emcrforum

The voice of Australia's future scientific leaders

Australian Academy of Science

Discussion paper

Starting the conversation between academia and industry

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The voice of Australia's future scientific leaders

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Executive summary

The Early- and Mid-Career Researcher Forum (The EMCR Forum) is pleased to present this discussion paper that aims to stimulate conversations between people in academia, industry and other sectors carrying out research. The EMCR Forum, under the stewardship of the Australian Academy of Science, is the voice of Australia's EMCRs. Our vision is to secure the future of Australian science and we champion improvement in the national research environment through advocacy and engagement. Starting the conversation between academia and industry will not only allow for greater engagement, but will ultimately lead to more fluid career paths for researchers across these sectors. And a first step in starting the conversation is removing the perceived 'mystery' between sectors.

Why explore this topic? Australia ranks 29th out of 30 for industry-university collaboration in the OECD. Industry is much more likely to source innovation from a competitor or other business in the same industry than from a university. Nevertheless, 4.6% of industry in Australia already engages with the Australian university research sector (1.3% go international), with many successful outcomes. And that's just the private sector—science is done in many other places too.

The discussion paper starts with an introduction of each sector—industry, academia, and the non-private sector—written by a researcher in that sector for the benefit of those who have not (yet) worked in it. Key considerations when engaging people in that sector are outlined: what people in that sector are looking for, why they might want to engage across sectors, and what you can expect to get out of an engagement.

The cross-sector discussion focuses on key differences across the sectors: timelines, budgets, short- and longer-term gains, and survival skills. This is followed by a discussion on how interactions between sectors start, and on key issues in the non-academic sectors. Cross-sector collaboration case studies featuring EMCRs are highlighted, one from the non-private sector collaborating across industry sectors, and one with academics working with industry. We will add more case studies as we continue to consult with EMCRs. The information presented here is illustrative rather than definitive, given the huge diversity within each sector.

Key points highlighted by this document are that it's not US and THEM when it comes to cross-sector interactions. It is people working in sectors with compatible goals, where efforts can be enriched with engagement and collaboration. The biggest differences between sectors are how performance is measured, how projects are run, how timelines and budgets are scrutinised, and in decision structures. This discussion paper increases the information flow between sectors, de-mystifying what happens in each and why. We hope that starting the conversation will lead to a better mutual understanding across sectors, a better understanding by EMCRs of the career paths available to them, better engagement between sectors, and better outcomes for everyone.

Preamble

There has been much discussion over the past few decades in Australia about the level of interaction between the higher education provider and non-academic sectors. The non-academic sectors considered in this document are 'industry'—defined in the traditional manner of companies and businesses that produce and sell goods and/or services—plus the non-private sector. A recent OECD report (from 2008–10) shows Australia ranks 29th out of 30 for industry–academia collaboration (3% of industry and small to medium enterprises in Australia source their innovation and ideas from universities). Industry is much more likely to source innovation from a competitor or other business in the same industry than from a university. Nevertheless, 4.6% of industry in Australia already engages with the Australian university research sector (1.3% go international), with many successful outcomes. The most recent National Survey of Research Commercialisation highlighted that existing engagement of universities with industry has generated a year on year increase to $1.35 billion in research income in 2014. Engagement can take many forms: consultation, partnered projects, commercialisation/licensing, or academics creating the industry partner through establishing a company.

ROOM FOR GROWTH

- there were more than 15,000 research engagements with industry in 2014
- research income from industry linkages was $1.35 billion in 201
- 4.6% of innovation-active businesses collaborate with universitie
- Australia is ranked 29th out of the top 30 OECD countries for industry–university collaboration

There are several important topics that are either not captured by this data or not discussed in this discussion paper related to this data: (1) Industry is a general term that encompasses more than traditional goods and services companies. (2) Engagements of any nature are based upon people interacting. (3) At the 'coal face', junior researchers and staff can drive the day to day progression of the engagement, as highlighted in the case studies. With these in mind, the Early- and Mid-Career Researcher Forum (EMCR Forum), under the stewardship of the Australian Academy of Science, is contributing to the academia–industry discussion.

As the voice of Australia's EMCRs, we are championing improvement in the national research environment through advocacy. Our vision is to secure the future of Australian science. As part of this, we present this discussion paper with the aim of stimulating conversations about the people involved with academia–industry engagement. This not only allows for greater academia–industry engagement, but ultimately leads to more fluid career paths between academia and industry for researchers. This discussion paper is focused on removing the perceived 'mystery' between sectors to help people identify career paths across the sectors and to facilitate collaboration.

