

AUSTRALIAN RESEARCH COUNCIL
IMPLEMENTATION PLAN FOR NATIONAL RESEARCH
PRIORITIES



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Preamble

National research priorities

In December 2002, the Prime Minister, the Hon John Howard MP, announced four national research priorities for Commonwealth-funded research:

- an environmentally sustainable Australia;
- promoting and maintaining good health;
- frontier technologies for building and transforming Australian industries; and
- safeguarding Australia.

In each of these areas of priority, the Government has identified priority goals to assist research and research funding bodies to focus their research effort.

The Government's objectives for national research priorities are to:

- identify and address areas of strength, opportunity or need where an increase in research effort – including collaboration, coordination or investment – would make a significant contribution to national wealth and/or well-being; and
- determine what shift in research effort is needed, what new or improved research activities are required, and how the targeting of research effort can best be achieved.

The Government announced that, as a general principle, all Commonwealth research and research funding bodies that can contribute to a national research priority will participate in the national research priorities initiative to the extent that this is consistent with their mandate or mission. Such bodies are required to prepare an implementation plan, which describes how they propose to implement national research priorities.

This plan

On 4 December 2002, the Minister for Education, Science and Training, the Hon Dr Brendan Nelson MP, directed the ARC to take account of the national research priorities in performing its functions under the *Australian Research Council Act 2001*, including with respect to making recommendations to the Minister on funding under the National Competitive Grants Program, commencing with the 2004 new funding round.

This plan is the ARC's response to that direction. It sets out the approach the ARC will adopt in implementing national research priorities over the five-year period 2004-08.

The plan describes how the ARC will collaborate with other organisations to build the scale and focus of research in the areas of national research priority, with a particular focus on the priority area of frontier technologies and its associated goal of breakthrough science. In line with the broad thematic nature of the national research priorities, the ARC has identified encouraging

inter-disciplinary approaches to research as a key component of implementation. The plan identifies arrangements for monitoring performance.

The structure of this plan is, firstly, to establish the context by identifying pre-existing priorities applied by the ARC and the ARC's over-arching mission, guiding principles and key areas of activity. This is followed by a description of the key features of the National Competitive Grants Program, which is central to the ARC's implementation of the national research priorities. The plan then identifies three objectives that are specific to the ARC's implementation of the national research priorities. Each of these objectives has associated with it a set of strategies, actions, outputs, outcomes and performance indicators which form the detail of the plan.

The initiatives in this plan will be implemented under specific program elements of the National Competitive Grants Program. As such, in many cases they will involve relatively long-term funding and can be expected to deliver lasting benefits in areas of national research priority. At present, legislation permits funding to be allocated under the National Competitive Grants Program out to 2006-07. Hence, while the plan contains a series of initiatives that will be implemented by the ARC in order to pursue the Government's objectives for national research priorities, it does not specify funding that will be devoted to them. The level of funding that can be allocated to initiatives, and hence the extent of their impact, will depend on future decisions by the Government as to the amount of financial assistance for research that will be allocated annually via the National Competitive Grants Program.

Context

ARC research priorities

In January 2001, in announcing additional funding for the ARC in *Backing Australia's Ability*, the Government stated its intention that “emphasis will be on areas in which Australia enjoys, or wants to build, a competitive advantage.”

Consistent with this, in January 2002, the Minister directed the ARC to allocate at least 33 per cent of funding in the 2003 funding round to four priority areas: nano-materials and bio-materials; genome/phenome research; complex/intelligent systems; and photon science and technology. A total of \$161.8 million or 34 per cent of ARC funding allocations in the 2003 funding round over the five years to 2007 has been allocated to research in these four areas.

These four ARC priorities are in turn included in the national research priority of Frontier Technologies. It is in this national research priority area, and the related goal of breakthrough science, that the ARC believes it can make the greatest contribution to the implementation of national research priorities. Focusing its effort in this priority area will build on the strength, momentum, scale and focus which the ARC has built in these areas to date.

The following areas are existing structural priorities under the National Competitive Grants Program:

- a minimum of 20 per cent of the funding in each new round of Linkage-Projects is allocated to research that will directly benefit regional and rural Australian communities;
- each year, at least 50 new Australian Postgraduate Awards (Industry) are targeted to research training in the field of information and communications technology; and
- each year a proportion of the funds under Discovery-Projects is targeted to early career researchers.

