. Bios and Abstracts

	<p>Distinguished Professor Christine Kenney</p> <p>Dr Christine Kenney is a Distinguished Professor and Chair of Disaster Risk Reduction (DRR) at Massey University, as well as Director of Te Toi Whakaruruhau o Aotearoa, the national Māori Disaster Risk Reduction Research Centre. Christine is a key informant to strategic DRR and recovery legislation/policy development in New Zealand and has worked extensively in the international arena including with UN and WHO agencies. Her research within New Zealand, is supported by central government, as well as the Royal Society Te Apārangi, the New Zealand Natural Hazard Commission and other external funding agents. She co-leads the 8-million-dollar Endeavor research programme; Ngā Ara Punga punga and is Principal Investigator for the Marsden Council research programme on Indigenous disaster recovery in New Zealand.</p>
	<p>Lucy Kaiser</p> <p>Title: <i>Weaving Indigenous Knowledge Systems for Climate Resilience: Southern Māori Approaches to Disaster Risk Reduction</i></p> <p>Indigenous knowledge systems offer sophisticated, relational approaches to disaster risk reduction (DRR), yet remain marginal within dominant climate and hazard planning. This presentation draws on two interconnected studies with Kāi Tahu ki Murihiku (Southern Māori in Southland, Aotearoa New Zealand) examining how families and knowledge holders experience, interpret, and adapt to escalating climate-related risks. Using a Kaupapa Māori methodology (a Māori-centred, relational research approach) and narrative analysis, combined with Callon's concepts of framing, externalities, and overflows, the research centres Indigenous worldviews, genealogy-based governance (whakapapa), and intergenerational responsibility. Findings from 20 in-depth interviews show that climate disruption is being experienced across physical, relational, cultural, and emotional</p>

domains. These include altered species relationships, erosion of cultural sites, disrupted food systems (mahika kai), and concerns for future generations (mokopuna). Participants interpret these changes through both Indigenous knowledge (mātauraka Māori) and empirical environmental observation. Climate change phenomena such as storms, drought, and coastal erosion are situated within long-standing relationships between humans, ecosystems, and ancestral forces. Despite these disruptions, the research documents significant Indigenous innovation. Kāi Tahu families transform the “externalities” of mainstream policy (such as cultural loss, land displacement, and youth exclusion) into “overflows” (genealogy-based adaptive infrastructures, land-based stewardship (kaitiakitaka), sustained ancestral presence (ahi kā), ecological reciprocity (utu), and strategic partnerships grounded in unity (kotahitaka)). These studies demonstrate that Indigenous knowledge operates as infrastructure for DRR and climate adaptation. Centring Indigenous governance, relational ethics, and future-focused planning is essential for designing disaster-resilient systems that honour both ancestral obligations and the wellbeing of future generations.

Bio: Lucy Kaiser (Kāi Tahu, Kāti Māmoe, Waitaha) is a Senior Māori Hazard and Risk Social Scientist at Earth Sciences New Zealand and Massey University. Her research explores disaster preparedness and resilience, particularly within Māori, Indigenous and rural communities, with a particular focus on Indigenous perspectives on climate change.

Sonny Vercoe

Title: *Indigenous Knowledge and Seismic Engineering Abstract*

Māori are the Indigenous people of Aotearoa New Zealand, a highly seismic country. For centuries, Māori have established over 700 building complexes across the country referred to as marae. The central



building within a marae is the traditional Māori meeting house (wharenui), typically a single-storey timber-framed structure of profound cultural significance. This presentation showcases doctoral structural engineering fieldwork undertaken using a mixed-methods approach to acquire the information required to develop a detailed seismic assessment (DSA) methodology for wharenui, integrating Indigenous and Western scientific knowledge systems.

Beyond the Māori nature of the research, the component of Indigenous knowledge primarily related to the engagement process. Approval to proceed was first obtained from Māori elders (kaumātua) and elderly (koeke), after which recruitment engagement was conducted with marae representatives across two tribal regions (rohe). This engagement followed the customary system for correct conduct in Māori society (tikanga Māori) and local marae-specific protocol (kawa).

Beyond the aim of developing a DSA methodology for wharenui, the component of Western scientific knowledge related to the data collection process. Building inspection and non-intrusive investigation were conducted to document structural configuration, member and element properties, and material characteristics. Information was acquired using systematic field measurement and three-dimensional (3D) spatial capture. Intrusive investigation was not undertaken due to the cultural and historic significance of wharenui.

Bio: Sonny Vercoe is an emerging Māori researcher in structural engineering dedicated to developing a detailed seismic assessment (DSA) methodology for Māori meeting houses (wharenui). He is currently a doctoral candidate at the University of Auckland, where his research focuses on investigating wharenui structural systems and current industry DSA practice. Raised within Māori culture and trained in structural engineering, Sonny integrates Indigenous and Western scientific knowledge systems to advance research directly relevant to Māori communities.

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