

## EDUCATION, SCIENCE AND TRAINING

### SENATE LEGISLATION COMMITTEE - QUESTIONS ON NOTICE 2003-2004 ADDITIONAL ESTIMATES HEARING

**Outcome:** 3

**Output Group:** 3.2 – Assistance for science collaboration and innovation

#### **DEST Question No. E861\_04**

Senator Carr provided in writing.

#### **Question:**

Please list, over the past year, the geographical location and the function of all CRC programme expenditure across Australia?

#### **Answer:**

##### *Geographical location of CRCs*

The following response provides the research focus and a listing of research locations of all Cooperative Research Centres funded in the 2002-03 financial year (Attachment A). The CRCs would also have undertaken education and training and commercialisation/utilisation/technology transfer activities related to their research focus. CRCs are listed by sector and then in alphabetical order.

## **Agriculture and Rural Based Manufacturing**

### **Australian Cotton CRC**

**Date Established:** 1 July 1999

**Research Focus:** To enhance sustainable farming systems which are environmentally responsible, enhance reliability of production and increase market competitiveness.

#### **Research Locations**

- NSW Department of Agriculture, Orange, NSW
- NSW Department of Agriculture, Tamworth, NSW
- NSW Department of Agriculture, Bourke, NSW
- NSW Department of Agriculture, Lismore, NSW
- NSW Department of Agriculture, Sydney, NSW
- NSW Department of Agriculture, Griffith, NSW
- NSW Department of Agriculture, Dubbo, NSW
- NSW Department of Agriculture, Armidale, NSW
- NSW Department of Agriculture, Tamworth, NSW
- University of New England, Armidale, NSW
- University of Sydney, Sydney, NSW
- Queensland Department of Primary Industry, Rockhampton, Qld
- Queensland Department of Primary Industry, Toowoomba, Qld
- Queensland Department of Primary Industry, Brisbane, Qld
- NT Department of Primary Industry and Fisheries, Katherine, NT
- CSIRO, Canberra, ACT

### **CRC for Australian Sheep Industry**

**Date Established:** 1 July 2001

**Research Focus:** To develop new technologies, management practices and marketing strategies to make the sheep industry more profitable and sheep products more highly sought-after by consumers.

#### **Research Locations**

- CSIRO, Armidale, NSW
- University of New England, Armidale, NSW
- NSW Department of Agriculture, Orange, NSW
- Queensland Department of Primary Industry, Yeerongpilly, Qld
- VIC Department of Primary Industries, Werribee, Vic
- South Australian Research and Development Institute, Roseworthy, SA
- Murdoch University, Perth, WA
- WA Department of Agriculture, Mount Barker, WA

### **CRC for Cattle and Beef Quality**

**Date Established:** 1 July 1999

**Research Focus:** To address consistent eating quality of beef by innovative genetic, nutritional and management technologies, applicable to grass and grain-finished production systems; to improve standards of food safety and reduced stress in beef cattle from new microbiological and chemical surveillance techniques.

#### **Research Locations**

- NSW Department of Agriculture, Glen Innes, NSW
- NSW Department of Agriculture, Sydney, NSW
- NSW Department of Agriculture, Wagga Wagga, NSW
- NSW Department of Agriculture, Grafton, NSW
- University of New England, Armidale, NSW
- CSIRO, Rockhampton, Qld
- Agriculture Victoria, Melbourne, Vic
- Struan Research Centre, Struan, SA
- Agriculture Western Australia, Vasse, WA

**CRC for Innovative Dairy Products****Date Established:** 1 July 2001**Research Focus:** To develop innovative products using genomic technologies.**Research Locations**

- Garvan Institute of Medical Research, Sydney, NSW
- University of Sydney, Sydney, NSW
- Australian Dairy Farmers Federation, Melbourne, Vic
- Genetics Australia, Melbourne, Vic
- Monash University, Melbourne, Vic
- University of Melbourne, Melbourne, Vic
- CSIRO, Indooroopilly, Qld
- Australian National University, Canberra, ACT

**CRC for Molecular Plant Breeding****Date Established:** 1 July 1997**Research Focus:** To develop new technologies in molecular biology and implement effective strategies for their use in cereal and pasture grass breeding programs.**Research Locations**

- Southern Cross University, Lismore, NSW
- University of Melbourne, Melbourne, Vic
- VIC Department of Natural Resources and the Environment, Hamilton, Vic
- VIC Department of Natural Resources and the Environment, Horsham, Vic
- University of Adelaide, Adelaide, SA

**CRC for Sustainable Aquaculture of Finfish****Date Established:** 1 July 2001**Research Focus:** To provide critical technologies for rapid and sustainable growth of finfish aquaculture in Australia.**Research Locations**