The ARC strategic action plan for 2003-05

Under the *Australian Research Council Act 2001*, the ARC Board must prepare a strategic plan at least once a year for the Minister's approval. The plan must set out the goals, priorities, policies and strategies to be adopted by the ARC in performing its functions. It must also set out performance indicators for the assessment of the ARC's performance of its functions.

The ARC's implementation plan for national research priorities will constitute a sub-plan of the ARC's strategic plan for 2003-05.

The ARC's mission

The mission of the Australian Research Council is to advance Australia's research excellence to be globally competitive and deliver benefits to the community.

The ARC's guiding principles

The ARC has identified seven guiding principles, all of which are relevant to the implementation of national research priorities:

Excellence

Ensure high-quality and innovative research that is internationally competitive.

Concentration

Provide a critical mass of support for research activities to foster world-class research outcomes.

Partnership

Encourage and increase partnerships between and among universities, research institutions, government, business and the wider community at the local, national and international level.

Flexibility

Provide flexible and responsive programs to ensure a range of research needs and opportunities are supported.

Strategic Direction

Deliver the greatest benefit to the community by encouraging research in areas of national priority.

Brokerage

Act as a catalyst and broker to create opportunities.

Accountability

Demonstrate accountability to the Government and the community by operating within a transparent and performance-driven framework, highlighting the return on the investment in research.

The ARC's key areas of activity

Key Areas of activity for the ARC, in the context of the implementation of national research priorities, include:

Discovery

The focus of the discovery research supported by the ARC is excellent research identified through peer review and open competition which ranges from relatively small discrete research projects through to longer-term, team-based programs, research networks/platforms and centres of excellence.

Linkage

The focus of the linkage research supported by the ARC is the promotion of research partnerships with business and industry and other publicly funded research agencies, and connecting Australian researchers with the world's leading-edge knowledge, expertise and techniques in overseas businesses and research centres.

Research Training and Careers

Fostering research training and career opportunities for our brightest and best researchers by supporting postgraduate research students, the career development of researchers and high-profile, internationally renowned researchers by assisting them to return to, or remain in, Australia.

Research Infrastructure

Access to world-class facilities and equipment for Australian researchers is critical to the achievement of nationally and internationally competitive research outcomes. This is often most appropriately done through collaboration involving consortia of research organisations, including overseas partners.

Inter-disciplinary Research

Inter-disciplinary research, which draws on both applied and fundamental research, is increasingly a requirement for advances in many fields of enquiry and for addressing many real-world problems. For example, emerging awareness of sustainability issues requires research crossing a wide range of discipline areas, both technical and social. A second example, the emerging area of nano-science and nano-technology, demonstrates fundamental physics, chemistry and biology merging at molecular and atomic scales to produce exciting advances in materials, sensors, electronics, optics, and medicine.

