



# *Careers for*

Science Graduates

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## NOTE:

Wherever you see this icon  please go to [www.graduatecareers.com.au](http://www.graduatecareers.com.au)>>What Job For You>>Career Profiles>>Science>>More Information for continued discussion and/or useful websites on that subject.

# Introduction

Science is a systematic study to challenge, clarify, understand or develop knowledge about the natural or physical world. Science can focus on organisms smaller than bacteria, to systems as large as the universe and everything that exists in between. As members of the global community, Science graduates are becoming increasingly responsible for finding technological solutions to issues such as reducing our carbon footprint, the impact of climate change on our planet, the use of stem cells in medical research to improve our quality of life and using nanotechnology to create new materials.

When considering whether science is a suitable match for you, it is worth knowing what is needed for a successful and enjoyable career in science. This includes having a critical and inquiring mind, a high level of numerical literacy, an attention to detail and an interest in current scientific issues.

Science graduates are highly sought after due to the broad range of skills they develop and enhance during their studies. These range from technical skills such as conducting practical investigations and the application of scientific methodologies to those proficiencies that are transferable including problem solving and the ability to effectively communicate.

With many organisations looking to gain an edge over their competitors by creating new products and services or improving existing ones, employment of Science graduates is spread across a variety of industries. Examples include agriculture, primary industries, food processing, education, information technology and community services.



# Science Qualifications & Skills

## Undergraduate Study

There is a range of pathways a student can pursue by studying a higher education science-based course. The most common award available is a three-year Bachelor of Science or Bachelor of Applied Science course. In these generic courses, students can focus on science by studying a single degree, increase the breadth of their studies by choosing electives from outside their faculty or combine with a second degree such as Arts, Commerce, Law, Engineering or Information Technology.

### Skills Developed by Undergraduate Study

Science graduates are highly sought after by employers from a range of industries and sectors due to the broad range of skills and attributes developed during their study, including:

- **Discipline knowledge** – an understanding of the nature, practice and application of science with an advanced level of understanding of at least one specialised area of contemporary science, with a capacity to apply this knowledge
- **Effective communication** – write professionally as appropriate for the discipline of specialisation; make effective oral and visual presentations; communicate scientific ideas and results effectively to non-scientific audiences
- **Quantitative literacy** – collect, organise, analyse and interpret data in a meaningful way, using mathematical and statistical tools as appropriate to the discipline of specialisation
- **Information and communication technologies literacy** – use a range of sources to find the desired information, evaluate the quality of information obtained and its relevance to the task being undertaken; make effective use of current information and communication technologies to enhance work
- **Inquiry and critical thinking** – expand knowledge through evaluating arguments and synthesising ideas; apply discipline knowledge and critical thinking to analyse challenges and to develop effective solutions
- **Ethical, social and international understanding** – awareness of the ethical issues and occupational health and safety issues relating to scientific research; an understanding of how scientists, working in a worldwide community, build upon and recognise the work of others; an appreciation of the role and benefits of science in society; a capacity to contribute and in an international context
- **Management of self, others and tasks** – have the capacity to evaluate own performance; be able to appropriately plan and carry out tasks and work collaboratively and effectively with individuals and in teams.

(Source: *Monash University Faculty of Science*  
[www.sci.monash.edu.au/undergrad/employ/attributes.html](http://www.sci.monash.edu.au/undergrad/employ/attributes.html))

Postgraduate study is considered to be valuable for Science graduates – not only for personal development reasons, but also in terms of increasing employability.

## Further Study

Towards the end of an undergraduate course students have the option of applying to their faculty for an honours year. This fourth year is a minimum requirement if considering a career as a professional scientist. Academic results are the main criteria to being accepted into an honours program.

An honours year generally involves larger research projects which you will undertake under the guidance of an academic supervisor with experience in the area of your project. This year can be very important, as many of the raw skills you developed throughout your degree will be refined and enhanced, and their relevance to the workplace therefore dramatically increased. In fact, many employers will prefer or even stipulate that candidates have at least an honours degree when recruiting.

In addition to this there are postgraduate certificates, diplomas and masters by coursework. For those aiming to pursue a career in scientific research, the necessary awards are either a masters or a PhD by research. Postgraduate study is considered to be valuable for Science graduates – not only for personal development reasons, but also in terms of increasing employability.

### Skills Developed by Postgraduate Study

The opportunities for specialisation in postgraduate study can provide a set of skills which greatly enhance your value in the marketplace – you can become an expert in your chosen field. The research student's résumé will often include specific scientific techniques and knowledge, as well as other general skills which may be of great interest to employers. Students tend to underestimate the value of these skills, which can include:

- **Written and verbal communication skills** – completing a thesis and any accompanying documentation develops the ability to write succinctly and clearly. Teaching practicals and tutorials develops verbal communication skills. Presentation skills developed in seminars and the ability to explain research to laymen are particularly valuable.