'This is industry' for academics

Industry is a broad label for a number of organisations that have differing needs and requirements. In this discussion paper we outline a number of key considerations when starting the conversation with industry, noting that not all of these will apply to every organisation. We also address questions around what industry members are looking for, why they might want to work with academia, what you should expect to get out of an interaction with industry, and how these interactions might start. Research priorities within industry often operate on different timescales than academia, however organisations typically engage in a combination of short- and longer-term objectives, where longer-term objectives may be characterised under an 'innovation' agenda. It's also worth noting there are significant differences between small and big businesses, for example with considerations in intellectual property (IP) protection requirements and different decision structures (small is often more flexible).

Key considerations when starting the conversation with industry

A lot of these considerations come down to listening and attitude. If you are really listening to what problem industry needs to solve, and what pressures they're under, and if you come with an open mind, discussions will likely be very constructive for everyone involved.

Drivers and pressures are (usually) very different to academia

- Money, money, money; how does this proposition help our bottom line? Or help to overcome a significant pain-point?
- How does this proposition align with company strategy / core business?
- Value propositions or cost–benefit analyses are a must.
- As markets change, so do priorities. This can happen over a long period, or in a very short timespan.

> KPIs (key performance indicators) for employees are often significantly different than for academics—understanding how collaborators will be 'graded' on their involvement is essential for effective collaboration. It doesn't hurt to ask 'what does success look like for you?'.

IP considerations

This is especially relevant for tech-based companies.

- When companies say IP they mean things they can directly make money from or need to protect—via patents for example—to make money.
- Companies are very protective of IP and other commercial-in-confidence information; access by competitors could detract from their bottom line.
- Separation of IP delineated for a collaboration is essential (who owns what and who can see what) and can help alleviate IP as an issue.
- IP or copyright infringement is a concern for businesses—many resources such as programs and datasets that are freely available to academics can't be used by commercial companies without a specific licence.

> Understand ownership and confidentiality requirements and implications of these requirements before starting a project. For example, would there need to be a delay in publication of research?

Decision makers

- People in industry have a manager. This manager may or may not understand the technical details or aspects. In addition, managers can change, and thus their involvement can too.
- People making the decisions may be different for different types of projects; and some projects may need the involvement of several people or levels of approval, such as technical and business decision makers).
- Bureaucracy levels differ significantly across industry; some have less and some have much more than academia.

> Decision structures in industry are very different—people usually can't just decide to work on something (unless they're the CEO). Try to persevere beyond the initial contacts, who are often focused on sales and marketing, to meet with the technical people.

Don't be scared!

- Corporate buzzwords are equivalent to scientific jargon from a different discipline—there's a learning curve but patience and understanding from both sides will overcome the gap.
- Words can have different meanings or connotations (e.g. 'problem' is good/interesting/fun in academia but has negative connotations in industry).
- Expect to be a novice—expect to learn from them.
- Working in industry is not as weird or different as you think—it's just people doing a job.
- Don't bring biases such as a stigma that people working in industry have somehow 'failed out' of an academic career.

> Keep an open mind. Respect the expertise of those working in industry.

The crossover areas

- Research occurs in industry.
- Commercialisation occurs in academia.
- IP is generated in both industry and academia, just captured and valued differently.
- Agreements and IP can get very tricky in crossover areas (e.g. companies that do in-house research; research centres at universities that have a commercialisation requirements).

> There is not an 'either/or' for universities doing research and industry doing commercialisation.

Budget sizes

- Depending on the size of the company, the projected profit may need to have several more (significant) zeros than you expect.
- Every dollar spent is considered; the budgets may be bigger in industry, but the scrutiny is closer.
- With financial scrutiny, especially in tough economic times, comes smaller research budgets.

> Expect that the projected profit will need to be larger, and the possible expenditure or potential cash-flow to be significantly lower. Don't treat industry as a pot of gold at the end of your scientific rainbow.

Timelines

- Companies have to report to shareholders quarterly (if they have them)—progress and milestones should take these reporting times into account.
- Longer project times are acceptable only if the resulting expected effect on the bottom line is proportionally larger.
- Even a two-year project may be considered long term by companies.