- NSW Fisheries Office, Port Stephens, NSW
- Pisces Marine Aquaculture Pty Ltd, Sydney, NSW
- University of Technology Sydney, Sydney, NSW
- Silver Beach Aquaculture Pty Ltd, Sydney, NSW
- James Cook University, Townsville, Qld
- Queensland Department of Primary Industry, Brisbane, Qld
- University of Queensland, Brisbane, Qld
- CSIRO, Geelong, Vic
- Flinders University of South Australia, Adelaide, SA
- South Australian Research and Development Institute, Adelaide, SA
- Tuna Boat Owners Association of South Australia Incorporated, Port Lincoln, SA
- Fisheries Western Australia, Perth, WA
- Gibson's Limited, Hobart, Tas
- Tasmanian Salmoid Growers Association Limited, Hobart, Tas
- Tassal Limited, Hobart, Tas
- University of Tasmania, Hobart, Tas
- University of Tasmania, Launceston, Tas

### **CRC for Sustainable Production Forestry**

**Date Established:** 1 July 1997

**Research Focus:** Genetic Improvement, Sustainable Management, and Resource Protection of five important species of plantation forestry in Australia, namely *Eucalyptus nitens* and *E. globulus* in temperate regions and *Pinus elliotii*, *P. caribaea* and *Araucaria cunninghamii* in sub-tropical regions.

#### **Research Locations**

- Southern Cross University, Lismore, NSW
- Griffith University, Brisbane, Qld
- University of Queensland, Brisbane, Qld
- Grand Ridge Plantations Pty Ltd, Morwell, Vic
- Timbercorp Limited, Panton Hill, Vic
- WACAP Treefarms Pty Ltd, Perth, WA
- CSIRO, Hobart, Tas
- Forestry Tasmania, Hobart, Tas
- Gunns Limited, Burnie, Tas
- Norske Skog Paper Mills (Australia) Ltd, Hobart, Tas
- University of Tasmania, Hobart, Tas
- Australian National University, Canberra, ACT
- CSIRO, Canberra, ACT

### **CRC for Sustainable Rice Production**

**Date Established:** 1 July 1997

**Research Focus:** To increase the economic contribution of the rice industry through increased production efficiency, increased revenue from new value-added products and increased exports, and improvements in the management of soil and water resources.

#### **No. of Research Locations**

- Charles Sturt University, Wagga Wagga, NSW
- CSIRO, Griffith, NSW
- NSW Department of Infrastructure, Planning & Natural Resources, Sydney, NSW
- NSW Department of Agriculture, Albury, NSW
- NSW Department of Agriculture, Griffith, NSW
- NSW Department of Agriculture, Orange, NSW
- Ricegrowers' Cooperative Ltd, Griffith, NSW
- University of Sydney, Sydney, NSW
- CSIRO, Canberra, ACT

### **CRC for Sustainable Sugar Production**

**Date Established:** 1 July 1995

**Research Focus:** Farm and catchment management practices; nutrient and chemical losses into the environment; and technologies to enhance the productive and sustainable use of soil and water resources.

#### **Research Locations:**

- NSW Sugar Milling Cooperative Ltd, Ballina, NSW
- Bundaberg Sugar Ltd, Bundaberg, Qld
- Bureau of Sugar Experiment Stations, Brisbane, Qld
- Central Queensland University, Rockhampton, Qld
- CSIRO, Brisbane, Qld
- CSR Sugar Macknade Mill, Macknade, Qld
- Queensland Department of Natural Resources and Mines, Brisbane, Qld
- University of Queensland, Brisbane, Qld

### **CRC for Tropical Plant Protection**

**Research Focus:** Plant Protection strategic research for northern Australia, with a major focus on disease and pest prevention through improved diagnostics, and on the increased use of disease and pest resistant plant cultivars.

**Date Established:** 1 July 1999

#### **Research Locations**

- Bureau of Sugar Experiment Stations, Brisbane, Qld
- Queensland Department of Primary Industries, Toowoomba, Qld
- University of Queensland, Brisbane, Qld
- Charles Darwin University, Darwin, NT
- Australian National University, Canberra, ACT

### **CRC for Value Added Wheat**

**Date Established:** 1 July 2001

**Research Focus:** To increase knowledge of wheat quality in the areas of proteomics, chimeraplasty, molecular markers (also utilising microchip advances), engineered antibody technologies, capillary electrophoresis and imaging.

#### **Research Locations**

- Arnotts Biscuits Ltd, Sydney, NSW
- Goodman Fielder Limited, Sydney, NSW
- NSW Department of Agriculture, Orange, NSW
- NSW Department of Agriculture, Moree, NSW
- NSW Department of Agriculture, Tamworth, NSW
- NSW Department of Agriculture, Wagga Wagga, NSW
- University of Sydney, Armidale, NSW
- University of Sydney, Sydney, NSW
- WA Department of Agriculture, Perth, WA

### **CRC for Viticulture**

**Date Established:** 1 July 1999

**Research Focus:** To accelerate quality viticultural management from 'vine to palate', ensuring the economic and environmental sustainability of Australia's grape growing industries through nationally-integrated strategic research, proactive technology diffusion and education.

