

## **Landcare Research PhD Scholarship – Precision Irrigation**

A three year, full-time PhD scholarship is offered to a suitable candidate to study precision irrigation methods, aiming to maximise the benefits from irrigated land.

This PhD study will use innovative sensing methods to assess spatial and temporal variability of soil and plant attributes that relate to water uptake. The sensing methods will include Vis-NIR spectroscopy, electromagnetic and gamma soil surveys. The aim is to fine-tune placement of irrigation to maximise its utilisation by the plant, and minimise deleterious environmental impacts, such as nutrient leaching.

The study will be part of a large research programme where soil scientists, pedometricians and agronomists are researching irrigation water use efficiency.

The student will be expected to develop advanced spatial and temporal modelling methods using the sensor data. The models will need to account for the main factors determining soil moisture storage and supply to crops. There will be opportunities to develop sensing methods, whilst maintaining a focus on the spatial modelling component.

The candidate must have strong statistics and mathematical modelling skills. The candidate should have an appropriate first degree, with experience in soil studies and GIS software. Skills in open-source scripting languages (e.g. R, Python) and their spatial extensions are preferable. A full driver's licence is essential. An NZ\$30,000 per annum scholarship will be provided to cover tuition fees and living allowance. The successful candidate will be co-supervised by Landcare Research and the Soil Sciences Group, Massey University, and based at our Landcare Research Palmerston North site.

Please contact: Dr Carolyn Hedley for further information ([hedleyc@landcareresearch.co.nz](mailto:hedleyc@landcareresearch.co.nz) )

Applications Close: 15 November, 2014