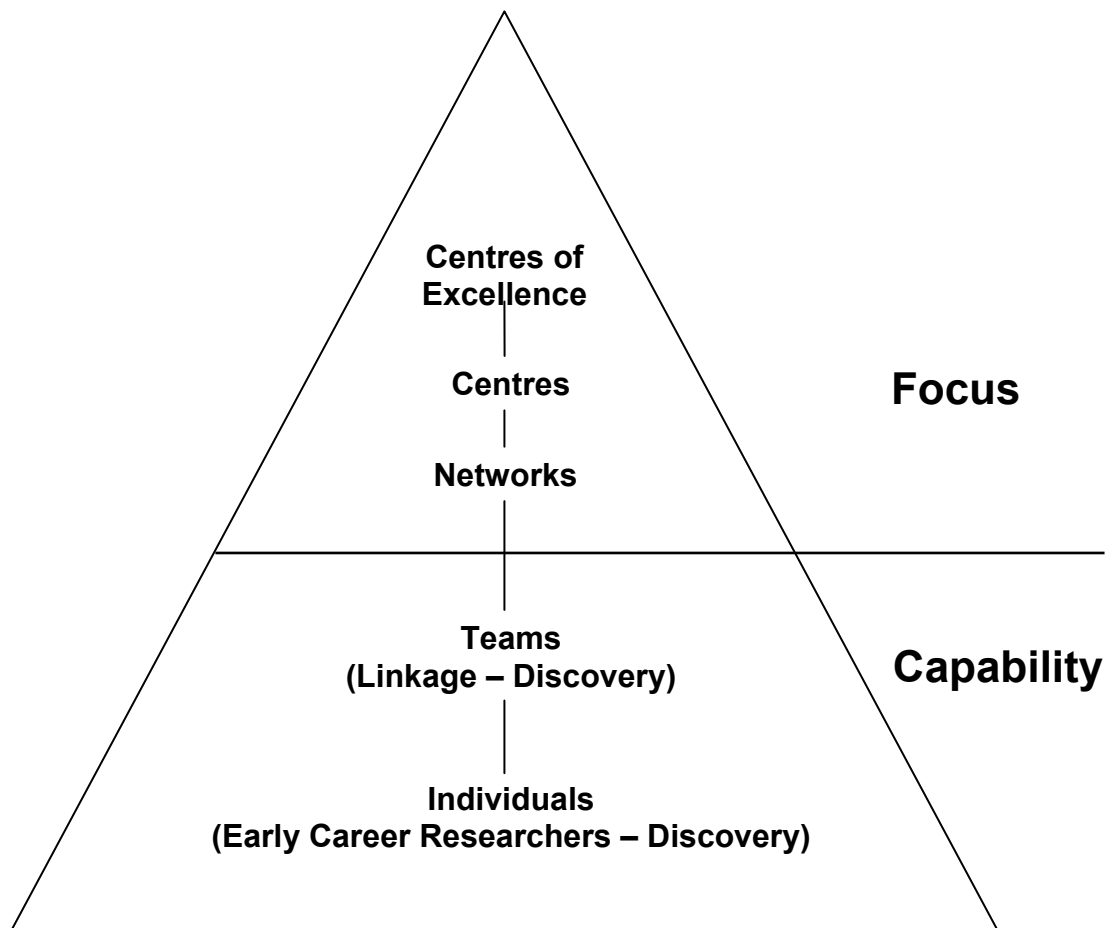
The National Competitive Grants Program

The National Competitive Grants Program is the primary vehicle by which the ARC pursues its over-arching mission and key objectives. It is composed of a set of inter-related program elements that are deliberately structured in such a way as to provide a pathway of incentives for researchers, as they develop in expertise and experience, to build the scope and scale of their work.

In this way, the National Competitive Grants Program is attuned to the needs of researchers at each stage of their careers – whether they be early in their careers and seeking to establish their credentials or well-established with a track record of excellence.

Incentives are provided to researchers by a program structure that, broadly, targets funding in two areas: (i) building research capability and (ii) achieving focus through critical mass.

The building of research capability occurs by nurturing the skills and expertise of individuals and encouraging partnerships through the formation of teams. Achieving focus occurs by supporting greater connectivity through the formation of networks and by promoting the building of critical mass in the form of research centres. This approach, embodied by the National Competitive Grants Program, is summarised in the diagram below.



For individual researchers, Discovery–Projects grants are the entry point to the National Competitive Grants Program. These grants provide researchers with an opportunity to establish a track record and are particularly important to promising young researchers, early in their careers, who are seeking to demonstrate their research credentials and develop their skills and expertise.

Discovery– and Linkage–Projects grants provide researchers with opportunities to begin to establish partnerships and build teams, with industry partners and other researchers.

For those researchers who have established a track record of excellence in research and research management, support is available to extend the scope and scale of their research by establishing research centres. These concentrations of research activity characteristically serve as regional, national and global focuses for knowledge creation, training and infrastructure development and have strong links to wider innovation networks.

As an initiative of *Backing Australia's Ability*, National ICT Australia and the National Stem Cell Centre are being established as world-class centres of excellence to provide national and international focuses for information and communications technology and biotechnology. Similarly, the Australian Centre for Plant Functional Genomics, a joint initiative of the ARC and the Grains Research and Development Corporation, is being established as a world-leading centre for plant biotechnology. The research outcomes of these centres can be expected to be of the highest global standing and to support clusters of innovation.