#### **Research Locations**

- Wine Industry National Education Training and Advisory Council Inc, Wagga Wagga, NSW
- VIC Department of Primary Industries, Mildura, Vic
- VIC Department of Primary Industries, Melbourne, Vic
- VIC Department of Primary Industries, Tatura, Vic
- University of Adelaide, Adelaide, SA
- South Australian Research and Development Institute, Riverland, SA
- VIC Department of Primary Industries, Barossa Valley, SA

## **Environment**

### **CRC for Antarctica and the Southern Ocean**

**Date Established:** 1 July 1997

**Research Focus:** To achieve improvements in the simulation of global climate and prediction of climate and environmental change of the Southern Ocean and Antarctica and enhance the knowledge base on which rational decisions can be made for the protection of the Southern Ocean and Antarctica.

#### **Research Locations**

- University of Tasmania

### **CRC for Australian Weed Management**

**Date Established:** 1 July 2001

**Research Focus:** To reduce the risks facing the environment, agricultural and rural sectors from current weeds and an increasing number of weed incursions from overseas.

#### **Research Locations**

- NSW Department of Agriculture, Wagga Wagga, NSW
- University of Adelaide, Adelaide, SA
- University of Western Australia, Perth, WA

- CSIRO, Canberra, ACT

#### **CRC for Catchment Hydrology**

**Date Established:** 1 July 1999

**Research Focus:** To provide land and water managers with the capability to predict the hydrologic impacts of catchment management.

**No. of Research Locations in Electorate:** 1 of 5

- Griffith University, Brisbane, Qld
- Monash University, Melbourne, Vic
- University of Melbourne, Melbourne, Vic
- CSIRO, Canberra, ACT

#### **CRC for Coastal Zone, Estuary and Waterway Management**

**Date Established:** 1 July 1999

**Research Focus:** To provide decision-making tools and knowledge necessary for the effective management and ecosystem health of the coastal zone, estuaries and waterways.

**Research Locations**

- Central Queensland University, Rockhampton, Qld
- CSIRO, Rockhampton, Qld
- Queensland Department of Natural Resources and Mines, Brisbane, Qld
- Curtin University of Technology, Perth, WA

#### **CRC for Conservation and Management of Marsupials**

**Date Established:** 1 July 1995

**Research Focus:** To develop appropriate techniques for the management of captive and wild populations.

**Research Locations:**

- CRC for Conservation and Management of Marsupials, Sydney, NSW
- Macquarie University, Sydney, NSW
- University of Newcastle, Newcastle, NSW
- Perth Zoo, Perth, NSW

#### **CRC for Freshwater Ecology**

**Date Established:** 1 July 1999

**Research Focus:** To provide the latest ecological knowledge needed to manage rivers in a sustainable way, specialising in river system ecology, river restoration and sustainable river management.

**Research Locations**

- Murray-Darling Basin Commission, Albury, NSW
- Griffith University, Brisbane, Qld
- Monash University, Melbourne, Vic
- University of Adelaide, Adelaide, SA
- University of Canberra, Canberra, ACT

#### **CRC for Greenhouse Accounting**

**Date Established:** 1 July 1999

**Research Focus:** To enhance management of greenhouse emissions through improved methodologies for measuring carbon in terrestrial ecosystems, by assisting stakeholders explore available options for better managing carbon sequestration and conducting research that advances fundamental understanding of the carbon cycle.

**Research Locations:**

- NSW State Forests, Sydney, NSW
- Queensland Department of Natural Resources and Mines, Brisbane, Qld
- Queensland Department of Primary Industry, Brisbane, Qld
- WA Department of Conservation and Land Management, Perth, WA
- Australian Greenhouse Office, Canberra, ACT
- Australian Government Department of Agriculture, Forestry and Fisheries, Canberra, ACT
- Australian National University, Canberra, ACT
- CSIRO, Canberra, ACT

### **CRC for Plant-based Management of Dryland Salinity**

**Date Established:** 1 July 2001

**Research Focus:** Management of dry land salinity through the use of profitable, perennial plant-based farming systems

**Research Locations:**

- NSW Department of Agriculture, Orange, NSW
- Victorian Department of Sustainability and Environment, Melbourne, Vic
- SA Department of Primary Industries and Resources, Adelaide, SA
- University of Adelaide, Adelaide, SA
- University of Western Australia, Perth, WA

### **CRC for Sustainable Tourism**

**Date Established:** 1 July 1997

**Research Focus:** To develop a dynamic, internationally competitive and sustainable tourism industry, through delivering innovation and strategic knowledge to business, community and government to enhance the environmental, economic and social sustainability of tourism.

