

Summary of Linkage Infrastructure, Equipment and Facilities Proposals

South Australia

The University of Adelaide

LE0775482 Prof MJ McLaughlin; Prof JD Foden; Dr S Walker; Dr AS Collins; Dr P Marschner; Prof SE Smith; Prof FA Smith; Dr DJ Chittleborough; Prof A Ball; Dr JC Stangoulis; Dr JK Kirby; Mr BA Zarcinas; Dr MP Hand; Dr BM Gillanders; Dr GP Halverson

Approved Project Title **Ultratrace element and isotope analysis facility**

2007 : \$ 500,000

Primary RFCD 2504 ANALYTICAL CHEMISTRY

Partner Organisations & Collaborating Organisations

CSIRO - Land & Water

The Flinders University of South Australia

Administering Organisation The University of Adelaide

Project Summary

Analysis of trace concentrations of contaminants in food, water and biota is essential for proper environmental and human health protection, and the ability to analyse different isotopes of nutrients will improve our capability to develop techniques to fortify foods with essential micronutrients. The instrumentation will also assist our understanding of the geological processes, climate and environmental change and the formation and location of mineral deposits having economic potential in Australia. By improving forensic identification techniques, the instrumentation will allow identification and tracking of environmental contamination of the food chain and water supplies, and to identify and track criminal and terrorist activity.

LE0775503 Prof MA Tester; Prof P Langridge; Prof A Bacic

Approved Project Title **Robotics for plant genomics: Increasing throughput in plant genetic analyses**

2007 : \$ 255,000

Primary RFCD 2702 GENETICS

Partner Organisations & Collaborating Organisations

The University of Melbourne

Australian Centre for Plant Functional Genomics

Administering Organisation The University of Adelaide

Project Summary

Plant genomics has direct benefit to crop improvement, especially as focussed in the applicants' laboratories. Thus, the Australian agri-food sector will benefit substantially from the acceleration in plant functional genomics that will arise from the installation of the robotics equipment described in the current application, by both underpinning more applied research and also being used directly in crop improvement programs such as are based at the Waite Campus. The outputs will include crops with increased tolerance to biotic and abiotic stresses, a reduced dependence on chemical inputs such as fertilisers and improved food quality, with consequent benefits to the environment and human health and nutrition.

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LE0775778 Prof WD Tilley; Prof JA Owens; A/Prof ML Whitelaw; Dr SA Koblar; Dr MR Beard; Dr GJ Goodall; Prof RA McKinnon; Prof D Watson

Approved Project Title **A microarray platform for gene expression analysis and genotyping in biological systems**

2007 : \$ 196,000

Primary RFCD 2702 GENETICS

Partner Organisations & Collaborating Organisations

University of South Australia
The Flinders University of South Australia
Institute of Medical and Veterinary Science

Administering Organisation The University of Adelaide

Project Summary

This technology has substantial benefits for basic science and biotechnology. The ability to rapidly study changes in gene expression in living organisms will benefit agriculture, animal and biomedical science and biotechnology. The Affymetrix platform creates opportunities for new avenues of research, such as studying epigenetic (DNA and protein modifications) mechanisms in development, ageing and disease. The project falls within the designated national research priority areas of 'promoting and maintaining good health' and the priority goals of "a healthy start to life", "aging well", "aging productively" and "preventative health care."