Organised in this way, the National Competitive Grants Program channels investment to support the life-cycle of activities that are necessary to both maintain and build a broad foundation of national research capability, and to focus research in areas of national priority. Nevertheless, a structural gap exists - at present, the organisation of program elements tends to under-emphasise the importance of network formation, with an insufficiently strong focus on providing support and incentives for individual researchers and research teams to extend their inter-connections with other researchers and those involved in innovation more widely. Developing these inter-connections is a necessary part of building the scope and scale of research excellence. This gap is a current focus of program development work within the ARC.

Implementing the national research priorities

Key objectives

The ARC will implement national research priorities by harnessing the key structural characteristics of the National Competitive Grants Program, as outlined in the previous section, in pursuit of the Government's key policy objectives.

At the core of the approach that the ARC will adopt is a set of key objectives.

Over-arching objective:	Maintain and build on the existing foundation of research excellence.
Objective 1	Build the scale and focus of research;
Objective 2	Encourage inter-disciplinary approaches to research; and
Objective 3	Facilitate collaborative approaches to research.

While each of these objectives applies to the full range of research that is supported by the ARC under the National Competitive Grants Program, the remainder of this plan addresses them as they apply specifically to the four areas of national research priority, with an emphasis on breakthrough science and frontier technologies.

Objective 1: Build the scale and focus of research

Strategy

Build the scale and focus of investment in areas of national research priority by:

- establishing new centres of research excellence; and
- developing new approaches to investing in the formation of research networks.

Actions

1. Establish new centres of research excellence in areas of national priority – ARC funding will be used to encourage investment in these centres from other sources, including universities, Commonwealth and State Government agencies, and private sector firms with a stake in research in the areas of national priority.

Timing: applications in 2004 for funding in 2005.

2. Establish a new funding scheme to assist researchers to build networks in areas of national research priority, with links to other researchers and research groups and to others involved in innovative activities.

Timing: applications in 2003/2004 for funding in 2004.

Investment inputs

The ARC allocated 73% of newly allocated funds in 2003 to research in the four areas of national priority – up from 60% in 2001 and 61% in 2002.

The scale of investment targeted to the formation of new centres of research excellence and research networks will rise relative to other investments aimed at developing the project expertise of individuals and small teams.

Outputs

New centres of research excellence will be established in areas of national priority with the scale and focus to attract world-class researchers and students through the provision of advanced infrastructure and outstanding research leadership.

An expansion of research networks will be funded in areas of national priority, as platforms for generating new knowledge of high impact.

Outcomes

An increase in the scale and focus of research in areas of national priority will serve to:

- generate new knowledge that is at the forefront of research discoveries nation- and world-wide;
- enhance the application of new ideas and deliver benefits in the commercial, social and environmental spheres;
- attract and retain researchers of international standing; and
- develop high quality training environments for the next generation of Australian researchers.

Indicators

In areas of national research priority, the activities and performance of centres of excellence and researchers involved in networks will be measured according to:

- the level of output, productivity and impact of research publications;
- the incidence, nature and impact of applications of new knowledge;
- the incidence and impact of collaborative research links formed;
- analysis of the countries of origin of researchers and postgraduate research students; and
- analysis of the employment and career outcomes of postgraduate research students.

The ARC has an ongoing program of data collection to allow it to monitor key aspects of research activity and the performance of research funded under the National Competitive Grants Program. The main elements are:

- data on research inputs captured from applications for funding;
- data on outputs and outcomes captured from final reports for all research grants; and
- specific purpose studies (for example bibliometric studies) commissioned periodically to measure the impact of research funded under the National Competitive Grants Program.

These data collections will allow the ARC to monitor research activity and the performance of research funded by the ARC in the areas of national priority, and to benchmark these against prior activity and performance.

Current initiatives to build on

The following are initiatives currently in place which address the objective of building the scale and focus of research. All of these initiatives support research in the four areas of national research priority:

- The National Stem Cell Centre (NSCC), jointly funded by the Commonwealth through the ARC and Biotechnology Australia, and National Information and Communications Technology Australia (NICTA), jointly funded by the Commonwealth through the ARC and the Department of Communications, Information Technology and the Arts (DCITA).

These World-Class Centres of Research Excellence represent a major investment in biotechnology and ICT by the ARC, which will provide \$23m million and \$63m, respectively, over five years to the Centres.