**Research Locations**

- NSW National Parks and Wildlife Service, Sydney, NSW
- Southern Cross University, Lismore, NSW
- University of New South Wales, Sydney, NSW
- University of Technology Sydney, Sydney, NSW
- Griffith University, Gold Coast, Qld
- James Cook University, Townsville, Qld
- National Centre for Tourism, Brisbane, Qld
- Queensland Tourist and Travel Corporation, Brisbane, Qld
- University of Queensland, Brisbane, Qld
- Victoria University of Technology, Melbourne, Vic
- Murdoch University, Perth, WA
- Charles Darwin University, Darwin, NT

### **CRC for the Biological Control of Pest Animals**

**Date Established:** 1 July 1999

**Research Focus:** To reduce the environmental and economic impact of introduced pest animals.

**Research Locations in Electorate:** 1 of 7

- University of Sydney, Sydney, NSW
- University of Adelaide, Adelaide, SA
- University of Western Australia, Perth, WA
- Australian National University, Canberra, ACT
- CSIRO, Canberra, ACT

### **CRC for the Great Barrier Reef World Heritage Area**

**Date Established:** 1 July 1999

**Research Focus:** To address strategic issues relating to the ecologically sustainable development and multiple use of the Great Barrier Reef World Heritage Area and the protection of the ecological integrity and values of the area.

**Research Locations:**

- Australian Institute of Marine Science, Townsville, Qld
- James Cook University, Townsville, Qld
- Queensland Department of Primary Industry, Cairns, Qld

### **CRC for Tropical Rainforest Ecology and Management**

**Date Established:** 1 July 1999

**Research Focus:** To support the sustainable use, management and conservation of Australia's tropical rainforests. Research is focussed towards improving environmental planning and decision-making at the biological and regional level.

**Research Locations:**

- CSIRO, Atherton, Qld
- Griffith University, Brisbane, Qld
- James Cook University, Townsville, Qld
- Wet Tropics Management Authority, Cairns, Qld

- University of Queensland, Brisbane, Qld

### **CRC for Tropical Savannas Management**

**Date Established:** 1 July 2001

**Research Focus:** To develop scientific analysis and concepts about the ecological, economic and social functioning of savanna landscapes for the benefit of the Australian tropical savannas and the people who use them.

**Research Locations:**

- James Cook University, Townsville, Qld
- Queensland Parks and Wildlife Service, Cairns, Qld
- Queensland Government, Cairns, Qld
- Queensland Government, Charters Towers, Qld
- North Australia Beef Research Council, Broome, WA
- WA Department of Conservation and Land Management, Broome, WA
- NT Government, Darwin, NT
- NT Government, Katherine, NT
- Charles Darwin University, Darwin, NT
- CSIRO, Darwin, NT

### **CRC for Waste Management and Pollution Control**

**Date Established:** 1 July 1997

**Research Focus:** Innovation in treatment of both wastewater and solid waste, the detection and treatment of contaminants, and minimisation of waste in all stages of production.

**Research Locations:**

- Australian Nuclear Science and Technology Organisation (ANSTO), Lucas Heights, NSW
- Bathurst City Council, Bathurst, NSW
- University of NSW, Sydney, NSW
- University of Queensland, Noosa, Qld
- EPA (NSW), Moe, Vic



## **CRC for Water Quality and Treatment**

**Date Established:** 1 July 2001

**Research Focus:** To provide the knowledge base to achieve better, evidence-based investment decisions by government; a regulatory framework that is soundly based on high quality health risk assessment research; a high level of community confidence in the safety of public water supply systems; and enhanced aesthetic quality that meets community expectations and the requirements of the tourism..

### **Research Locations**

- Australian Water Services Pty Ltd, Sydney, NSW
- Sydney Catchment Authority, Sydney, NSW
- Sydney Water Corporation, Sydney, NSW
- University of New South Wales, Sydney, NSW
- Brisbane City Council, Brisbane, Qld
- Griffith University, Brisbane, Qld
- Queensland Environmental Protection Agency, Brisbane, Qld
- Queensland Health Pathology & Scientific Services, Brisbane, Qld
- University of Queensland, Brisbane, Qld
- CSIRO, Melbourne, Vic
- Melbourne Water Corporation, Melbourne, Vic
- Monash University, Melbourne, Vic
- Orica Australia Pty Ltd, Melbourne, Vic
- Royal Melbourne Institute of Technology, Melbourne, Vic
- South East Water Ltd, Melbourne, Vic
- Victorian Department of Human Services, Melbourne, Vic
- Yarra Valley Water Ltd, Melbourne, Vic
- ACTEW Corporation Ltd, Adelaide, SA
- Australian Water Quality Centre, Adelaide, SA
- South Australian Water Corporation, Adelaide, SA
- United Water International Pty Ltd, Adelaide, SA
- University of South Australia, Adelaide, SA
- Curtin University of Technology, Perth, WA
- Water Corporation (WA), Perth, WA
- Centre for Appropriate Technology Incorporate, Alice Springs, NT
- Power & Water Authority (NT), Darwin, NT

## **Information and Communication Technology**

### **Australian Photonics CRC**

**Date Established:** 1 July 1999

**Research Focus:** Photonics Integrated Circuits; Novel Photonic Components; Telecommunications Technologies; Photonic Sensors and Signal Processing Technologies.