Flexibility is required to engage with industry, and many funding schemes are subsequently ill-suited. Smaller businesses generally require more flexibility.

What are companies (or people in industry) looking for?

- Experts to help solve problems, or improve efficiency, or break into new markets.
- Reputation. Companies want to show that their product or service is proven to be effective, has scientific validity etc.
- Companies are less interested in publishing papers, and more interested in putting (proven) ideas into IP, products or services. However, having papers published helps with reputation.
- Connections to identify future employees.
- Opportunity to 'give back' (corporate citizenship agendas).

People in industry are looking for *people* in academia who can bring value to what they are doing. Think more about your skills and capabilities than the content of your knowledge and IP (though these are important too).

Why do companies want to work with academia?

- Because you're all certified experts or you wouldn't be there—and probably cheaper than a consulting company.
- Breakthrough technologies to blow away the competition or to enter or create new markets.
- Overcome a pain point.
- Improve efficiency and/or margins.
- Working with small businesses may increase the open-ness of IP developed and have larger impact across the sector.

What will you get out of it?

- Impact: Industry collaborations can take your research and ideas and move them quickly into application. So you will see the world using your research.
- Relevance: Collaborations can seed new research ideas, or can hone your research focus to ensure it is as relevant as possible to target fields and industries today.
- Employment: Contacts with industry can provide potential job opportunities for students who wish to pursue non-academic careers. This fact will be attractive to potential students.
- Recognition: Australian academic institutions are moving towards formally rewarding academics for active industry collaborations.
- Funding: Some grants are available for industry collaborations, such as ARC linkage grants (see resources section).

'This is academia' for industry people

Academia is a collection of careers that engage in research within the university sector. The way those in academia approach problems is usually quite different to the way those in industry often approach their findings, research challenges and outputs, due to the different drivers. Academics have significant targets to meet in their work and are subject to meeting funding goals and other KPIs as in non-academic sectors.

Key considerations when starting the conversation with academia

- Academics publish journal papers detailing their research—these tell the world what they do, how they do it and that they are a specialist in that field. This is one of the key methods of evaluating output.
- Academic researchers use the number and quality of journal articles they publish to highlight how good their research is, which helps them get grant funding.
- If an academic patents an idea or works on a commercial project then they can get real world results, but this may be a delayed outcome. Temporarily there may be barriers to publishing journal papers—which may limit their short-term opportunities for grants or career progression.
- Academics will often, but not always, like to work on fundamental science or engineering, called basic research. This can ultimately lead to scientific advances, but it takes time.
- Academic timelines can be quite long. In grant funding applications they are asked to provide a plan of work for 3-5 years (which may commence 12 months after the application is submitted), at the end of which they should have produced an advance in knowledge or technology.
- Targets or KPIs in academia are: research grant funding, journal publications, graduated higher-degree research (HDR) students, governance and service, community engagement, patents.
- In academic research, timelines often change when an unusual result appears. The whole direction of the work may change to follow an interesting finding.
- Research funding for academia is highly affected by the political ideologies of particular governments.
- The driver for academics is often curiosity and desire to learn something to improve the *status quo*. Financial gain is generally a secondary aspect of their work.
- Generally, research budgets are small compared to commercial projects. A $500,000 project in academia will allow a researcher three years of salary plus project costs… and it will take them months to prepare the application document. A $20,000 project grant over a year is considered a significant project.

The fundamental differences in how academics are measured stems from the difference between *discovery* and *development*. Industry often focuses on identifying and solving problems, with a view to taking a functional approach to carrying forward a marketable solution. However, academic research looks at the fundamental mechanisms underlying these problems and explores where new solutions may arise. This can mean starting at the very beginning for any problem, implying slow external progress.

What are academics looking for?

- Interesting problems to solve
- Work that can increase their skills and expertise
- Funding
- Ways to contribute to meaningful outcomes

Why do academics want to work with industry?

- Working with the non-academic sectors brings interesting problems, both on the application and more basic research sides
- The chance to take their research and apply it to a tangible commercial or beneficial outcome (e.g. policy)
- They get an insight into the real-world application methods of their research area
- To get funding from industry
- To work on a collaborative project that can lead to joint industry–academia grant proposals
- Because it's interesting to work with people from different backgrounds
- It improves their impact record and increases their chances of future research funding
- Opportunity to communicate their research to the sector and increase its uptake and impact
- Opportunity to provide an evidence base for government policy and industry approach

What will you get out of it?