- **Capacity for self-direction** – time management skills, the ability to evaluate the priorities of a project and the efficiency of a particular approach are also developed. The originality of research necessitates the ability to self-direct.
- **Analytical skills** – quantitative analytical skills; computer modelling techniques and problem solving/qualitative analysis which are vital to research are developed.
- **Accepting and providing supervision** – research indicates a willingness to learn, as well as the ability to supervise others. Research also requires students to articulate goals clearly and develop work schedules to meet these.
- **Capacity for teamwork** – similarly, teamwork experience garnered through collaboration is very important.
- **Cross-cultural skills** – some research students can develop an understanding of other languages and cultures through overseas placements/fieldwork or the nature of the teams they work in.
- **Dealing with information** – analysis and presentation of information learned during postgraduate research is a skill essential to fields such as information science, administration, systems analysis and production planning.
- **Perseverance** – finishing a long-term project demonstrates the capacity to see a project through, to be committed and to be organised.



## Science Disciplines

At the tertiary level, science provides a myriad of specialisations. These include, but are not limited to:

### Biological and Life Sciences

- Agricultural Science
- Anatomy
- Botany and Plant Sciences
- Conservation Biology
- Developmental Biology
- Ecology
- Entomology
- Food Science
- Genetics
- Health / Sports Science
- Marine and Freshwater Biology
- Zoology and Animal Sciences

### Biomedical and Behavioural Sciences

- Biochemistry
- Biotechnology
- Cell Biology
- Immunology
- Microbiology
- Molecular Biology
- Neuroscience
- Pathology
- Pharmacology
- Physiology
- Psychology

### Earth and Environmental Sciences

- Atmospheric Science
- Environmental Science
- Geography
- Geology
- Geomatics
- Geophysics

### Physical, Chemical, Mathematical and Computational Sciences

- Astronomy
- Astrophysics
- Chemistry
- Computer Science
- Materials Science
- Mathematics and Statistics
- Meteorology
- Physics

## Career Outlook for Science Graduates

The outlook for Science graduates in the labour market is competitive, but the employment secured is often quite rewarding. It is worth noting that Science graduates are nearly as likely to pursue non-scientific professional roles as scientific ones. Around 40 per cent of Science graduates use the skills and processes they learnt while studying Science (rather than their knowledge of science) to undertake roles in a wide range of areas. Graduates may pursue roles associated with the sciences, for example science editors, educators, journalists, patent attorneys, commercialisation agents and government policy analysts. Alternatively, they may use their transferable skills, such as mathematics in business. Common business careers into which Science graduates move are management consulting, business analysis, stockbroking, insurance, banking, risk analysis and utilities management.

This diversity of opportunity is exciting to many graduates, enabling them to adapt their careers as their interests and experience develop rather than being locked into a specific vocational pathway. This is particularly relevant for the future employment market in which graduates are expected to undertake between three and five career changes, not just job changes, during their working lives.

Scientific careers also command a certain level of prestige and Australia is a centre of development for many new scientific fields. Pursuing your area of interest or specialisation can yield great results, particularly if you challenge established notions and aim to work in a less publicised area. It is also important to keep your options open when you start looking for work. Science-related industries are dynamic and you need to be up-to-date in your understanding, as well as flexible enough to consider areas of research and work which might not be your first preference. Read newspapers and journals, network, keep in contact with your university employment and careers department, lecturers and supervisors, and undertake further study if necessary.

### Graduate Salary Information

Salary rates can change, so for current information about the starting salaries and destinations of Science graduates visit GradsOnline ([www.gradsonline.com.au](http://www.gradsonline.com.au)) produced by Graduate Careers Australia (GCA). GradsOnline provides state-by-state and gender breakdowns of science-related industry activity, trends in graduate salaries and activities and salary comparisons with other fields of education. For salary and labour market information for TAFE graduates, visit the National Centre for Vocational Education Research (NCVER) website, ([www.ncver.edu.au](http://www.ncver.edu.au)). 

## Growth Areas in Science

In many fields of science, the development of new knowledge and techniques has increased in recent years, helped along by technological innovations and the higher performance of research and development (R&D)-driven economies. Biotechnology in particular seems poised to enter a new era, with the human genome project leading to a strong increase in technological and knowledge development – and consequently, to increased employment in the field. Other growth areas in science are likely to arise in the chemical, pharmaceutical and food processing industries, where demand exists for chemists, biochemists, geneticists, molecular biologists and microbiologists. As the global community moves towards a more sustainable approach to living, other areas of employment growth will occur in environmental protection, resource management, and areas focusing on response to climate change and alternative energy sources.

### Cooperative Research Centres

Cooperative Research Centres (CRCs) are the result of a nationwide program introduced by the Australian Government in 1990 to generate important national economic and social outcomes through scientific research. This research is conducted on a contractual basis and is partly funded by the government. Each CRC project consists of a partnership between government research facilities, university departments and the research and development divisions of companies, both large and small.