### **Research Locations**

- University of Sydney, Sydney, NSW
- University of Melbourne, Melbourne, Vic
- Department of Defence, Adelaide, SA
- Australian National University, Canberra, ACT

**Australian Telecommunications CRC****Date Established:** 1 July 1999**Research Focus:** To create technologies for advanced telecommunication services.**Research Locations**

- CSIRO, Sydney, NSW
- Open Telecommunications Limited, Sydney, NSW
- Vodafone, Sydney, NSW
- Agilent Technologies Australia Pty Ltd, Melbourne, Vic
- Ericsson Australia Pty Ltd, Melbourne, Vic
- Monash University, Melbourne, Vic
- Radio Frequency Systems Pty Ltd, Melbourne, Vic
- Royal Melbourne Institute of Technology, Melbourne, Vic
- Strategic Industry Research Foundation Limited, Melbourne, Vic
- Victorian University of Technology, Melbourne, Vic
- Curtin University of Technology, Perth, WA
- University of Western Australia, Perth, WA

**CRC for Enterprise Distributed Systems Technology****Date Established:** 1 July 1999**Research Focus:** To achieve fundamental improvements to Australian organisational competitiveness and efficiency through conducting and exploiting research in enterprise distributed systems technologies.**Research Locations**

- University of Technology Sydney, Sydney, NSW
- DSTC Pty Ltd, Brisbane, Qld
- Monash University, Melbourne, Vic
- University of South Australia, Adelaide, SA

**CRC for Satellite Systems****Date Established:** 1 January 1998**Research Focus:** To deliver sustainable advantage for Australian industries and government agencies based on the applications of small satellites, through targeted research and development in communication, space science and space engineering.**Research Locations**

- CSIRO, Sydney, NSW
- University of Newcastle, Newcastle, NSW
- University of Technology Sydney, Sydney, NSW
- Queensland University of Technology, Brisbane, Qld
- La Trobe University, Melbourne, Vic
- University of South Australia, Adelaide, SA
- VIPAC Engineers and Scientists Pty Ltd, Adelaide, SA
- Auspace Ltd, Canberra, ACT
- CSIRO, Canberra, ACT

**CRC for Sensor Signal and Information Processing****Date Established:** 1 July 1999**Research Focus:** To provide R&D support in the field of signal and information processing for Australian companies and other end-users in the defence, surveillance, mining and medical sectors. Research activities are structured into five subprograms: Distributed Sensor and Information Systems, Sensor Signal Processing, Medical Imaging, Area Surveillance Technology and Video Surveillance.**Research Locations**

- University of Queensland, Brisbane, Qld
- University of Melbourne, Melbourne, Vic
- University of Adelaide, Adelaide, SA

### **CRC for Smart Internet Technology**

**Date Established:** 1 July 2001

**Research Focus:** To capitalise for Australia the outcomes of fundamental research and development of the future Internet and global connectivity by building the information technology (IT) infrastructure required to improve the ease of use and the management of an Internet that is rapidly increasing in complexity.

#### **Research Locations**

- Australian Graduate School of Management, Sydney, NSW
- Motorola Australia Pty Limited, Sydney, NSW
- University of New South Wales, Sydney, NSW
- University of Wollongong, Wollongong, NSW
- Griffith University, Brisbane, Qld
- Adacel Technologies Limited, Melbourne, Vic
- Royal Melbourne Institute of Technology, Melbourne, Vic
- Swinburne University of Technology, Melbourne, Vic
- Telstra Corporation Limited, Melbourne, Vic
- University of Adelaide, Adelaide, SA
- University of Tasmania, Hobart, Tas
- Australian National University, Canberra, ACT

### **CRC for Technology Enabled Capital Markets**

**Date Established:** 1 July 2001

**Research Focus:** To design and build technology in all areas of financial markets (pre-trade, trading, surveillance, settlement and registry) with a view to providing an open architected full solution that will permit inter-operability among systems (eg. futures, equities, bonds) as well as being secure and financially scalable.

#### **Research Locations**

- SMARTS Pty Ltd, Sydney, NSW
- University of New South Wales, Sydney, NSW
- University of Sydney, Sydney, NSW
- University of Technology Sydney, NSW

### **Manufacturing Technology**

#### **CRC for Advanced Composite Structures**

**Date Established:** 1 July 1996

**Research Focus:** Design, manufacture and performance of structural composites for automotive and aerospace applications.

#### **Research Locations**

- CRC Advanced Composite Structures, Sydney, NSW
- University of Newcastle, Newcastle, NSW
- CRC Advanced Composite Structures, Melbourne, Vic

#### **CRC for Bioproducts**

**Date Established:** 1 July 1999

**Research Focus:** To develop commercially valuable materials produced by plants and other living organisms, such as natural colours, complementary medicines, nutraceuticals, pharmaceutical intermediates and biopolymers; to establish new industries based on these novel bioproducts and bioprocesses, and to improve the efficiency and profitability of existing industries involved in the production and use of bioproducts.

