

## Kirsty Styles

*Earthquake Risk Scientist at Aspen Re*

### NERC PhD provides key skills for a career in insurance

Kirsty Styles has used the skills and knowledge she gained during her NERC-funded PhD to build a successful career in the insurance industry. Kirsty's understanding of the science behind earthquakes, and her ability to work with scientific models, help her company to estimate the risk of earthquakes in different parts of the world and work out the correct price for insurance against this risk.



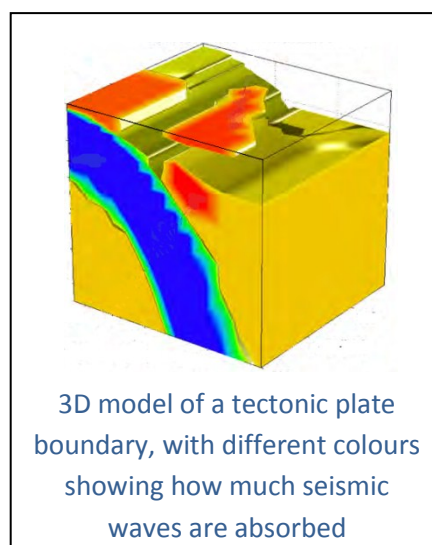
After a BSc in Physics with Astronomy, an MSc in Oceanography, and two years in employment, Kirsty chose a PhD in seismology based on one lecture she attended during her MSc. "That was the best lecture I'd ever had," she says, "It was basically a direct application of all these physical principles I'd learned about in my physics degree to a real earth system. And I thought: 'This is really fascinating.'"

For her PhD, which she worked on at Leeds University between 2005 and 2009, Kirsty used data from earthquakes in New Zealand to build 3D models of the structure of the Earth under North Island, where the Australian and Pacific tectonic plates collide. The highlight of the PhD for Kirsty was the time she spent in New Zealand and the fieldwork she did there. "It's a really great place to work," she says, "Somebody would send out an email saying 'I've got to go and deploy some seismometers up in the Coromandel Peninsula, does anybody want to come?' and there would always be people willing to go and spend a weekend helping out."

After completing her PhD, Kirsty wanted a job with variety, where she could apply her knowledge of seismology. This led her to her present role as Earthquake Risk Scientist at Aspen Re. This is a reinsurance company, which means it provides insurance to other insurance companies. Kirsty works in its research and development team, where her job is to understand the science behind the risk of earthquakes in different parts of the world and communicate this to her colleagues, who use this information to ensure that the amount of financial risk the company is exposed to from catastrophes is acceptable, and decide on the price of insurance.

The ability to work with computer models and process large data sets that Kirsty developed during her PhD is vital in her work, as is her knowledge of seismology. Kirsty is also grateful to her PhD for helping her develop independence as a researcher. This was essential in the first two and a half years in her job when she was the only earthquake scientist working for the company.

In the first year of her PhD, Kirsty's supervisor asked her to present her work at two conferences, and she remembers being "terrified" at the prospect. This experience paid off though, as she now uses the communication skills she



3D model of a tectonic plate boundary, with different colours showing how much seismic waves are absorbed

developed on a daily basis. She says, "I'm communicating all the time, in the sense that I'm working with underwriters, actuaries, risk managers and other people in different parts of the business or even outside of the business, and I have to give robust reasons for why I'm doing what I'm doing or why I'm recommending what I'm recommending."