Collaborative links between the private sector, higher education and government mean these multidisciplinary research environments have the resources to address the needs of industry and the community in a particularly efficient and comprehensive manner. On average, these facilities have more than thirty full-time staff and an operating budget of approximately A\$30 million per year. A new round of CRCs is announced annually and these are given contracts to perform specific research; employment opportunities as full-time research staff are generally available to postgraduate students and to graduates for the duration of the contract and its funding.

Postgraduate students who undertake their research through a CRC often engage directly with the industry partners who are the ultimate beneficiaries of the research. Postgraduate students consequently tend to be regarded, on completion of their studies, as 'industry-ready'.

For more information, visit the Australian Government's Department of Innovation, Industry, Science and Research (DIISR) official Cooperative Research Centre information website ([www.crc.gov.au](http://www.crc.gov.au)), where you can find out about the selection process, current contracts and other developments. CRCs also have their own representative organisation, the Cooperative Research Centres Association (CRCA), whose website ([www.crca.asn.au](http://www.crca.asn.au)) has details of the contribution CRCs make to education in Australia. 



# Employment Opportunities for Science Graduates

Studying a Science degree is demanding due to the combination of lectures, tutorials, practicals, assignments and exams. However, Science students often overlook the importance of developing an awareness of employment opportunities and career pathways that are available both during their Science studies and as a graduate.

## Types of Industries

When considering your career options as a Science graduate, you should begin by considering the type of industry in which you would like to work. According to the annual Australian Graduate Survey conducted by GCA, the main industries of employment for students who graduate with a Science-related major are:

### Business Services

- accounting, banking, finance and insurance
- management and consulting services
- personnel and recruitment

### Education

- higher education and vocational training
- primary and secondary education

### Government

- defence and intelligence agencies
- federal, state and local government departments
- public order and safety services

### Health, Medical and Pharmaceutical

- allied health services
- hospitals, pathology and diagnostic imaging services
- pharmaceutical and medicinal product manufacturing
- sports and physical recreation activities

### Information and Communications Technology

- computer systems design and technology innovations
- telecommunications

## Manufacturing

- agriculture, food and beverage production
- building and construction
- engineering consulting, design and production
- gas, oil and mining
- natural resources and energy
- roads and transport.

(Source: Australian Graduate Survey, 2008 GCA; Monash University Faculty of Science [www.sci.monash.edu.au/undergrad/employ/industries.html](http://www.sci.monash.edu.au/undergrad/employ/industries.html))

Once you know of the industries that interest you, your attention should then focus on the types of occupations that fit within these.

## Discipline-Specific Occupations

Science graduates undertake a broad range of occupations across their careers and it is common to experience transition between several occupations during a career. The list of job titles (opposite) is by no means finite, but may be used as a starting point when considering discipline-specific occupations. All, however, utilise at least some of the skills which are nurtured and developed during a course of study that has a science focus or component. Job titles will vary between organisations and some may require further education and training after an undergraduate Science degree.

(Source: Australian Graduate Survey, 2008 GCA; Monash University Faculty of Science [www.sci.monash.edu.au/undergrad/employ/occupations.html](http://www.sci.monash.edu.au/undergrad/employ/occupations.html))

Postgraduate students who undertake their research through a CRC often engage directly with the industry partners. Postgraduate students consequently tend to be regarded...as 'industry-ready'.

