“Engaging with Industry”
Tuesday 28 August via video conference

Notes and documents following the workshop

Chair: David Cahill. Associate Dean (Research)

Invited speakers for this workshop

- Professor Colin Barrow, Chair in Biotechnology, School of Life and Environmental Sciences.
- Dr Anne Drake, Governance & Curriculum Coordinator and Acting Manager Research Administration.
- Professor Andrew Bennett, Associate Head of School (Research) School of Life and Environmental Sciences.
- Dr Greg Pullen, Senior Commercial Manager, Deakin Research Commercial.

Secretary: Teresa Treffry
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The remaining workshops in this series are as follows, each presentation will last for 2 hours and will be by VMP across all campuses. In each case the format allows for discussion and questions following presentations from invited speakers.

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Introduction ................................................................. Chair, David Cahill

This is the second of our Faculty research workshops, aimed particularly at middle and early career researchers. The theme today is ‘Engaging with Industry’. This is something that can be quite difficult to do, not least because it demands time in a busy academic schedule. Our speakers for this session all have different roles and are able to offer a wealth of experience and insight into the issues to be considered.

Guest speakers for this session are:

- **Professor Colin Barrow**, *Chair of Biotechnology at Deakin University and also Director of the Centre for Biotechnology and Interdisciplinary Sciences (CCB)*. Colin has previously held senior positions in pharmaceutical and nutritional industries and at present has a number of industry collaborations.

- **Dr Anne Drake**, *Governance & Curriculum Coordinator and acting Manager Research Administration*. Anne spent 10 years working with AWB Ltd and will present on an industry perspective.

- **Professor Andrew Bennett**, *holds a personal Chair and is Associate head of School (Research) in the School of Life and Environmental Sciences*. Prior to joining Deakin he was a Senior Scientist at the Arthur Rylah Institute, Department of Environment and Primary Industries, Victoria. His engagement with industry is largely government based.

- **Dr Greg Pullen**, *Senior Commercial Manager, Deakin Research Commercial*. Greg has extensive experience building research collaborations and commercialisation in the biomedical, medical devices and diagnostics sectors. His experience spans both Australian and International Universities as well as several biotechnology companies

Welcome ............................................................. Pro Vice Chancellor Trevor Day

It is pleasing to see so many here today. One of the aims in the Deakin University strategic plan is to do research which ‘makes a difference’.

Over the past two and a half years that I have been here, the University has really begun to embrace this ideal by engaging with the community and recognising the need to work with industry in new ways, matching researchers with industry to produce outcomes that will be mutually beneficial.

This is not the traditional way that academics have worked in the past and will need to some degree a behavioural change. A discussion board is to be opened up to look at these issues and better identify the support that may be needed. I look forward to hearing the speakers today and the insights they have to offer.
Presentation 1

**Professor Colin Barrow** is Chair of Biotechnology at Deakin University and also the Director of the Centre for Chemistry and Biotechnology (CCB). Previously he was Executive Vice President of Research and Development for Ocean Nutrition Canada (ONC) where he led the development of seafood-derived supplements and healthy food ingredients and technologies.

His research interests include a broad spectrum of natural products chemistry, biological chemistry, food biotechnology and omega-3 oil technology. Current research is primarily in two areas: Omega-3 biotechnology and amyloid fibres and nanomaterials. He collaborates with a variety of research groups in India, China, New Zealand, Ireland and Canada.

Having experience of both the industry and academic point of view is of great advantage and the following insights are offered.

- Getting started is a lengthy process so initial seed funding will be needed, act quickly in this respect. Put the resources you have in at the start.

- You will need to work in and also build a team. Communication and collaboration are essential, remain involved in the relationship and don’t pass things on. Be aware that building a relationship takes a great deal of time and be prepared for the commitment. Develop an internal support, both at the science and business level.

- Small companies are entrepreneurial, quick moving and changing; larger companies are process driven. These are two different mindsets but you must be entrepreneurial in this process. Think ‘big picture’ - what can the company achieve and how can you help them do this? Present well and impute what you want to project. Whichever type of company you approach aim as high as you can, the CEO or chief science person for example.

- Remember, knowledge is not acting or deciding and it is important that your knowledge is moved into action and quickly.

- Do your research where the company is concerned, why are they looking at you, is it for equipment or expertise? You have to sell yourself and be clear about what you want from this collaboration (*a post doc/project/ ARC linkage/ funding?*) Be clear and don’t under ask.