- A potential advance in knowledge or technology (it's research, so no guarantees)
- Highly trained critical thinkers attempting to solve a pain-point or subset thereof
- Development of new tools or methods that don't yet exist
- Access to skills, capabilities (people) and infrastructure (equipment) that may not reside within your business

'This is the non-private sector' for academics

When talking about science outside of academia, it is convenient to use the word 'industry' as a catch-all ('improve links between academia and industry'). However, science takes place in a wide range of organisations that are neither academic nor in the private sector. Some of these are very similar to academia, while others differ in fundamental ways. This section provides a brief overview of some of the major players. Because some of the issues in the non-private sector are shared with the private sector, they are listed together in a separate section.

Publicly funded research agencies ('PFRAs')

CSIRO (Commonwealth Scientific and Industrial Research Organisation) is the most famous, but there are many others PFRAs in Australia. Research in PFRAs is often in areas of public good, where investment by the private sector is low due to uncertain or insufficient commercial outcomes, commercially unacceptable risks or long time frames. PFRAs tend to have core operations beyond research, such as the provision of public or commercial services, advice and education.

> The major Australian PFRAs include CSIRO, Defence Science and Technology Group (DST Group), Australian Nuclear Science and Technology Organisation (ANSTO), Australian Institute of Marine Science (AIMS), Australian Institute of Aboriginal and Torres Strait Islander Studies (AIATSIS), Geosciences Australia, Australian Antarctic Division (AAD), Bureau of Meteorology, Australian Centre for International Agricultural Research (ACIAR), Australian Astronomical Observatory (AAO) and National ICT Australia Limited (NICTA). PFRAs with a budget of more than $100 million include CSIRO, DST Group, ANSTO, Geoscience Australia and ACIAR.

Medical research institutes (MRIs)

Australia's reputation for scientific excellence is heavily influenced by its strong track record in medical research, much of which is carried out by MRIs. Although these generally sit outside of university administrative structures, MRIs often have close ties with universities such as in teaching and collaboration.

> The biggest MRIs in Australia at present are Walter and Eliza Hall Institute of Medical Research (WEHI), Berghofer QIMR, Murdoch Childrens Research Institute (MCRI), Garvan Institute of Medical Research, Baker IDI Heart and Diabetes Institute Holdings Limited, George Institute for Global Health, Florey Institute of Neuroscience and Mental Health, South Australian Health and Medical Research Institute (SAHMRI).

Cooperative research centres (CRCs)

Established in the 1990s, CRCs have become increasingly important in the Australian research ecosystem. Specific CRCs are established to provide research and evidence to underpin the performance of their industry. They play an interesting mix of roles, commissioning research, providing advice and conducting research of their own. Each CRC is made up of a range of industry partners, universities, possibly PFRAs, possibly MRIs, and possibly state government departments. Despite overseeing activities between these entities, and receiving funding from industry,

universities and the federal government, they are separate legal entities. CRCs operate between 5 and 7 years, and control budgets of many 10s of millions of dollars.

Government

A considerable amount of research is undertaken by government departments, principally at the state and federal levels. The major areas of government research include agricultural and veterinary science, medical and health sciences and environmental science. Research undertaken by government tends to be targeted closely to departmental and governmental priorities.

Despite the large number of government scientists and the often influential nature of their work, science and scientists with these departments can have a relatively low profile. The EMCR Forum would like to explore this sector further and would welcome feedback from EMCRs within government about their experiences, challenges and needs.

Non-government organisations (NGOs)

Scientific evidence plays an important role for many NGOs. To our knowledge most of this research is carried out outside of NGOs, although it may be commissioned by them. NGOs do tend to maintain close links with researchers, who they rely upon for advice and information. The EMCR Forum would welcome feedback from the NGO sector about any research it carries out directly.

Scientists not doing science

While the discussion here is limited to active research, it is important to recognise the wide range of roles for which scientific training and qualifications are an advantage. Many scientists are employed by the organisations listed here in roles whose primary purpose is not research (the same goes for academia). Examples include policy, management, operations, communication and research administration. People employed in such roles may interact very closely with researchers in academia or elsewhere, either informally or on formal projects. We highlight that training in the STEM subjects provides individuals with good communication skills, critical thinking, and complex problem solving skills. It is hard to imagine any sector of society that doesn't demand this of their employees.