All Science Disciplines	Biological and Life Sciences	Biomedical Sciences	Behavioural Sciences	Earth and Environmental Sciences	Mathematical and Computational Sciences	Physical and Chemical Sciences
Air Force Officer	Anatomist	Audiologist	Behavioural Therapist	Agricultural Scientist	Actuary	Air Traffic Controller
Consultant	Animal Scientist	Audiometrist	Community Correctional Officer	Agronomist	Astronomer	Analytical Chemist
Federal Public Servant	Aquaculture Technician	Biomedical Technician	Community Health Officer	Climatologist	Astrophysicist	Atomic and Molecular Physicist
Intellectual Property Researcher	Biologist	Chiropractor	Counsellor	Coal Quality Geologist	Business Analyst	Cartographer
Intelligence Service Officer	Biotechnologist	Clinical Research Associate	Employment Case Manager	Earth Science Technical Officer	Business Development Officer	Condensed Matter Physicist
Laboratory Assistant	Clinical Regulatory Affairs Officer	Forensic Scientist	Health Education Officer	Environmental Geologist	Computer Systems Administrator	Clinical Chemist
Management Consultant	Crop Physiologist	Medical Laboratory Scientist	Human Resources Officer	Eco Tour Guide	Cosmologist	Development Chemist
Occupational Health and Safety Coordinator	Entomologist	Medical Practitioner	Orientation and Mobility Instructor	Environmental Health Officer	Data Management Technician	Environmental Chemist
Patent Examiner	Food Technologist	Nutrigenomics Administrator	Outreach Program Aide	Environmental Officer	Information Technology Consultant	Geochemist
Postdoctoral Fellow and Lecturer	Geneticist	Pathology Technical Officer	Rehabilitation Consultant	Environmental Planner	Land Economist	Health Physicist
Postdoctoral Research Assistant	Health Officer	Pharmaceutical Sales Representative	Residential Youth Worker	Field Hydrologist	Mathematician	Industrial Chemist
Research Analyst	Health Policy Advisor	Regulatory Affairs Associate	Personal Development Educator	Forest Technical Officer	Numerical Modeller	Instrument Fitter
Research Assistant	Health and Physical Education Teacher	Tissue Culture Technician		Geographic Information Systems Officer	Quality Assurance and Testing Officer	Instrumentation Tradesperson
Researcher	Health Surveyor	Toxicology Consultant		Geological Technician	Sales Analyst	Marine Surveyor
Research Officer	Horticultural Scientist			Geophysical Technician	Statistician	Materials Scientist
Research Scientist	Immunologist			Geoscientist	Systems Integration and Development Officer	Medical Diagnostic Radiographer
Research Technician	Marine Scientist			Geotechnical Officer	Technical Analyst	Medical Imaging Technologist
Scientific Officer	Microbiologist			Hydrographer		Metallurgical Technician
Science Communicator	Pharmaceutical Sales Representative			Hydrologist		Meteorologist
State Public Servant	Pharmacovigilance Specialist			Mapping Scientist		Nanotechnologist
Technician	Plant Scientist			Mine Geologist		Nuclear and Particle Physicist
Technical Writer	Quality Assurance Officer			Mineralogy Technologist		Nuclear Medicine Technologist
	Soil Scientist			Park Ranger		Optical Physicist
	Validation Laboratory Officer			Seismologist		Organic Chemist
	Zoologist			Spatial Systems Officer		Petroleum and Gas Plant Operator
				Underground Technologist		Physicist
				Water Treatment Consultant		Polymer Chemist
						Power Generation Plant Operator
						Precision Instrument Maker and Repairer
						Process Engineer
						Product Designer and Planner
						Production Chemist
						Radiation Therapist
						Research Chemist
						Sampling Technician
						Textile Technician
						Water Treatment Chemist
						Weather Observer

## Gaining Industry Experience

Employers allocate a significant amount of resources (time and money) to recruiting graduates, as it is essential to the success of their organisations. Human resource professionals state that the best way to assess whether a candidate is suitable for a position is to 'try before they buy'. This applies to the organisation as much as it does to the potential employee. Companies do this by offering various structured and unstructured work experience programs that students can undertake during their studies and semester breaks.

### Industry-Based Learning / Work Integrated Learning

Industry-based learning (IBL) is an optional part of a course of study in which paid work experience is undertaken during a degree, usually for a period between six months and one year. These are course-related employment positions with hands-on experience in the application of scientific and business principles.

Work integrated learning (WIL) programs such as cadetships, cooperative programs, internships and scholarships may be offered by companies in fields related to study. These programs usually target penultimate year students and vary in length from several weeks during a vacation period to a full year of employment. The benefits to Science students may include relevant work experience, participation in training and mentoring schemes, increased knowledge of suitable industries, an opportunity to network with employers of Science graduates, improved likelihood of gaining graduate employment and on occasion, credit towards a university course. As these opportunities are highly competitive, students also benefit from the experience of undergoing a stringent and rigorous selection process when they apply.

Both students and employers benefit from these programs, as students obtain relevant work experience and employers are able to preselect proactive and highly capable students who can offer significant contributions to the organisation. It is best to check with the faculty at your university about the availability of these programs.

### Work Experience and Vacation Work

To find work experience or vacation work, you should consult a range of resources, including print directories and online vacancy services such as GCA's *Graduate Opportunities*, and search under casual/vacation work. You can also target more specialised science websites such as the Melbourne Environmental Jobs Network and the APESMA Vacation Work Handbook.

It is important to regularly check the online job databases at your university careers service to ensure you don't miss any upcoming vacancies. Many work experience opportunities are offered through your careers service, department or faculty – keep an eye on their websites for openings. Finally, you may approach employers directly yourself; find contact details on company websites or through telephone directories.

### Volunteering

There are many less formal opportunities that can gain you relevant industry experience. The most common is volunteering. These opportunities are rarely advertised so the onus is on you to make best use of the resources available through your university careers service and your personal networks.

Volunteering is highly regarded by employers. Listed below are a number of websites to help you find volunteer work. Remember that all experience is useful, even if it is not specifically science-related.

GoVolunteer ([www.govolunteer.com.au](http://www.govolunteer.com.au)) is an initiative of Volunteering Australia and was Australia's first volunteer recruitment website.

SEEK Volunteer ([www.volunteer.com.au](http://www.volunteer.com.au)) offers positions in Australia and abroad.

Australian Volunteers International ([www.australianvolunteers.com](http://www.australianvolunteers.com)) provides opportunities for Australians to volunteer to live, work and learn in partnership with people of other cultures. Volunteers contribute to developing communities and bring a reciprocal benefit to Australia. 