- The Australian Centre for Plant Functional Genomics, a joint initiative of the ARC and the Grains Research and Development Corporation (GRDC). The ARC and GRDC will each provide \$10m over five years. The South Australian Government has committed \$12m and the participating organisations \$3.6m in total.
- Eight Centres of Excellence have been established as part of the ARC's approach to implementing ARC research priorities announced in January 2002. These centres bring together diverse teams of excellent researchers to address topics in the four ARC priority areas. The ARC will provide \$89m to the centres over five years, with the participants contributing an additional \$46.5m in total.
- Arising from the implementation of ARC research priorities in the 2003 new funding round, a reserve list of very high quality applications for centres funding was identified. Associated with all of these reserve applications were individual researchers currently in receipt of ongoing ARC funding support. In order to capture the benefits of the research proposed in those applications, supplementary funding is being provided to the relevant research groups to enable them to build the scale and focus of their work. Funding amounting to approximately \$250,000 per year for each research group, combined with a longer-term funding commitment for pre-existing support, will not only advance the objective of building scale and focus but will enable the groups to capture a significant proportion of the substantial cash and in-kind commitments of higher education institutions, state governments, other agencies and industry partners associated with the original applications for centre funding.

Objective 2: Encourage inter-disciplinary approaches to research

Strategy

Encourage inter-disciplinary approaches to research in areas of national priority by:

- establishing centres of research excellence that transcend the boundaries between research disciplines; and
- facilitating network-building by researchers in different disciplines.

Actions

1. Establish new centres of research excellence in areas of national priority, with program objectives and selection criteria emphasising the importance of inter-disciplinary approaches to research.

Timing: applications in 2004 for funding in 2005.

2. Facilitate workshops to assist researchers to build networks across different research disciplines in areas of national priority.

Timing: in 2003.

3. Establish a new scheme to provide funding incentives to build networks among researchers in different disciplines in areas of national priority.

Timing: applications in 2003/2004 for funding in 2004.

Investment inputs

Funding for inter-disciplinary research as a percentage of total new funding allocated by the ARC rose from 23.1% in 2001 to 27.5% in 2002 and to 32.6% in 2003.

Outputs

Centres of research excellence will be established in areas of national priority which focus research on opportunities to make breakthrough discoveries in emerging areas that transcend the boundaries of traditional research disciplines.

Research networks will be developed and extended in areas of national priority, to provide a focus for generating new knowledge in areas that span traditional disciplinary boundaries.

Outcomes

Encouraging inter-disciplinary approaches to research in areas of national priority will contribute to building scale and focus. It will also serve to:

- encourage innovative and novel approaches to solving problems of national significance;
- generate new knowledge that is at the forefront of research discoveries in emerging areas nation- and world-wide;
- enhance the potential for new knowledge to be applied in a wide range of settings, including the development of enabling technologies and in relation to broadly-based social and environmental needs;
- encourage researchers to develop the flexibility and breadth of knowledge, skills and experience necessary to work effectively according to research agendas that are broad in scope and potential application; and
- support research training that spans traditional boundaries between research disciplines.

Indicators

In areas of national research priority, the activities and performance of centres of research excellence and research networks will be measured according to:

- the level of inter-disciplinary outputs, primarily in the form of research publications, and their impact;
- the breadth of incidence of commercial and other applications of new knowledge in different settings; and
- the incidence of inter-disciplinary research links formed.

The ARC will monitor and benchmark activity and performance in these areas using:

- data on research inputs captured from applications for funding;
- data on outputs and outcomes captured from final reports for research grants; and
- specific purpose studies commissioned to measure research impact.

Current initiatives to build on

- ARC Centres of Excellence are being established in 2003 within the four areas of ARC priority research: nano- and bio-materials; genome-phenome research; complex and intelligent systems; and photon science and technology. The nature of research at the forefront of knowledge and its applications in these fields is highly inter-disciplinary. ARC Centres of Excellence will link existing Australian research strengths and build new capacity for inter-disciplinary, collaborative approaches to address the most challenging and significant research problems. Inter-disciplinarity was incorporated successfully into the selection criteria for these centres.

For example, in the area of nano- and bio-materials, the development of advanced techniques in materials science and in biotechnology underpins progress and growth in almost every area of industrial and economic activity. The marriage of biotechnology and materials science promises exciting research opportunities, with enormous potential for economic, social and environmental applications and impact.

