



**Cotton Research and Development Corporation (CRDC)
PhD Scholarship
\$29,000 per annum**

**Molecular ecology of microbial functions involved in plant nutrition and
greenhouse gas emissions in cotton farming systems**

In collaboration with CSIRO Ecosystem Sciences and Flinders University, the Australian CRDC will offer a PhD scholarship valued at \$29,000 per annum for up to 3 years. The scholarship has an additional operating and travel budget of at least \$17,000 for work in this specific soil biological function investigation. The location of this research will be the CSIRO Waite campus and Medical Biotechnology, Flinders University. Other research collaborators in this program include Australian Cotton Research Institute researchers at Narrabri, NSW.

Project description

This project aims to describe the diversity and functional capability of microbial communities involved in nitrogen mineralization, loss and free-living N fixation as influenced by farming practices in Australian cotton soils. The PhD candidate will be involved in specific aspects of the project that include: development of molecular methods relevant to measure microbial diversity and specific gene quantity; determine management induced changes in specific microbial communities and functional gene abundance in Australian cotton soils; quantification of functional significance of N cycling microbial communities in terms of plant nutrition and greenhouse gas emissions. There is scope to evaluate the new techniques in long-term field experiments.

Candidates will be expected to have:

1. An Honours (H1A or H2A) degree, Master's degree (Distinction average) or equivalent in a relevant Life Science discipline
2. Ability & experience to work both independently and as part of an interdisciplinary team.
3. Strong written and oral communication skills.
4. A commitment to applied research and an interest in supporting the development of a sustainable Australian cotton industry.

The student will be enrolled at Flinders University, Adelaide and based at CSIRO Waite campus. The position will require some travel to Narrabri for the collection of samples and interaction with the project team. The student will be co-supervised at Flinders by Professor Chris Franco and Dr. Vadakattu Gupta, CSIRO Ecosystem Science. Professor Franco has over 25 years of experience in actinobacterial and plant-microbial research and Vadakattu Gupta has more than 25 years of expertise in soil microbial diversity research.

Applications

To lodge your Expression of Interest and for further information regarding this scholarship, organisational environment and other aspects of pursuing this PhD, please contact: Dr. Vadakattu Gupta, CSIRO, Ecosystem Sciences, Waite Campus ph: +618 8303 8579 or Prof Chris Franco Medical Biotechnology, School of Medicine, Flinders University, Bedford Park, ph: +618 7221 8554/ 0421 547 016,
Email: chris.franco@flinders.edu.au; Gupta.Vadakattu@csiro.au