#### **Research Locations**

- University of New South Wales, Sydney, NSW
- Food Science Australia Ltd, Melbourne, Vic
- Tridan Ltd - Albright & Wilson (Aust) Limited Partnership, Melbourne, Vic
- University of Melbourne, Melbourne, Vic

**CRC for CAST Metals Manufacturing****Date Established:** 1 July 1999**Research Focus:** Development and implementation of key technologies that substantially contribute to the growth and international competitiveness of a vertically integrated Australian light metals production, processing and manufacturing industry.**Research Locations**

- University of Queensland, Brisbane, Qld
- Deakin University, Geelong, Vic
- Swinburne University of Technology, Melbourne, Vic

**CRC for Construction Innovation****Date Established:** 1 July 2001**Research Focus:** Virtual environments for lifecycle design and construction; construction project delivery strategies; environmental sustainability; integrated design and construction support systems; and management and adaptability of built assets.**Research Locations**

- University of Sydney, Sydney, NSW
- Queensland University of Technology, Brisbane, Qld
- Royal Melbourne Institute of Technology, Melbourne, Vic

**CRC for Functional Communication Surfaces****Date Established:** 1 July 2001**Research Focus:** To develop products and manufacturing processes in the rapidly expanding area of enhanced communication surfaces for the knowledge economy.**Research Locations**

- CSIRO, Melbourne, Vic
- Australian National University, Canberra, ACT

**CRC for Intelligent Manufacturing Systems and Technologies****Date Established:** 1 July 1999**Research Focus:** To address the needs of the Australian machine tool industry, plastics processing and machining, aerospace design and assembly, metal cutting and forming and new generation machine specification, design and control.**Research Locations**

- Allied, Sydney, NSW
- University of New South Wales, Sydney, NSW
- University of Wollongong, Wollongong, NSW
- CSIRO, Melbourne, Vic
- Royal Melbourne Institute of Technology, Melbourne, Vic
- CSIRO, Adelaide, SA
- Dynek Australia Pty Ltd, Adelaide, SA
- Godfrey Office Equipment, Adelaide, SA
- Mitsubishi Motors Australia Pty Ltd, Adelaide, SA
- Philmac Pty Ltd, Adelaide, SA
- Sola International Holdings Ltd, Adelaide, SA
- University of South Australia, Adelaide, SA

**CRC for MicroTechnology****Date Established:** 1 July 1999**Research Focus:** Micro-manufacturing technologies, packaging systems for aggressive and in-vitro environments, alternative materials to silicon, design, simulation & testing; high performance micro-devices, flexible substrates & micro-electrodes, micro fluidic devices and integrated systems.**Research Locations**

- Griffith University, Brisbane, Qld
- CSIRO, Melbourne, Vic
- Royal Melbourne Institute of Technology, Melbourne, Vic
- Swinburne University of Technology, Melbourne, Vic

**CRC for Polymers****Date Established:** 1 July 1999**Research Focus:** To develop innovative polymer science and technology that will assist Australian manufacturers to reduce production costs, increase recycling, and produce higher value added and improved products that can compete more effectively in local and export markets.**Research Locations**

- Australian Nuclear Science and Technology Organisation, Sydney, NSW
- University of New South Wales, Sydney, NSW
- University of Sydney, Sydney, NSW
- CSIRO, Melbourne, Vic
- Defence Science and Technology Organisation, Melbourne, Vic
- Moldflow Pty Ltd, Melbourne, Vic
- Monash University, Melbourne, Vic
- Qenos Pty Ltd, Melbourne, Vic
- Royal Melbourne Institute of Technology, Melbourne, Vic
- Visy Plastics Pty Ltd, Melbourne, Vic
- Sola International Holdings Ltd, Adelaide, SA

**CRC for Railway Engineering and Technologies****Date Established:** 1 July 2001**Research Focus:** To improve railway efficiency through engineering and information technologies.**Research Locations**

- University of Wollongong, Wollongong, NSW
- Central Queensland University, North Rockhampton, Qld
- Queensland University of Technology, Brisbane, Qld
- Monash University, Melbourne, Vic
- University of South Australia, Adelaide, SA

**CRC for Welded Structures****Date Established:** 1 July 1999**Research Focus:** To address issues in the total product life cycle of welded structures.**Research Locations**

- Australian Nuclear Science and Technology Organisation, Sydney, NSW
- University of Sydney, Sydney, NSW
- University of Wollongong, Wollongong, NSW
- University of Adelaide, Adelaide, SA
- CSIRO, Adelaide, SA
- University of Western Australia, Perth, WA

**CRC for Wood Innovations****Establishment Date:** 1 July 2001**Research Focus:** Fundamental properties of microwave energy and its influence on wood modification: the relief of growth stresses in logs and sawn timber and improvements in wood permeability; surface engineering of machined wood for enhancing adhesion and long-term retention of bondability for surface coatings; design and manufacture of high value furniture and wood products from microwave modified wood; and design durability of wooden components.**Research Locations**