Cross-sector discussion

Sector comparison

The following table summarises many of the comparisons, focusing on differences and omitting many of the similarities. This is not exhaustive! The table unfortunately reflects many stereotypes in assuming monoculture in what is actually a very complicated picture. Don't fall into the trap of assuming stereotypes or that this summary is comprehensive!

Aspect	Industry	Academia	Non-private
Timelines	Tight	Flexible; allows time for exploration	Variable
Budget	Varied, depending on partner size and importance of project	Generally small	Variable; generally small
Short-term outputs	• Progress on current projects • IP generated • Products/assets developed • Pain-points solved/cleared/ identified	• Papers • Presentations	• As for industry, academia • Reports • Advice
Long-term gains	• New products, services, or practices • Wealth	• Grants • IP • Knowledge	• As for industry, academia • Improved service delivery, outcomes
Survival skills	• Project management • Asset development/translation • Market analysis • Business case development • Communication outside of field	• Paper and grant writing • Communication to those in field • Education	• Communication • Project management • Stakeholder liaison

How do interactions between sectors start?

- A non-academic approaches an academic for help. This largely occurs via their work and personal contacts (e.g. lecturer, supervisor, former colleague) or via digital platforms (e.g. LinkedIn).
- Person in academia or industry approaches the other with an idea, via a specifically organised workshop, academic conference or networking event.
- Industry presents a problem at a specifically organised workshop (e.g. mathematics-in-industry study groups).
- Non-academic approaches a university commercialisation unit or consulting service to request help.
- Specific bodies put people from academia and industry in touch (e.g. innovations connections facilitators, industry associations, convergence science network in Melbourne).
- Academic attends a conference or workshop aimed at that specific industry sector (i.e. a non-academic event).

Key issues in the non-academic sectors

Research types

All major areas of research can be found in the non-academic sector, sometimes even in a single organisation: pure basic research, strategic basic research, applied research and experimental development.

Funding

There are as many funding models as there are organisations. In the non-academic sector major funding sources include recurrent funding, service provision including consultancy, and competitive grants. The latter may be important in some cases but tend to be from pools other than the primary academic funding pools such as the ARC and NHMRC. Government departments increasingly commission research rather than conduct it themselves. Uncertain government funding remains an issue in many organisations.

Collaboration

Non-academic sector research is often carried out in collaboration with academia. For example, state government departments sometimes partner with universities on ARC Linkage grants. Within government departments, the collaboration may be with partners in policy or operations, or stakeholders outside the organisation.

Publishing

As a general rule, in the non-private sector the pressure to publish in peer-reviewed journals is not as great. However, there are many exceptions, and some of the most productive and highly cited scientists in Australia come from the non-academic sector. In contrast, the non-academic sector is responsible for a vast amount of grey* literature, such as reports for clients, which may nevertheless contain valuable information.

*Grey literature is not published in peer reviewed scientific journals or proceedings, but may be peer reviewed.

Non-scientific work

The primary non-scientific work of academics is administration and teaching. In the non-academic sector, non-scientific work tends to be much more varied and may include advice and review for colleagues in policy, legal and management teams, communication, and liaising with a range of stakeholders, including clients, politicians and the general public.

Job conditions

As with funding, there are as many different working conditions as there are employers in the non-academic sector. In many cases, however, working conditions are good, with standard hours, competitive salaries and benefits such as flex time.

Career paths

Career paths in the non-academic sector vary widely and often do not match the (very difficult) progression within academia from post-PhD entry level (A) positions up to Professor (level E). Promotions in industry require not only that metrics be met, but that there is a business case for someone to be in that role. However, it is our hope, in contributing to the conversation between academia and industry, that EMCRs within academia are made more aware of the variety of career paths available outside academia that have a clear research focus. A more difficult career path to navigate is the move between sectors—within the non-academic sector, or from academia to non-academia or vice-versa. Such movement requires understanding of many of these issues on the part of both employers and employees.

Measures of success

There is a strong mixture, ranging from the more conventional academic measures like publications and competitive grants (or private income), to the meeting of stakeholder or agency objectives.

Stakeholders

Some non-academic sector organisations work very closely with stakeholders. This engagement may occur over long periods of time, resulting in research questions that are heavily shaped by stakeholders, or results whose effectiveness is judged in large part by stakeholders.