Science graduates undertake a broad range of occupations across their careers and it is common to experience transition between several occupations during a career.

## Graduate Employment

A popular but highly competitive type of employment available to Science graduates are graduate recruitment programs. Many organisations with a graduate program look for graduates with generic employability skills rather than technical ones. It is recommended you research graduate programs offered in a diverse range of industries, as this will provide additional employment opportunities.

Many organisations advertise for graduates with a Science or related degree on a needs basis. These positions can be found advertised on your university's career website, in newspaper job adverts across Australia and also job search websites on the internet.

## Finding Employment

Your job search preparation should begin early, at least twelve months before completion of your course. In addition to concentrating on the demands of your coursework you should begin networking and taking an interest in the science sector and job market well before you begin to search in earnest.

It has been estimated that as many as two-thirds of the jobs suited to Science graduates are not advertised. Use the networks you have developed during your study, work experience or volunteer activities to 'spread the net' as widely as possible.

Your university careers service is a vital first point of contact – it has access to a network of employers, opportunities and job seeking information, can teach you to prepare written applications and be ready for interviews. At the same time, a quick and painless method of trawling job advertisements is to visit some of the larger internet job boards, where you can upload your résumé, create and receive job emails and read about interview techniques. A list of internet sites with information on science careers is available online through the GCA website ([www.graduatemcareers.com.au](http://www.graduatemcareers.com.au)).

Vacancies published in newspapers and academic journals such as *Campus Review* and *New Scientist*, as well as recruitment agencies, can be used to maximise your employment chances. 

### Tips when starting:

- Talk to someone who is currently in a position which interests you. This will help you learn more about the role and build up your network of contacts.
- Keep up-to-date with the latest scientific developments, both generally and in your particular area of interest.
- Be realistic about the jobs you look for and about the time it takes to find work. Remember that one position can be a stepping stone to another more appropriate one. Work and institutional experience count for much once you are out in the labour market.
- Research organisations in which you are interested before applying. Try to find a work environment in which you will be comfortable.
- Business skills such as budgeting, project management and presenting or promoting ideas are becoming increasingly important in many organisations and industries. Try to develop these skills where possible.
- Make sure your résumé is tailored to the job for which you are applying and in particular highlights your relevant experience and transferable skills.

The following career profiles of Science graduates who are successfully employed demonstrate a diverse range of education and employment backgrounds along with valuable advice to new graduates when transitioning from study to employment.



## Graduate Profiles



### Chris Gerbing

*Bachelor of Arts / Bachelor of Science, Monash University (Visual Culture, Atmospheric Science, English, Mathematics); Bachelor of Science (Honours), Monash University (Geography and Environmental Science – Climatology)*

*Current Employment: Climate Change Officer, Farm Services Victoria, Department of Primary Industries*

*"Whilst my Science degree gave me pivotal knowledge in attaining this role, it also equipped me with skills in problem solving and logical thinking."*

#### **Why did you choose to study a Science degree?**

I had always been interested in science, particularly mathematics. When I started at uni I wanted to keep my options open to explore a range of subjects, hence combining a Science degree with an Arts degree.

#### **What science/technical skills have you developed or enhanced by studying a Science degree?**

I suppose the biggest thing about studying a Science degree was learning how to think logically and solve problems. These skills are crucial everyday. Second

to that is the actual knowledge you acquire through studying science theories. For Atmospheric Science I learned technical skills about atmospheric dynamics, which are now an asset in working in my field.

#### **What employability/transferable skills have you developed or enhanced by studying a Science degree?**

I think that exploring different kinds of science and taking opportunities to look at philosophies which underpin scientific thinking can be a valuable way to add additional employability whilst doing a Science degree. I personally became very interested in communication of sciences, so look for opportunities with science curriculum and outside, to explore these interests.

#### **What advice would you give to a student considering studying a Science degree?**

When I started my Science degree I was going to concentrate on studying Physics and Astronomy. But upon commencing my degree I realised there are many interesting opportunities within the science field. My advice is pretty simple: don't lock yourself into anything. The world of science is (potentially) infinite, and there will be something out there which interests you.

#### **How did you go about finding employment after completing your studies?**

There are a lot of graduate programs on offer both within government and industry. I began by becoming familiar with these programs and looking into what they had to offer. There are also many opportunities within the university year to hear from graduate coordinators, attend information sessions or even careers days. Getting information first hand can often be the way to go.

#### **Describe what you do in your current position.**

I am currently a climate change officer focusing on communicating climate change science both within the Department of Primary Industries (DPI) and to agricultural stakeholders across the state. For the most part I have been working on a program to increase knowledge of climate science (weather, climate, climate change, emissions) within DPI staff, so that as many staff as possible who deal with farmers, agribusiness and within government are well versed on climate science and associated issues. I have also been working on a program delivering industry development support to the growing carbon offsets industry, or those companies who plant trees within Victoria to provide carbon offsets on the voluntary carbon market. Working with these companies ensures that carbon offsetting also considers the Victorian natural resource management goals.