- Kempsey Timbers Pty Limited, Kempsey, NSW
- Queensland Department of Primary Industry, Brisbane, Qld
- Black Forest Timbers Pty Ltd, Melbourne, Vic
- University of Melbourne, Melbourne, Vic
- Auspine Limited, Adelaide, SA
- Forest Products Commission, Perth, WA
- Australasian Furnishing Research and Development Institute Limited, Launceston, Tas

## **Medical**

### **CRC for Aboriginal and Tropical Health**

**Date Established:** 1 July 1997

**Research Focus** To help to achieve: better strategies for cross-cultural cooperation and service delivery in Aboriginal education and health programmes; more effective public health and biomedical interventions to reduce the adverse health effects of social disadvantage, infectious disease, poor nutrition and substance abuse in Aboriginal communities; improved opportunities for professional health training, particularly for Aboriginal people; and better health outcomes for Aboriginal people in northern and central Australia and for people living in tropical regions.

**Research Locations:**

- Central Australian Aboriginal Congress, Alice Springs, NT
- Menzies School of Health Research, Darwin, NT
- Northern Territory Department of Health and Community Services, Darwin, NT

### **CRC for Asthma**

**Date Established:** 1 October 1999

**Research Focus:** Asthma prevention; asthma treatment (quality use of medicines); and diagnostic, monitoring and delivery devices.

**Research Locations**

- Garvan Institute of Medical Research, Sydney, NSW
- Woolcock Institute of Medical Research, Sydney, NSW
- Monash University, Melbourne, Vic
- University of Western Australia, Perth, WA

### **CRC for Cellular Growth Factors**

**Date Established:** 1 July 1997

**Research Focus:** Molecular control of cell behaviour by growth factors, from basic biological discovery through to production, clinical trials and commercialisation.

**Research Locations**

- AMRAD Operations, Melbourne, Vic
- Biomolecular Research Institute, Melbourne, Vic
- CSIRO Molecular Science, Melbourne, Vic
- Ludwig Institute for Cancer Research, Melbourne, Vic
- Walter and Eliza Hall Institute of Medical Research, Melbourne, Vic

### **CRC for Chronic Inflammatory Diseases**

**Date Established:** 1 July 2001

**Research Focus:** Finding better treatments for serious chronic degenerative inflammatory diseases. These diseases include rheumatoid arthritis (RA), chronic obstructive pulmonary disease (COPD), inflammatory bowel disease, atherosclerosis, and psoriasis.

**Research Locations**

- Monash University, Melbourne, Vic
- University of Melbourne, Melbourne, Vic
- University of Queensland, Brisbane, Vic

### **CRC for Cochlear Implant and Hearing Aid Innovation**

**Date Established:** 1 July 1999

**Research Focus:** Innovations enabling new hearing technology products including a new generation Bionic Ear with improved capabilities, totally implantable neuroelectric and acoustic hearing prostheses, and intelligent hearing aids for those with mild and moderate hearing losses.

**Research Locations**

- Australian Hearing Services, Sydney, NSW
- Cochlear Ltd, Sydney, NSW
- New Children's Hospital, Sydney, NSW
- Bernafon Australia Pty Ltd, Brisbane, Qld
- Bionic Ear Institute, Melbourne, Vic
- Royal Victorian Eye and Ear Hospital, Melbourne, Vic
- University of Melbourne, Melbourne, Vic

### **CRC for Diagnostics**

**Date Established:** 1 July 2001

**Research Focus:** To develop innovative integrated protein and nucleic acid based technologies, processes and products for the rapid diagnosis and monitoring of human diseases and phenotypes.

#### **Research Locations:**

- Queensland University of Technology, Brisbane, Qld
- La Trobe University, Melbourne, Vic
- Child Health Research Institute, Adelaide, SA
- CSIRO, Adelaide, SA

### **CRC for Discovery of Genes for Common Human Diseases**

**Date Established:** 1 July 1997

**Research Focus:** The genetic basis of common, complex human diseases, with major projects directed towards: Endometriosis, Multiple Sclerosis, Insulin-Dependent Diabetes Mellitus, Melanoma and Attention Deficit Hyperactivity Disorder.

#### **Research Locations**

- Institute for Molecular Bioscience, Brisbane, Qld
- Queensland Institute of Medical Research, Brisbane, Qld
- Cerylid Bioscience, Melbourne, Vic
- Murdoch Institute (VIC), Melbourne, Vic
- Walter and Eliza Hall Institute of Medical Research, Melbourne, Vic

### **CRC for Eye Research and Technology**

**Date Established:** 1 July 1997

**Research Focus:** Contact lens: surface compatibility; avoiding bacterial contamination; ocular comfort and clinical research.