- Intellectual property (IP) can be a sticking point and the way that the relationship will work often depends on the IP Be aware of this framework. Initially decide the general terms then pass everything into the hands of lawyers.

- Don’t give up. Colin pointed out that he started with about $20,000, no students, post doc or lab. The key is to build and be aware of how many relationships to take on – noting that sometimes one alone may dominate the collaboration.

The full slide presentation from **Professor Colin Barrow** follows.
How to Interact with Industry

Professor Colin Barrow
Chair in Biotechnology
Director of Centre for Chemistry and Biotechnology
Deakin University
My Background

• Academic at Deakin and University of Melbourne.
• Senior positions in pharmaceutical and nutritional industries.
• Managed academic relationships from industry.
• Managed IP portfolio.
Current Industry Collaborations

- Plant & Food NZ (New ARC Linkage; $10.8M MBIE Grant, CRN)

- ONC/DSM (ARC Linkage; DECRA)

- Kemin (Joint students, ARC Linkage submission, RESS)

- Indian Oil, Reliance, Biocon, Bigtech, TERI, CATAS (Joint Students).

- Aquatrophic, Omega Nutritionals, Graphene Science, Marinova, Manuka Bioactives, Clover and others (Seeding Relationships).
Learnings for Working with Industry

• Work out what they want from you.
• You have to sell… but not too much.
• Be clear about what you want.
• IP issues can be overcome.
• Build teams
• Remain involved
Learnings for Working with Industry

• Communication and collaboration are critical.
• Act quickly.
• Knowledge is not acting or deciding.
• Process and entrepreneurial are opposites.
• Impute.
• Lean into it.
Apple Marketing Philosophy

**Empathy**
We will truly understand their needs better than any other company.

**Focus**
In order to do a good job of those things that we decide to do, we must eliminate all of the unimportant opportunities.

**Impute**
People DO judge a book by its cover. We may have the best product, the highest quality, the most useful software etc.; if we present them in a slipshod manner, they will be perceived as slipshod; if we present them in a creative, professional manner, we will impute the desired qualities.

— Mike Markkula January 3, 1977
Lean into it

“Lean into it. It means the outcome doesn’t matter. What matters is that you were there for it. Whatever it is. Good or bad.” ~ Quote from the movie People Like Us.

“We think that the point is to pass the test or overcome the problem, but the truth is that things don’t really get solved. They come together and they fall apart. Then they come together again and fall apart again. It’s just like that. The healing comes from letting there be room for all of this to happen: room for grief, for relief, for misery, for joy.”

Move toward the places that scare you, that are most uncomfortable for you, and allow them to dissolve, to break apart, and for success to come as a result of that.

When the bigger picture seems too daunting, don’t be paralysed by how to get started. Just lean in the right direction, take it one step at a time, and things will happen.

Sweep the sheds – All Blacks Philosophy

Initially, I didn't start out to be a member of a band. I wanted to make films, write plays, books. When I found myself in a band, I wanted to bring some of these ideas into it. We never did much with it, though. Jim Morrison
Dr Anne Drake previously taught biology at secondary schools in the Geelong area before commencing work at Deakin as a research assistant/tutor in the plant physiology lab in the early 90’s, and completing a PhD (plant biochemistry/physiology) in 1998.

Dr Drake then worked for 10 years for AWB Ltd (formerly known as the Australian Wheat Board), as project manager of their research portfolio, with an annual investment > $6 million and covering a range of research activities from wheat breeding programs and improved testing technologies through to end product optimisation.

The organisation had a small research group at the company’s grain testing laboratory (Agrifood Technology) based at Werribee but most research was conducted through collaboration with external institutions including CSIRO and DPI and several universities including - The University of Melbourne, RMIT, University of Queensland, Curtin, Charles Sturt and VUT.

Following the United Nations ‘Oil for food’ enquiry in the mid 2000’s, into wheat sales to Iraq, the various divisions of AWB Ltd were eventually dismantled and the company sold.

Anne has been working at SEBE since 2009 in various administrative rolls with the governance and curriculum group, and is currently managing the research administration group for the Faculty.

Looking at the issues from an industry perspective the following summary is offered

- The most successful research collaborators see the big picture, how the company works and their strategic position in the industry.

- Do your homework, know the company ..... How can you add value?

