

## Call for Scholarship applications

3-year Doctoral Scholarship

Joint Centre for Disaster Research,

Massey University

New Zealand

### **PhD Research Scholarship: Building thriving residential communities using citizen science information to inform earthquake engineering**

The Joint Centre for Disaster Research (JCDR) is awarding a three-year PhD Scholarship from mid to late 2022 – 2025 as part of the Interdisciplinary Programme 2: Thriving Residential Communities in the QuakeCoRE Te Hiranga Rū research programme. The scholarship is available to students of all nationalities. The starting date is any time from mid-late 2022.

**Closing Date for Applications:** 15 May 2022

#### **Subject area:**

This scholarship is for a 3-year PhD research project, analyzing GeoNet's "Felt Detailed" felt report data, to extract information on human behavior following moderate-to-large earthquakes in New Zealand, as well as information on different damage thresholds for various shaking intensity levels.

GeoNet is New Zealand's Geohazards Monitoring System ([www.geonet.org.nz](http://www.geonet.org.nz)), a collaboration between the Earthquake Commission (EQC) and GNS Science, responsible for providing the public with information about natural hazards in New Zealand. As part of this service, GeoNet has an online questionnaire (called "Felt Detailed") where members of the public can report their experiences in the event of an earthquake. These are "felt reports" are an important source of information since they can be processed to calculate the intensity of shaking experienced by the public in each event, providing a geographical distribution of the shaking that can be used by emergency responders to understand post-earthquake damage and prioritise interventions

(<https://www.geonet.org.nz/data/types/felt>).

A large dataset of more than 1,000,000 online felt reports has been gathered by GeoNet since 2004, being a popular way of citizens to contribute to science. While intensity data is currently being extracted from “Felt Detailed” reports, there is a great need to carry out further research using the large dataset gathered. Four main topics need further investigation: 1) analysis of the macroseismic intensity thresholds at which non-structural damage occurs; 2) intensity level differences per floor level; 3) differences in behavioural response throughout time over long earthquake sequences (e.g. Canterbury 2010-2011), for events with similar intensity levels; and 4) analysis of how well the New Zealand population is represented in these online questionnaires.

Results from this research will help improve the New Zealand macroseismic scale, provide better understanding of the non-structural damage caused at different intensity levels, provide guidelines towards improvements in the online questionnaires, and leverage a better understanding of human behaviour in different types of earthquakes which can then be utilised to improve public education programmes. The results from this PhD project will help improve community resilience and contribute to thriving residential communities

While several subject areas of interest are outlined in the above paragraph, the exact topic and approach to this PhD can be adjusted according to the student’s qualifications and area of research interest.

### **About the Joint Centre for Disaster Research:**

The JCDR is located within the School of Psychology and is based at the Wellington Campus of Massey University in New Zealand. The Centre undertakes multi-disciplinary applied teaching and research aimed at understanding the impacts of disasters on communities, improving risk management and enhancing community preparedness, response and recovery from various hazard events. You can find out more here <http://disasters.massey.ac.nz/>

### **About QuakeCoRE:**

QuakeCoRE is transforming the earthquake resilience of communities and societies, through innovative world-class research, human capability development, and deep national and international collaborations. We are a Centre of Research Excellence (CoRE) funded by the New Zealand Tertiary Education Commission. See: <http://www.quakecore.nz/>

Our Flagship programmes address five areas of multi-disciplinary research (Disciplinary Themes), interconnected via four Interdisciplinary Programmes to understand and improve how our communities recover and thrive after major earthquakes. Our Technology Platforms are advancing the underpinning infrastructure needed for our research, from lab and field experimentation to complex community datasets and high performance computing. Translation of our research outputs into policy and practice is achieved through active participation with our stakeholders and end users in our research programme and education of the next generation leaders in earthquake resilience.

### **The scholarship**

This PhD scholarship is available to a suitable student who is accepted into a PhD program at Massey University. The successful scholarship holder will receive NZ\$36,000 per year for up to 3 years under the scholarship program (including the cost of tuition fees and stipend).

## Eligibility

The scholarship is available for pursuing a PhD programme. The student is expected to have an Honours or Masters (with a research thesis component) qualification in a relevant discipline (interdisciplinarity is encouraged), such as: geography, social science, communications, earth science, sociology, or engineering.

The successful candidate will be enrolled fulltime at Massey University and reside in New Zealand, for the tenure of the project. Candidates must meet the **PhD eligibility criteria** for enrolling at Massey University (<http://www.massey.ac.nz/massey/research/higher-research-degrees/how-to-apply-for-the-phd/how-to-apply-for-the-phd.cfm>).

## Timetable

- Applications close: 15 May 2022
- Applicants will be short-listed and interviewed
- Selection of candidate by 17 June (offer must be accepted within 3 weeks)
- Ideal PHD studies commencement date: By 22 August 2022 (in time for the 2022 QuakeCoRE annual meeting), however start date can be flexible for the appropriate candidate.

## Enquiries and Applications:

Applicants should submit an email to **Harriet Guy (H.Guy1@massey.ac.nz)**, with the subject heading of 'Thriving Residential Communities PhD application'. Please include:

- A curriculum vitae (max. 2 pages)
- Academic transcript
- List of publications (if any)
- Contact details
- One A4 page cover letter outlining your interest in the topic, and why you would like to be considered for this scholarship.

## Enquiries about the topic can be directed to:

Julia Becker ([j.becker@massey.ac.nz](mailto:j.becker@massey.ac.nz)) or Tatiana Goded ([T.Goded@gns.cri.nz](mailto:T.Goded@gns.cri.nz)).