#### **Research Locations**

- CRC for Eye Research and Technology, Sydney, NSW
- CSIRO, Sydney, NSW
- Optometric Vision Research Foundation, Sydney, NSW
- University of New South Wales, Sydney, NSW
- University of Western Sydney, Sydney, NSW
- Queensland University of Technology, Brisbane, Qld
- CSIRO, Melbourne, Vic
- National Vision Research Institute, Melbourne, Vic

### **CRC for Vaccine Technology**

**Date Established:** 1 July 1999

**Research Focus:** To develop generic technologies for the design and development of future medical and veterinary vaccines.

#### **Research Locations**

- CSIRO, Sydney, NSW
- Queensland Institute of Medical Research, Brisbane, Qld
- Australian Red Cross Blood Service, Melbourne, Vic
- CSL Limited, Melbourne, Vic
- Monash University, Melbourne, Vic
- University of Melbourne, Melbourne, Vic
- Walter and Eliza Hall Institute of Medical Research, Melbourne, Vic

## **Mining and Energy**

### **AJ Parker CRC for Hydrometallurgy**

**Date Established:** 1 July 1999

**Research Focus:** Hydrometallurgy's role in the processing of many mineral products including alumina, gold, zinc, nickel, copper, uranium, manganese dioxide, salt and titanium dioxide.

#### **Research Locations**

- CSIRO. Perth, WA
- Curtin University of Technology, Perth, WA
- Murdoch University, Perth, WA

**Australian CRC for Renewable Energy****Date Established:** 1 July 1996**Research Focus:** Commercially oriented research and development in renewable energy, mainly in remote and fringe of grid applications.**Research Locations**

- University of New South Wales, Sydney, NSW
- University of Technology Sydney, Sydney, NSW
- Curtin University of Technology, Perth, Qld
- Queensland University of Technology, Brisbane, Qld
- Murdoch University, Perth, WA
- Westwind Turbines Ltd, Perth, WA
- ZBB Technologies Ltd, Perth, WA
- Charles Darwin University, Darwin, NT
- Power and Water Authority, Darwin, NT
- Australian National University, Canberra, ACT
- Centre for Appropriate Technology Inc, Alice Springs, ACT

**Australian Petroleum CRC****Date Established:** 1 July 1997**Research Focus:** Hydrocarbon sealing potential of faults and caprocks., reservoir characterisation and improved oil recovery, pre-drill pore pressure prediction, liquid hydrocarbons from source to trap, improved seismic imaging, and geological disposal of carbon dioxide.**Research Locations:**

- CSIRO, Sydney, NSW
- University of NSW, Sydney, NSW
- CSIRO, Melbourne, Vic
- University of Adelaide, Adelaide, SA
- CSIRO, Perth, WA
- Curtin University of Technology, Perth, WA
- CSIRO, Canberra, ACT

**CRC for Clean Power from Lignite****Date Established:** 1 July 1999**Research Focus:** To develop power generation technologies that are highly efficient and cost competitive; and make possible a substantial reduction in Greenhouse Gas (GHG) emissions from power generation.**Research Locations**

- CSIRO, Melbourne, Vic
- Monash University, Melbourne, Vic
- Swinburne University of Technology, Melbourne, Vic
- University of Adelaide, Adelaide, SA

**CRC for Coal in Sustainable Development****Date Established:** 1 July 2001**Research Focus:** Sustainable impacts, life cycle assessment, process technology systems analysis and waste utilisation with a focus on strategic options for coal in sustainable development.**Research Locations:**

- CSIRO, Newcastle, NSW
- Macquarie University, Sydney, NSW
- University of New South Wales, Sydney, NSW
- University of Newcastle, Newcastle, NSW
- CSIRO, Brisbane, Qld
- University of Queensland, Brisbane, Qld
- Curtin University of Technology, Perth, WA



**CRC for Landscape Environments and Mineral Exploration****Date Established:** 1 July 2001**Research Focus:** To provide breakthroughs in mineral exploration in areas characterised by substantial cover (>100m), with flow-ons of airborne geophysical methods and regolith knowledge to environmental studies, particularly addressing national dry land salinity issues.**Research Locations:**

- CSIRO, Adelaide, SA
- SA Dept of Primary Industry, Adelaide, SA
- CSIRO, Perth, WA
- Curtin University of Technology, Perth, WA
- Australian National University, Canberra, ACT
- Geoscience Australia, Canberra, ACT

**CRC for Mining Technology and Equipment****Date Established:** 1 July 1997**Research Focus:** To deliver safety and productivity enhancing technologies to the Australian mining industry.**Research Locations**

- CSIRO, Sydney, NSW
- University of Sydney, Sydney, NSW
- CSIRO, Brisbane, Qld
- University of Queensland, Brisbane, Qld
- Curtin University of Technology, Perth, WA

**CRC for Predictive Mineral Discovery****Date Established:** 1 July 2001**Research Focus:** To create a predictive environment for mineral discovery and to develop a holistic view of the processes involved in ore formation.**Research Locations**

- James Cook University, Townsville, Qld
- Monash University, Melbourne, Vic
- University of Melbourne, Melbourne, Vic
- CSIRO, Perth, WA
- University of Western Australia, Perth, WA
- Geoscience Australia, Canberra, ACT