- The ARC manages its assessment of applications for research funding with the assistance of six expert advisory committees, the expertise of whose members spans the following broad discipline clusters: biological sciences and biotechnology; engineering and environmental sciences; humanities and the creative arts; mathematics, information and communications sciences; physics, chemistry and geoscience; and social, behavioural and economic sciences. This organisational structure encourages an inter-disciplinary perspective to be brought to bear on the ARC's assessment of research proposals.

Objective 3: Facilitate collaborative approaches to research

Strategy

Facilitate collaborative approaches to research in the areas of national priority by:

- establishing funding partnerships with research organisations and other parties within Australia and internationally;
- providing funding targeted to support the establishment of collaborative networks among researchers; and
- improving public access to information about ARC-funded research activity and outcomes.

Actions

1. Convene a workshop for Commonwealth agencies to identify collaborative initiatives that can be instituted in the areas of frontier technologies and breakthrough science.

Timing: 2003.

2. Establish partnerships with other agencies to support co-investment in research in areas of national priority, in particular by:

- establishing new centres of research excellence; and
- co-funding new postdoctoral research fellowships in conjunction with Commonwealth research institutes.

Timing: 2003/2004.

3. Establish a new funding scheme to support communications infrastructure, personnel exchanges and other initiatives aimed at building collaborative networks among researchers in areas of national priority.

Timing: applications in 2003/2004 for funding in 2004.

4. Establish a publicly accessible and searchable on-line database containing information about the activities and outcomes of research in areas of national priority funded under the National Competitive Grants Program.

Timing: 2003.

Investment inputs

The ARC will:

- meet the costs of sponsoring a workshop for Commonwealth agencies to identify collaborative initiatives in the areas of frontier technologies and breakthrough science;
- increase the scale of investment targeted to the formation of new centres of research excellence and research networks relative to other investments aimed at developing the project expertise of individuals and small teams;

- earmark funds under the Discovery-Projects element of the National Competitive Grants Program for postdoctoral research fellowships to be co-funded with Commonwealth research institutes;
- devote funds to a new scheme under the National Competitive Grants Program to support the development of research networks; and
- earmark administrative funds to meet the costs of establishing a publicly accessible database of information about the activities and outcomes of ARC-funded research.

Outputs

The ARC will enter into cooperative agreements with other organisations as a basis for joint investments to establish centres of research excellence and with other Commonwealth agencies to co-fund postdoctoral research fellowships in areas of national research priority.

Centres of research excellence and research networks established in areas of national priority will provide a focus for the development of collaborative links between researchers and others involved in innovation.

A database will be established to provide the research community, businesses, not-for-profit and public sector organisations, and commercial investors access to information about the activities and outcomes of ARC-funded research in areas of national priority.

Outcomes

A focus on encouraging collaborative approaches to investment and research in areas of national priority will:

- contribute to building scale and focus;
- serve to broaden the scope of ARC-funded research and the potential for its application in different settings;
- enhance collaboration between ARC-funded university-based researchers and their research students, researchers funded by other Commonwealth agencies and researchers employed in Commonwealth-funded research institutes; and
- contribute to a closer alignment between the research agendas of universities and other research agencies.

Indicators

In areas of national research priority, performance will be measured according to:

- the incidence of new collaborative initiatives, in particular involving joint investment by the ARC and other agencies to establish centres of excellence and to co-fund additional postdoctoral research fellowships;
- the incidence, outputs and impact of new collaborative research links formed as the result of establishing centres of excellence and funding the development of research networks; and

- the incidence of private sector commercialisation and public good utilisation of the outcomes of ARC-funded research.

The ARC will monitor and benchmark activity and performance in these areas using:

- data on research inputs captured from applications for funding;
- data on outputs and outcomes captured from final reports for research grants; and
- specific purpose studies commissioned to measure research impact.