- If the company does not know or have a fixed idea of their goals, then you are able to help in defining these by presenting a fresh viewpoint BUT be realistic about what you can offer and make sure that everything is clearly defined.

- Keep communications open and if problems arise say so immediately and have a plan in place - suggesting solutions.

- Business is all about the bottom line, time – money – action – milestones. Those that do not deliver do not last, so answer emails and phone calls promptly. Be aware of business etiquette and behaviour, ‘dress the part’

- Remember that managers see working with academia as beneficial only to the extent that it advances the company towards its goals

Additional information in the full slide presentation from Dr Anne Drake follows.
Collaborative research with industry – an industry perspective

Dr Anne Drake
Manager, Research Administration Group
Faculty of Science, Engineering and Built Environment
AWB Ltd (formerly the Australian Wheat Board)

- Sole wheat exporter for Australia (1939 – late 2000s)
- Exporting on behalf of 30,000 growers
- Annual export of > 12 million tonnes (08/09)
- Marketing to over 50 countries
- In-house technical division - quality lab. (Agrifood Technology)
- Small R&D group
- A broad range of quality issues
AWB (International) research project manager

• Approximately 20 R&D projects/annum run concurrently

• Projects – wheat breeding programs, improved grain and flour quality, improved testing methodologies (on-farm and at delivery sites), end product development, competitor wheat evaluation, customer surveys, data mining etc.

• Majority of research projects outsourced to external providers (CSIRO, DPI, U of Melbourne, RMIT, VUT, Charles Sturt, Curtin, U of Q)

• Projects could including sponsorship of PhDs

• Most projects were *not* put out to tender
Engaging with an industry partner ........

- Do your homework – be familiar with the company’s objectives, structure, products, technical support and issues
- Determine collaborative opportunities - define specific collaboration *outputs* that can provide value to the company
- Understand and engage with the ‘business culture’
- Find out who is the most appropriate person to contact
- Be realistic about what you can offer - don’t promise what you can’t deliver
- Be prepared to ‘engage’ as a partner and maintain the relationship
- A project management plan is there for a purpose
- Communication is the key to managing the collaboration
Projects that were successful ......

• Researchers had a good understanding of the business and the project’s strategic context
• The university team shared the vision of how the collaboration can help the company (an understanding of company practices and technology goals)
• Established a strong communication linkage with the business stakeholders (face-to-face meetings on a regular basis, develop an overall communication routine to supplement the meetings, respond promptly to email/phone requests )
• Researchers delivered in accordance with agreed parameters in the project management plan (milestones, reporting, budget etc.)
• Researchers ‘engaged’ with the business stakeholders
• Researchers respected the collaboration and were prepared to invest in long-term relationships
“Managers see working with academia as beneficial only to the extent that it advances the company toward its goals”
Professor Andrew Bennett spent the first 12 years of his career as a wildlife scientist at the Arthur Rylah Institute, Department of Environment and Primary Industries, before being recruited to Deakin University in 1996 where he is now Associate Head of School (Research) in the School of Life and Environmental Sciences.

Andrew has a long-standing research interest in understanding the effects of landscape change on native fauna, and particularly in finding solutions to maintain biodiversity in agricultural landscapes. In the last 8 years he has been co-leading a series of projects on the effects of fire on native fauna and how they respond to different fire mosaic patterns. His research has been carried out in partnership with, and funded by, numerous conservation agencies including the Department of Environment and Primary Industries (Victoria), Parks Victoria, several Catchment Management Authorities, and Land and Water Australia.

These collaborations are primarily government bodies and not commercial groups, but the same rules apply.

Asking the question ‘Research collaboration with industry partners: what contributes to an effective outcome?’ the following themes are considered.

- **Recognising differences**: industry appreciates that a paper adds scientific credibility but is not overly concerned about publications (for example), and has a different motivation for conducting research, a different reward structure and different anticipated outcomes from a University.

- **Effective communication**: this is crucial and must be ongoing, be very clear from the start (i.e. in writing) exactly what each party will contribute. In developing the research, consider the key questions and expectations, again how can you add value?

- **Relationships and credibility**: network as much as you can, ‘science is a contact sport’ and it helps to be in the right place at the right time. Start small to build credibility and look for small ways to help without reward. Remember what happens in this project will pave the way for the next.