#### **What are the key skills required to carry out your current role?**

Being from the city, I have spent a fair while (and

...exploring different kinds of science and...philosophies which underpin scientific thinking can be a valuable way to add additional employability whilst doing a Science degree.

*Chris Gerbing, Bachelor of Arts / Bachelor of Science, Monash University*

## Graduate Profiles

continue to do so) learning about the clients who I am working for. These are predominantly people working in agricultural industries: farmers. A key skill required in my role is the ability to communicate clearly and understand the audience. Whilst my Science degree gave me pivotal knowledge in attaining this role, it also equipped me with skills in problem solving and logical thinking. The most important skill to have when trying to talk to people about science is how to make it make sense to the layman. Being able to make science make sense on the ground (for example with farmers) is where the real traction begins and benefits can occur.

### ***Describe the employment prospects in the industry you currently work in.***

Within climate change industry, if you can call it that, there are many opportunities. Also within government there are many opportunities for new graduates. In the DPI and Department of Sustainability and Environment (DSE) there is a graduate intake of Science graduates every year which presents a great opportunity across a diverse range of fields. It is also important to think about how you can apply what you have been studying in your Science degree to new fields and contexts. I certainly didn't think I would apply my climatology studies in the agriculture field, but I did and it has opened up many other opportunities and connections.

### ***What industries do graduates with your background generally end up in?***

Graduates of Atmospheric Science often end up doing research and or working with the Bureau of Meteorology or CSIRO. But when you scratch the surface, studies of Earth and atmosphere are very interesting and impact upon many natural processes and can therefore be applied to many fields. In a time when climate change is a big issue and more and more organisations and industries want to know about how it impacts them, understandings of fundamental atmospheric processes and their impacts will get you a long way.

### ***What advice would you give to a student looking to find employment after completing a Science degree?***

My advice would be to take a broad approach and then over time knuckle down, so that in your final year of study you start hitting the right marks. Start looking around before actually completing your degree so you can gather an idea of the kinds of things which will add value to your Science degree. Things like volunteering or industry work can give you a good advantage when it comes to interview time, as it will help you see if that's the direction you want to head, and gives you some good ammunition for answering key selection criteria.



## Kate Hogarth

*Bachelor of Science / Bachelor of Commerce, The University of Queensland (Geographical Science; Accounting, Applied Mathematics); Masters in Environmental Management, The University of Queensland (Sustainable Development)*

*Current Employment: Environmental Graduate, Property, Development and Environment ACM Qld and NT, Boral Resources (Qld) Pty Limited*

*"Finding a company with a well defined and established graduate program including a mentoring system, as is provided at Boral, is of great advantage to ensure positive growth and career development."*

### ***Why did you choose to study a Science degree?***

During my school years, I had always been passionate about Environmental Studies, particularly Geography. Furthermore, I wanted to work in an area that was practical and hands-on, allowing me to work outdoors and contribute something back to society.

### ***What science/technical skills have you developed or enhanced by studying a Science degree?***

Studying Science allows you to gain a firm theoretical knowledge of your study area whilst also developing research techniques through field and practical-based courses. Business skills such as report writing and communication are also enhanced through assessment items completed during the degree.

### ***What employability/transferable skills have you developed or enhanced by studying a Science degree?***

The theoretical and practical skills gained in my undergraduate degree provided the foundation for

## Graduate Profiles

gaining employment in my area of interest. The wide range of courses I studied highlighted that I had a broad scientific knowledge as well as the capability to continually learn new things. This has been advantageous in my current role which now builds on the skills I developed whilst at university.

### ***What advice would you give to a student considering studying a Science degree?***

The advantage of a Science degree is that there are many different majors to choose from so it is a good idea to take a few electives in different areas to find what you are really passionate about and enjoy. I would also advise taking a range of course types such as research-based, theory-based and fieldwork-orientated courses to ensure you gain maximum exposure to different areas of science for application to the real world.

### ***How did you go about finding employment after completing your studies?***

I applied for work experience positions during the Christmas university break each year. I found out about positions through attending careers fairs and searching company websites to discover undergraduate vacation employment opportunities. Having work experience was an advantage when applying for my present job, which I heard about through the university careers fair and word of mouth.

### ***Describe what you do in your current position.***

My role involves supporting all of the ACM QLD and NT product lines; Quarries, Concrete, Asphalt and Transport, in a broad range of issues including rehabilitation, environmental management, sustainability and environmental compliance as well as community liaison and community projects. This work extends from operations in South East Queensland to country operations as far as the Northern Territory.

### ***What are the key skills required to carry out your current role?***

An understanding of environmental legislation is a key skill for roles that are heavily focused on ensuring

continued compliance and sustainability. Fieldwork experience is also a necessary skill as it allows for the full investigation of environmental issues and solutions. As with most roles, written and verbal skills are important, as is a sound understanding of mathematics.