Cross-sector collaboration case studies

We are seeking case studies of successful joint projects or ventures between sectors with EMCRs as the lead investigator or heavily involved.

The following case study with Dr Hixson at the Australian Wine Research Institute is an excellent examplar of someone in the non-private sector collaborating across industry sectors. It highlights that the focus of his KPIs is industry impact, in addition to the typical academic measures.

The case study with Dr Hall and A/Prof. Evans at the University of South Australia is an exemplar of academics working with industry via a cooperative research centre. It highlights the need for a clear understanding and good communication of outcomes for everyone involved.

Josh Hixson at the Australian Wine Research Institute

The Australian Wine Research Institute (AWRI, http://www.awri.com.au/about_the_awri/) focuses on research outcomes for the wine industry, be they fundamental science problems or practical solutions-based work. The AWRI is largely funded through wine industry levies and matching government funding, administered through the industry research and development corporation (RDC), Wine Australia.

The majority of researchers have come through traditional academic pathways (PhD, post-doc, researcher…or similar). Dr Hixson arrived at the AWRI straight out of his PhD four years ago. Researchers at the AWRI are evaluated on the same indices as traditional academic researchers (publications, citations, grants, etc.), but more importantly the industry impact of their outputs, as their research questions are driven by wine industry problems. As a point of difference to university-based researchers, they can't directly access ARC funding.

Dr Hixson has been working on externally funded grants (Department of Agriculture) looking at finding solutions for wine industry wastes. Most of this has been working between the wine industry and the livestock industry and trying to better utilise the wine industry wastes as a cattle feed. He has worked alongside wineries and grape waste processing facilities to sample or source product, and with the livestock industry to understand the barriers that needed to be overcome to enable grape waste to be accessed as a feed supplement.

Colin Hall and Drew Evans with the plastic automotive mirror

Beginning in 2008, the University of South Australia and SMR-Automotive (Samvardhana Motherson Reflectec) undertook a collaborative research project aimed at producing the world's first plastic automotive mirror. In late 2012 the commercial production of these plastic automotive mirrors commenced at the South Australian facility of SMR for export to the USA. Since then almost 2 million mirrors have been fabricated and exported, underpinned by several co-invented patent filings (2 fully granted) and many academic publications.

This project was led by (at the time) Senior Research Fellow Dr (now Professor) Peter Murphy, and project-managed by EMCRs Mr (now Dr) Colin Hall and Dr (now Associate Professor) Drew Evans. Throughout this commercially focused project there were many challenges faced by the researchers. As employees beginning their careers in the academic system, it was critical that Colin and Drew were able to publish scientific papers to build their academic track record, especially given both EMCRs were returning to the academic sector after years working in the private sector, and were on

short-term contracts. Building the academic track record seemed to be in conflict with the fact the project was paid for through a cooperative research centre, where the commercial outcomes were the primary metric of success. Rather than an either/or scenario, the team was challenged with both publishing and delivering outcomes for industry.

Rather than merely work excessive hours to meet the demands of the research and the development, to meet this challenge both EMCRs relied on other skills they had developed as scientists: strong communication, clear and concise report writing, and lateral thinking. These skills allowed Colin and Drew to find creative ways to undertake aspects of the research that were not subject to confidentiality, while discovering the science behind the product development. In a similar manner, through good project management, they were able to engage in development work above and beyond the lab that assisted SMR-Automotive to establish their advanced manufacturing facility that manufactures the mirrors. Their communication with both industry and their university was key to being able to meet the expectations of both.

Resources

Mechanisms for contacting industry

- CSIRO SME Connect centre
- www.convergencesciencenetwork.org.au

Relevant reading

- https://theconversation.com/academics-do-want-to-engage-with-business-but-need-more-support-62902
- http://sciencecouncil.org/about-us/10-types-of-scientist/
- <Link to summary of NatureResearch Symposium on Research Translation and Innovation>

Other resources

- http://www.innovation.gov.au/page/innovation-connections
- http://www.arc.gov.au/linkage-projects
- http://www.statedevelopment.sa.gov.au/industry/manufacturing/manufacturing-programs-and-initiatives/innovation-voucher-program
- http://www.industry.nsw.gov.au/business-and-industry-in-nsw/innovation-and-research/techvouchers
- Federal and state government department websites have good information on the research they carry out