- **Funding – it’s rarely direct**: sometimes if a problem arises and you are able to solve it then funding can appear to come from nowhere. Larger projects may often involve you and the partner seeking funding from someone else. Be aware of potential costs both in money and time – can you arrange a single report for example if working with multiple agencies. How much funding you ask for is always a tricky question. Is your partner thinking big or small? What is their budget against the cost of your project? If the budget is limited what can you achieve for this?

- **Look for multiple benefits**: opportunities for honours and post-grad students, the potential for greater impact for your research and for larger funding grants.

- **Dispelling some myths**: eg research with industry is ‘second class’- any research can be it depends on design and motivation. Talk with Deakin Commercial about your idea.

The full slide presentation from Professor Andrew Bennett follows with additional information.
Research collaboration with industry partners: what contributes to an effective outcome?

Andrew F. Bennett
School of Life and Environmental Sciences
Themes

1. Recognising differences
2. Effective communication
3. Relationships and credibility
4. Funding – it’s rarely direct
5. Look for multiple benefits
6. Dispelling some myths
Mallee Fire and Biodiversity Project
insights for conservation and management
[our industry partners on this project – from three states]
1. Recognising differences

Industry vs University

Motivation for conducting research is different
Anticipated outcomes are different
Reward structures are different
Funding commitments are made by senior managers where
  - a policy issue is on the agenda
  - a specific problem needs to be solved
  - it will enhance meeting their work priorities
Think from the industry perspective
- how will the research solve their problems

Design the research to meet both objectives
- high quality science addressing conceptual questions
- solutions for specific issues
- study design is critical

Be adaptable

Plan for outcomes that meet both objectives
- recognise extra time and cost involved
2. Effective communication is critical

In developing the research
- what are the key questions, issues?
- what are the expectations?
- what exactly will each party contribute?

In carrying out the research, communicate
- as you progress (not just at the end!)
- co-ordinating/reference group for interaction
Communicating results in relevant form
    .... not scientific papers (although they have value too)!

- newsletters, presentations through the project
- accessible form to highlight key outcomes
  (e.g. booklets, maps, GIS layers, information sheets)
- spoken presentations to broader stakeholder groups
  (on their territory and location)

Involving the partners in the research
3. Relationships and credibility

Credibility is a key for all research funding (cf ARC – publication record)

Past experience of your work (and its quality/relevance)
Knowing that you’re capable and will deliver
Knowing that you understand their needs
Personal relationships
Going the ‘extra mile’

What you do in this project is paving the way for the next and the next ....
Mallee Fire and Biodiversity Project

Faunal Refuge Project ‘Black Saturday
Statewide Landscape Mosaic Burning

Experimental Mosaic Burning
Box-Ironbark Forest, a management experiment

Project Hawkeye Mallee
Bushfire Royal Commission and the imperative for monitoring
4. Funding is rarely direct

Rarely come direct to you with an offer!

Working together to find funds
   - part funding from several sources
   - look for established or new ‘buckets’ of funding
   - a problem arises and you can solve it

Both small and large grants are beneficial
Be aware of potential ‘costs’, e.g.
- workload in establishing contracts
- delays in establishing contracts and starting
- obligations to report to multiple agencies
- one year at a time funding!
5. Multiple benefits

Opportunities for Hons and post-grad students

Research infrastructure or manipulations not otherwise possible for a University
- management ‘experiments’

Potential for greater impact from your research

Potential for larger funding grants

Enhanced reputation for the University
6. Dispelling some myths

a) Industry money is ‘easy’ to obtain
   - different types of costs
   - credibility and reputation over years
   - lengthy processes

Deakin Commercial is an important contact
Dispelling some myths

b) Research with industry is ‘second class’

- it can be (but so can be research funded by the ARC)
- how you design and frame the research
- your motivation

e.g. Mallee Fire and Biodiversity Project
  - 7 PhD students, all successfully completed
  - high quality papers (e.g. J Applied Ecology, Diversity and Distributions, Conservation Biology, Global Ecology & Biogeog etc)
How to start

Think about relevant ‘industry’ sources

Do things to help – become known!

Think from their perspective - what are the issues?

Look out for funding schemes, discuss ideas

Talk with the Deakin Commercial about ideas

If successful, ensure high quality, relevant research

Keep trying!

Go for it!
Dr Greg Pullen is currently Senior Commercial Manager in Deakin Research Commercial, where he is responsible for both research collaborations and contracts between industry and government organisations and the University, as well as for development and commercialisation of innovative Deakin-developed technologies and commercial opportunities.