### ***Describe the employment prospects in the industry you currently work in.***

The construction materials industry requires environmental professionals to ensure ongoing compliance and continual progress toward long-term sustainability. As such, there are always opportunities for environmental scientists and managers with good communication, practical and business skills to work in this industry.

### ***What industries do graduates with your background generally end up in?***

Science students with an environmental background can work in a wide range of industries. This may be in the private sector, as a consultant or working for a government agency. Gaining experience in any one of these industries provides the foundation for movement into a more specialised role in the future.

### ***What advice would you give to a student looking to find employment after completing a Science degree?***

It is important to speak to as many professionals as possible who work in your area of interest. Attending university functions for young professionals and careers fairs allows you to meet a range of people who can provide greater information and insight into different employment opportunities. Finding a company with a well defined and established graduate program including a mentoring system, as is provided at Boral, is of great advantage to ensure positive growth and career development.

An understanding of environmental legislation is a key skill for roles that are heavily focused on ensuring continued compliance and sustainability.

*Kate Hogarth, Bachelor of Science / Bachelor of Commerce, The University of Queensland*

# Graduate Profiles

## Danae Reed

*Bachelor of Agricultural Science, University of New England (Plants and Animals); Graduate Certificate in Rural Systems Management, University of Queensland; Masters in Agribusiness, The University of Melbourne*  
*Recent Employment: Whole Farm Planning Specialist, Department of Primary Industries (DPI)*

*Note: Danae ceased her employment with DPI in July 2009 to take up an opportunity as Regional Education Officer with the Waste Reduction Group (South West Regional Waste Management Group) in regional Victoria.*

*"A key concept of Agricultural Science is the ability to understand how systems fit together. This breadth of knowledge makes you employable in many different fields, and...in the city, country, nationwide and overseas."*

### **Why did you choose to study a Science degree?**

I choose to study Agricultural Science for two main reasons. Firstly, I enjoy working outdoors with a variety of people and secondly because the degree was a great basis for further development in many different fields such as business, economics, animal science, plant sciences and management.

### **What science/technical skills have you developed or enhanced by studying a Science degree?**

The degree offered a great basis of skills from basic chemistry, maths and statistics to in-depth biology and landscape management. It has given me a greater understanding of 'how things work' and improved my analytical, decision making and conceptual skills.

### **What employability/transferable skills have you developed or enhanced by studying a Science degree?**

Agricultural Science has allowed me to branch out in many different areas. Strategic management, rural community capacity building, research, extension, agronomy and animal science positions are all available to me. A key concept of Agricultural Science is the ability to understand how systems (environment, community, agricultural and business) fit together. This breadth of knowledge makes you employable in many different fields, and with job opportunities in the city, country, nationwide and overseas.

### **What advice would you give to a student considering studying a Science degree?**

Science gives you so many options. You learn all the key skills from an Arts degree such as research, essay writing and presentation skills but you also gain key technical skills in popular and important areas.

Studying Science shows that you are a person who has a good handling on conceptual thinking and has a strategic approach to decision making. Science degrees are highly regarded and give you a breadth of knowledge that other degrees cannot offer.

### **How did you go about finding employment after completing your studies?**

Agricultural newspapers, specific agricultural websites and my university career officer were all essential in finding employment. I also encourage students to begin building their own networks through part-time employment or work experience in their chosen industry as this is very important in gaining experience and future employment opportunities.

### **Describe what you did in your position with the DPI.**

My role was to assist rural landholders to improve the profitability of their agricultural business by investing in the environmental sustainability of their property. It included strategic decision making to optimise the health of the landscape whilst improving business performance. It required me to use a number of skills I learnt at university such as an understanding of agricultural productions systems and their limitations and



## Graduate Profiles

how this affects the natural landscape. I assisted farmers to set up a Whole Farm Plan for the future considering their production, environmental and lifestyle goals.

### **What were the key skills required to carry out this role?**

My role required skills in many areas such as plant and animal production systems, adult education, evaluation, strategic decision making, presentation, research and writing skills, networking, negotiation and sometimes counselling.

### **Describe the employment prospects in the industry.**

For every one job on farm there are four in the greater industry. This includes production, retailing, marketing and all areas of the value chain. We still have so much to learn about producing good food and fibre products sustainably and thus agriculture and related industries such as aquaculture and forestry are growth areas for the future. Job prospects for graduates are extremely positive.

### **What industries do graduates with your background generally end up in?**

All areas of food and fibre production from animals and plants as well as agribusiness and government-related services have positions for Agricultural graduates. There are also new and emerging industries continuing to demand quality Science graduates.

### **What advice would you give to a student looking to find employment after completing a Science degree?**

Firstly choose a job that offers further training. It was only after I left university and completed a series of workshop training with my employer that I was able to truly capitalise on my knowledge from university.

Secondly, the transition from university to the full-time workforce can be a rough ride. Make sure you choose a job that is in an area you are passionate about and has potential to grow your skills; this will make the transition a lot easier.

