Universities explained

A guide for EMCRs looking to collaborate with universities

If you're an early- or mid-career researcher (EMCR) working in industry, you may be asking yourself how the growing push for industry–university collaboration will affect you. The way those at universities approach problems can be quite different to the way those in industry approach their research. Industry focuses on identifying and solving problems, with a view to carrying forward a marketable solution. University research often looks at the fundamental mechanisms underlying these problems, with longer and less certain planning horizons. How can an EMCR in industry truly engage in this space?

Who is this guide for?

This guide is for EMCRs working in the Australian for-profit sector, be it a small, medium or large enterprise. Chances are you're working on research with clear applications to your industry and juggling this with a host of other tasks. Yet you share much in common with your counterparts at universities, whether it's the demand to conduct high quality research, the need to disseminate this research to your key stakeholders, or the search for funding.

Key considerations when starting the conversation with universities

› University researchers publish their research in peer-reviewed scientific journals. The number and quality of journal articles and their citations highlight the quality of their work and are critical in attracting grant funding and gaining promotions.

› While a university researcher can benefit from patents and commercial projects, such work may compete with journal publications, limiting their traditional pathways to achieve success and recognition.

› University researchers often, although not always, work on fundamental questions. This so-called basic research is curiosity driven and may not have an immediate application. This type of research can ultimately lead to scientific advances that can be translated, but it takes time.

› University timelines can be long. Grant applications require a plan of work for 3–5 years which may only start a year after the application is submitted.

Kick-starting collaboration is about demystifying what happens in universities, industry and other sectors, and why. It is about stimulating cultural change to support collaboration. The EMCR Forum aims to create a better mutual understanding and synergy across different sectors and a better understanding by early- and mid-career researchers (EMCRs) of potential career paths.

› University KPIs include: research funding, peer-reviewed publications, awards, research impact, contributions to teaching and learning (including curriculum review, delivery and innovations in teaching), research training (measured by number of graduated higher-degree research (HDR) students), governance and service (including leadership), community engagement, and patents.

› In university research, timelines often change. Unexpected results can lead to a complete change of direction in order to follow an interesting finding.

› The driver for university researchers is often a desire to advance knowledge and identify novel ways of solving problems. Financial gain is generally a secondary consideration.

› Generally, research budgets are small compared to commercial projects. A $500,000 project affords a researcher approximately three years of salary plus project costs. A $20,000 project grant over a year is considered significant.

› A lot comes down to listening and attitude. If you are really listening to the skills, expertise and networks that university researchers offer, and take the time to understand their pressures, then discussions are likely to be constructive for everyone involved.

UNIVERSITY

Publishing papers is just one (big) driver of science at universities. Other issues:

› Research funding

› Teaching and learning

› Higher degrees research (HDR) training

› Research impact

› Whether science is basic or applied

› University research administration

› Independent but keen collaborators

› Responding to changing evidence

SNAPSHOT OF INDUSTRY vs UNIVERSITY

	Industry	University
Timelines	Tight	Flexible
Budget	Variable	Generally small
Short-term outputs	Products / assets Intellectual property (IP) Issues resolved	Publications Presentations Grant applications Recognition in the media
Long-term outcomes	New products, devices, technologies, services or practices Wealth	Knowledge generation Grants Research impact, including changes in policy Intellectual property (IP) Highly trained students and scientists Professional standing and peer recognition Start-ups and spin-offs
Key skills (in addition to research)	Project management Asset development Market analysis Business case development Communication outside field	Publication and grant writing Ability to teach and learn Communication within field

What are universities (or people at universities) looking for?

› Expertise and infrastructure to apply, scale and integrate their research.

› Interesting problems to solve.

› Collaborations that can increase their skills and expertise.

› Financial and in-kind investment.

› Avenues to translate their research for the public interest and for commercial outcomes (termed research impact).

What will you get out of working with universities?

› A potential advance in knowledge or technology (it's research, so there are no guarantees).

› Highly trained critical thinkers.

› Development of new tools, devices or methods.

› Access to skills, capabilities (people) and infrastructure (equipment) that may not reside within your business.

WHERE TO START?

› Ask for suggestions and introductions from your networks

› Make cold calls: contact details for most university researchers are easily found online

› Attend conferences or workshops where university researchers are presenting their work

› Make connections through specialist groups or relevant scientific associations

› Explore patent literature to find out who is leading research and where they are located

What next?

› Read other discussion papers in this series to learn more

› Check out the EMCR Forum's Big ideas to spark collaboration on our website, as well as a broad range of case studies, reports and resources

› Join the EMCR Forum and get in touch to tell your story, make suggestions or ask for help

› Talk to friends or colleagues doing science outside your sector

› Join the conversation on Twitter using #kickstartcollab

Get in contact with the EMCR Forum

The EMCR Forum is the voice of Australia's early- and mid-career researchers (EMCRs), championing improvement in the national research environment through advocacy.

Connect

Email: emcr@science.org.au
Web: www.science.org.au/emcr-forum
Twitter: @EMCRForum

Visit www.science.org.au/kick-starting-collaboration to find out more about this project.

Become a member

Add your voice to EMCRs around the country and help create change.

www.science.org.au/emcr-membership-registration

The EMCR Forum will keep you updated on the work we are doing and how you can contribute, as well as informing you about opportunities for professional development, networking, funding and awards. Membership is free.

Case Study

Dr Sally Gainsbury—Conducting real-world research to address gambling as a real-world problem

Dr Sally Gainsbury has over 10 years' experience conducting gambling research. She is focused on understanding the psychology of gambling to inform the development of responsible gambling strategies and harm minimisation policies. A big challenge faced by Sally is that unlike other addictive disorders, such as excessive alcohol use, disordered and problem gambling does not have a large research and evidence base. Much of the research on gambling is limited due to a reliance on non-representative samples such as university students, and use of simulated non-monetary 'gambling' tasks, reducing the validity of results and conclusions that can be applied to actual gambling venues and populations.

Although gambling problems are related to substantial psychological and physiological health problems, little medical or public health funding is received. In light of all this, Sally's research involves relevant stakeholders, including industry and government partners.

During her honours and PhD research she engaged directly with the gambling industry (Gambling Technologies Australia and Aristocrat Leisure). While initial projects and collaborations such as these may be small, if conducted successfully and with respect, they can lead to ongoing partnerships. For example, the University of Sydney Gambling Treatment and Research Clinic received a donation from Clubs NSW to conduct a three-year research program. These funds were used to support early career researchers, building capacity in the field and producing research relevant to policy makers and industry as well as having academic rigour and contributing to theory.

With the appropriate safeguards, collaboration between academic researchers, industry and government can be highly productive and make important contributions to the academic field as well as providing real-world solutions to real-world problems. Sally has successfully brought together the key stakeholders from industry and government to grow the research field on which industry and government can make evidence-based decisions.