Prior to joining Deakin, Dr Pullen held similar roles at the University of Melbourne and Auckland UniServices (the commercialisation company for the University of Auckland). He has also worked extensively in the biotechnology industry with ASX-listed companies (CSL Limited, Phylogica Pty Ltd, and Peptech Limited), where he was responsible for various business development, collaboration management and licensing projects. He has managed the development of a number of pharmaceutical and vaccine products, often in collaboration with major international companies such as Merck and Astra. Dr Pullen has also held senior roles in private companies in the medical devices and diagnostics industries.

As an overview, when considering engagement with industry bear in mind the following:

- What are your core skills, cost accordingly and do not run loss leaders. Don’t be afraid to take other researchers with you.

- Research your preferred partner/sector and Identify industry needs. Deakin Commercial can help if required.

- Begin with a basic framework agreed face to face with the partner, take someone with you if need be. Regarding the contract, Deakin Commercial has developed a number of standard templates in an effort to streamline the process.

- Be aware of IP considerations.

- Regarding the question of student involvement, this will really depend on the time frame and research aspects needed for the project. Student supervision/access can be difficult for industry partners.

- Proposals should be clear and simple; helpful to involve Deakin commercial at an early stage to assist with scoping, timelines, deliverables etc.

- Communicate constantly and professionally, remember that deadlines are not optional. Record all details and state any risks upfront. Science does not always work but good communication and a professional attitude can still lead to more work.

- Contact details for Deakin Commercial - research-partnerships-office@deakin.edu.au phone +61 3 522 71135, or see following link Contact a Commercial Manager

The full slide presentation from Dr Greg Pullen with more detail follows.
ENGAGING WITH INDUSTRY: THE INDUSTRY VIEW

Dr Greg Pullen
Deakin Research Commercial
CONTENTS

• You
• The Partner
• Students – yes or no?
• Communication
• Project Management
YOU: WHAT DO YOU DO BEST?

• Work out what your areas of expertise really are
  – Avoid being a “Jack of all trades”
• Cost your proposal accordingly
  – Current government funding restrictions make this difficult, but at least cover costs!
  – No “Loss Leaders” – this sets market expectations and cannot be reversed for subsequent projects
• Teams with complementary skills can be useful for broad-based project proposals
INDUSTRY: WHAT DO THEY WANT?

- Research your preferred partner/sector
  - Deakin Commercial can help if required
- Understand their real needs/problems/issues
  - Research interests
  - Internal processes
  - Current technologies
  - Internal champions?
INDUSTRY: WHAT’S IN IT FOR THEM?

• What’s in it for the Partner?
  – Solving a pressing problem?
  – Saving them time/money?
  – Productivity/efficiency gains?
  – Data to inform policy or practice?
  – Exclusivity?
IP CONSIDERATIONS

• Deakin always tries to retain publication, research & teaching rights
  – Most partners are open to a review period for all publications and conference presentations, and DU can keep student theses confidential for up to 12 months if required

• If idea/concept comes from industry, and industry rates are paid, they can own IP

• If idea/concept comes from Deakin, we will own but will license commercialisation rights to partner
STUDENTS ON INDUSTRY PROJECTS

• Should you pitch students for industry projects?
• Depends!
  – Student supervision/access can be difficult for industry partners
  – Industry often wants projects completed faster than in a two-three year timeframe (PhD/Masters)
  – Project needs to have appropriate research aspects
  – Honours students may not have the right skills
COMMUNICATION

• Clear, simple proposals
  – Very different to Cat 1 grant proposals
  – Partner’s decision-maker may not have PhD!
• Make sure expectations are clear from all parties
  – Confirm meetings in writing
  – Clarify deliverables, timelines and budget
• Helpful to involve Deakin Commercial at an early stage to assist with scoping, timelines, deliverables etc.
PROJECT MANAGEMENT

• Update partners regularly
• Deliver on time and on budget
• Stick to the agreed project plan!
• Communicate problems and issues (with suggested solutions) early
  – Don’t wait six months to tell partner equipment is broken!
• Reputation for quality outcomes is vital
  – Can lead to future projects and long-term relationships
WHAT WE’VE COVERED

• Know your real skills
• Understand your partner’s needs and drivers
• IP flexibility
• Students
• Communication
• Project Management