

QuakeCoRE 2 rebid development

23 May 2019

Discussion at Flagship 1 monthly meeting

- Aims:
 - Provide an overview of the QC2 research structure and opportunities for involvement for people with specific disciplinary expertise/interest
 - Discuss the 'position' of the DFA on 'Integrated Seismic Demands and Consequent Geohazards' in the research structure
 - Combination of existing FP1 and FP2 research strands; inclusion of slope-stability topics
- Note:
 - The rebid announcement from TEC is expected mid-2019, submission late 2019.

Primary
research
activities

Disciplinary focus areas

‘Narrow and deep’ research areas that span the earthquake resilience pipeline and focus on transformative research questions that NZ has shown global leadership in.
[target 5]

Grand Challenges

Multidisciplinary research areas that leverage NZ unique situation and challenges.
[target 4]

Co-ordination
mechanisms

Technology megatrend capability areas

Development of human capability for early adoption and leverage of megatrends to accelerate earthquake resilience

Regional engagement areas

Contextual relevance and rapid embedding research solutions into tangible advances in earthquake resilience

Primary
research
activities

Disciplinary focus areas

1. Mātauranga Māori
2. Cultural and socio-economic aspects of EQ-resilience
3. Economics, planning and policy
4. “Structural Earthquake Engineering”
5. Integrated seismic demands and consequent geohazards

Grand Challenges

1. Homes as safe-havens in earthquakes
2. Repairable buildings serving resilient communities
3. Seismic resilience of NZ’s transportation and logistics system
4. Transforming the resilience of NZ’s infrastructure through disruptive technologies

Co-ordination
mechanisms

Technology megatrend capability areas

1. Sensing and monitoring
2. Machine learning
3. Computational science
4. Additive manufacturing

Regional engagement areas

1. Alpine Fault (South Island)
2. Wellington
3. Hikurangi subduction (North Island)
4. Auckland
5. South Pacific

Integrated seismic demands and consequent geohazards

- Research question:
- What are the salient physics and mechanics that govern seismic geohazards and how can we advance prediction accuracy and precision through observational, empirical and physics-based tools?

QuakeCoRE2.0 White Paper Template



QuakeCoRE

NZ Centre for Earthquake Resilience
Te Hiranga Rū

Topic title:

Integrated seismic demands and consequent geohazards

- See wiki page for white paper as at 23 May 2019

Context of integration

Focus areas	Sensing & monitoring for real-time applications	Multi-physics integrated modelling	Data-driven models using machine learning
Ground motion	1.1	1.2	1.3
Liquefaction	2.1	2.2	2.3
Slope instability	3.1	3.2	3.3

- Note: Lab-testing to provide integral input to understand salient mechanics for multi-physics modelling, but also other two columns.