

# Industry explained

## A guide for EMCRs looking to collaborate with industry

If you're an early- or mid-career researcher (EMCR) working in the research sector you may be feeling overwhelmed with the drive to collaborate with industry. Traditionally, university is where fundamental research is done and communicated through publications and presentations. However, there is increasing attention being paid to the translation of science out of universities and into industry, defined here as any for-profit organisation. Despite a shared focus on profit, there is great diversity in size, structure and ownership within the private sector, with resulting differences in resources, priorities and flexibility. How can an EMCR truly engage in this space?

### Who is this guide for?

This guide is for EMCRs working in Australian universities. Chances are you're working on research of clear fundamental importance to your field of research and juggling this with a host of other tasks. Yet you share much in common with your counterparts in industry, whether it's the demands to conduct high quality research and disseminate this to your key stakeholders (in your case peers), or the search for funding.

### Key considerations when starting the conversation with industry

- › Employees in industry often have significantly different KPIs (key performance indicators) than university researchers, so understanding how collaborators will be 'graded' on their involvement in a project with you is essential. It doesn't hurt to ask 'what does success look like for you?'
- › Understanding intellectual property (IP) ownership and confidentiality requirements and their implications before starting a project is important. For example, would there need to be a delay in publication of research?
- › Decision structures in industry are very different—unless your potential collaborator is the CEO, they usually won't be able to just decide to work on something. Try to persevere beyond the initial contacts, who are often focused on sales and marketing, to meet with the technical people.
- › It is important to keep an open mind. Respect the expertise of those working in industry.

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.



- › Contrary to stereotypes, research does occur in industry, commercialisation does occur in universities and IP is generated in both. They are just captured and valued differently. Be aware that agreements and IP can get very tricky in crossover areas e.g. companies that do in-house research, university research centres with commercialisation requirements.
- › You should expect that the projected profit will need to be larger, and the possible expenditure or potential cash-flow to be significantly lower in industry. Don't treat industry as a pot of gold at the end of your scientific rainbow.
- › Flexibility is required to engage with industry and many funding schemes are subsequently ill-suited. Smaller businesses generally require more flexibility.
- › A lot comes down to listening and attitude. If you are really listening to what problem industry needs to solve and what pressures they are under, and if you come with an open mind, discussions are likely to be constructive for everyone involved.

## INDUSTRY

Profit is just one (big) driver of science in the for-profit sector.

Other issues:

- › IP considerations
- › Confidentiality
- › Budget oversight
- › Corporate structure
- › Decision-making and approval
- › Responding to changing market climates

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

- › Experts to help solve problems, improve efficiency, or break into new markets.
- › Reputation. Companies want to show that their product or service is proven to be safe and effective, has scientific validity, and is well received by their consumers.

## SNAPSHOT OF INDUSTRY vs UNIVERSITY

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



- › Companies are less interested in publishing papers, and more interested in putting (proven) ideas into IP, products, devices or services. However, having papers published does improve their reputation.
- › Connections to identify future employees.
- › Opportunities to 'give back' (corporate citizenship agendas).

### What will you get out of working with industry?

- › Impact: Industry collaborations can take your research and ideas and move them quickly into application. You might 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 areas you hope to impact.
- › Employment: Contacts with industry can provide potential job and work integrated learning opportunities such as industry secondments for students who wish to pursue non-university careers. This will be attractive to potential students.
- › Recognition: Australian universities are moving towards formally rewarding researchers for active industry collaborations.
- › Funding: Some grants are available for industry collaborations, such as ARC linkage grants and NHMRC partnerships.

### WHERE TO START?

- › Ask for suggestions and introductions from your networks (not just your supervisor)
- › Identify companies where there is a current or potential impact from your research and cold call (be persistent where welcome!)
- › 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](mailto:emcr@science.org.au)

Web: [www.science.org.au/emcr-forum](http://www.science.org.au/emcr-forum)

Twitter: @EMCRForum

Visit [www.science.org.au/kick-starting-collaboration](http://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](http://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.



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# Case Study

## Dr Colin Hall and Associate Professor Drew Evans— Developing 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. The commercial production of these products commenced in 2012 at the South Australian facility of SMR for export to the USA. Since then almost 3 million mirrors have been made and exported, underpinned by several co-invented patent filings (two 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 their academic track records seemed to conflict with the fact the project was paid for through a cooperative research centre, where the commercial outcomes were the primary metric of success.



*Dr Colin Hall*



*Associate Professor Drew Evans*

Rather than an either/or scenario, the team was challenged to both publish papers and deliver outcomes for industry.

Rather than merely work excessive hours 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. Their communication with both industry and their university was key to meeting the expectations of both.