Current initiatives to build on

The following are initiatives currently in place which address the objective of facilitating collaborative approaches to research. A majority of these initiatives support research in the four areas of national research priority:

- The ARC is involved in joint funding for three major Centres: the National Stem Cell Centre (NSCC) with Biotechnology Australia; the National Information and Communications Technology Australia (NICTA) with the Department of Communications Information Technology and the Arts (DCITA); and the Australian Centre for Plant Functional Genomics, with the Grains Research and Development Corporation (GRDC).
- In addition, the ARC is collaborating with CSIRO to jointly fund a pilot scheme, Linkage-Australian Postdoctoral Fellowships CSIRO, which encourages teams from universities and CSIRO to jointly host a postdoctoral fellow to undertake a collaborative project.
- ARC Centres support collaborative approaches to research by bringing together excellent research teams. For example there are 52 collaborating institutions involved in the eight ARC Centres of Excellence, including international research organisations and industry participants.
- ARC Linkage Programs support collaborative research projects. 736 industry partners were involved in 470 new Linkage-Projects supported in 2002.
- International collaboration is supported under Linkage-International and through the ability to involve international collaborators in research supported under other program elements, particularly Discovery-Projects – projects newly funded in 2003 involve a total of 1,036 international collaborations involving 62 countries.
- Linkage-Infrastructure Equipment and Facilities (LIEF) supports collaboration in the establishment and operation of major facilities and equipment. Major international collaborations include: the International Gemini Partnership; the International Ocean Drilling Program; ISIS (Intense Neutron Spallation Source); and the Experimental High Energy Physics Program utilising the CERN facility in Europe. In 2002, the number of participating organisations per LIEF project ranged from 1 to 11, with the majority of projects involving between two and five participating organisations.

Facilitating cooperation

If the Government's objectives for national research priorities are to be achieved effectively, there will need to be a high degree of cooperation among individual agencies during the implementation phase. The ARC believes that in each area of priority, one or two agencies are likely to be in a position to accept a facilitating role in implementation and that, were they to do so, this would increase the likelihood that, through a coordinated approach, collaboration, critical mass and focus would be greatly enhanced in those areas.

Key agencies would accept responsibility for initiating and facilitating a cooperative and inclusive approach to implementation among all agencies that have signalled their capacity to contribute in particular areas of national research priority. For those agencies – including the ARC – with relatively broad missions, a facilitating role in one area of priority would serve as a complement to their capacity to contribute to implementation in one or more other areas.

At present, the ARC has significant investment commitments already in place that will support research within each of the four areas of national priority. It expects, therefore, to contribute to implementation and enhanced outcomes in all of those areas. Over and above this, the ARC has the capacity and is willing to accept a facilitating role with respect to the Frontier Technologies priority area. Subject to endorsement of this by all those with a stake in the area, the ARC will, as a first step, convene a workshop to identify collaborative initiatives that can be instituted, with a particular focus on breakthrough science.

Investment

In order to measure its past investment in research that contributes to the four areas of national research priority and, from this baseline, to monitor future investment, the ARC has mapped the contribution that each field of research (according to the international standard supplied by the Field of Research Classification) makes to the priority goals that constitute the national research priorities.

According to that mapping, the proportion of ARC funding directed to research in the four areas of national priority was 60% of funds newly allocated in 2001, 61% in 2002 and 73% in 2003. The increase in 2003 is attributable to the first year of funding of the four ARC priorities announced in January of 2002.

The table below sets out the percentage of ARC funding allocated to date in annual funding rounds to each of the four areas of national research priority.

Priority Areas	2001	2002	2003
	% of newly allocated funding	% of newly allocated funding	% of newly allocated funding
An environmentally sustainable Australia	14.1	12.7	11.4
Promoting and maintaining good health	4.3	5.0	6.4
Frontier technologies for building and transforming Australian industries	36.6	39.1	52.0
Safeguarding Australia	4.9	4.2	3.4
Total all priority areas	60.0	61.1	73.1

Funding for inter-disciplinary research as a percentage of total new funding allocated by the ARC rose from 23.1% in 2001 to 27.5% in 2002 and to 32.6% in 2003. For the purposes of monitoring future funding, inter-disciplinary research comprises ARC-funded research projects that, as identified by the researchers, spans two or more major fields of research.

Implementation of the national research priorities according to the approach outlined above will also result in a shift in the relative emphasis of investments made under the various elements of the National Competitive Grants Program.

Building scale and focus and developing connectivity will be achieved through an enhanced emphasis on investment targeted to the formation of new centres of research excellence and research networks. As a result, the scale of that investment will rise relative to other investments aimed at developing the project expertise of individuals and small teams.