The technical skills and knowledge I gained through a Bachelor of Science also helped me gain the respect of my colleagues when I entered the workforce.

*Travis, Bachelor of Science, University of Western Australia*

## Travis

*Bachelor of Science, University of Western Australia (Human Movement; Exercise & Health Science, Human Biology); Graduate Diploma of Physical and Health Education, University of Western Australia (Physical & Health Education, Science Education)*

*Current Employment: Health and Safety Officer, Health, Safety, Environment and Emergency Management, Rio Tinto Iron Ore*

*“OHS is all about interacting with site personnel, supervisors and leaders to continuously improve health and safety attitudes, understandings, behaviours and values which are all drivers of positive performance.”*

### **Why did you choose to study a Science degree?**

I was always interested in how the human body functions, how it responds to different stresses, stimuli and how it performs at its peak. I was also an enthusiastic sportsman as well as being interested in teaching and coaching so Health and Exercise Science at UWA was always my first choice.

### **What science/technical skills have you developed or enhanced by studying a Science degree?**

I have learnt significant technical knowledge about human anatomy and biology, biomechanics, motor skill acquisition, physiology, injury rehabilitation, ergonomics, anthropology, psychology as well as drivers of human behaviour/response as a result of completing my Science degree at UWA.

### **What employability/transferable skills have you developed or enhanced by studying a Science degree?**

Being a scientist, you are often working as a part of a larger group. Through university projects, studies and research you develop the important interpersonal skills required to succeed in your chosen field. The technical skills and knowledge I gained through a Bachelor of Science also helped me gain the respect of my colleagues when I entered the workforce.

### **What advice would you give to a student considering studying a Science degree?**

Students often enter university with an idea of what they enjoy and what occupation they may want to pursue one day. From my experience, when my mates and I started coursework we discovered a whole range of research, study, knowledge and opportunities available that we didn't know existed, and now we have all branched out into various fields. The range of occupations my university friends have moved into

## Graduate Profiles

include health promotion, exercise physiologists, sleep pathologists, teachers, occupational therapists and even a fitness and motor skill expert for the West Coast Eagles. My advice would be if you are not 100 per cent sure on what you want to be, explore different units, keep your options open and you will discover something you have a passion for in the world of science.

### ***How did you go about finding employment after completing your studies?***

I applied for the graduate program with Rio Tinto at the start of my final year of study in 2006. Fortunately I was successful and was offered a graduate position at Hismelt Operations, part of Rio Tinto Iron Ore, and started two weeks after I finished university.

You can also gain experience throughout your studies through Rio Tinto's vacation program which recruits over 200 students each year in Australia, over the summer break. This is a great way to gain some practical hands-on experience, see if the company and industry is right for you and potentially be fast-tracked into the graduate program at the end of your studies.

### ***Describe what you do in your current position.***

I am currently Health and Safety Officer for Rio Tinto Iron Ore at its Cape Lambert Port Facility, about 40 minutes north of Karratha, WA. My role is to facilitate positive health and safety behaviours to drive performance towards our business goal of "zero harm and zero injuries". Occupational health and safety (OHS) issues that I tend to deal with include but are not limited to Confined Space Work, Vehicles and Driving, Hazardous Substances, Working at Heights, Contractor Management, Injury and Incident Reporting, as well as Incident Investigation.

### ***What are the key skills required to carry out your current role?***

The most important skill required above all for my position would be good interpersonal skills. OHS is all about interacting with site personnel, supervisors and leaders to continuously improve health and safety attitudes, understandings, behaviours and values which are all drivers of positive performance. Some other skills/qualities that are central to my role are decision making, the ability to be firm but fair, time and priority management and flexibility. My role also requires specific skills and knowledge related to areas such as hazard identification, assessment and control of occupational health and safety issues.

### ***Describe the employment prospects in the industry you currently work in.***

Employment prospects are strong in the OHS field because businesses, society and governments are becoming more focused on safety every year. The higher health and safety expectations of all stakeholders involved ensure more personnel are required in these roles.

Rio Tinto recruits a large number of graduates each year from Science backgrounds including Geology, Hydrogeology, Surveying, Environment, Chemistry, Materials Science, Geophysics and of course Health Sciences (Health and Safety). The opportunities within such a large global company are endless!

### ***What industries do graduates with your background generally end up in?***

Health promotion is also a popular field, working for hospitals as well as various other private and public institutions. Some other fields my fellow graduates work in are motor control, exercise physiology, rehabilitation, education, fitness, sleep pathology, sport psychology and of course health and safety.

### ***What advice would you give to a student looking to find employment after completing a Science degree?***

Working in the science field, you have the opportunity to have a significant impact on people's lives, the environment and human understanding. I think it is important to follow your passion and try to make a positive difference. I sought employment in the health and safety field with Rio Tinto because I believed that I could assist individuals to live a better lifestyle, not only for themselves but also their families. My values were also consistent with those of Rio Tinto, which sets out to achieve the same goal on a more global scale. Do something you love!

## Graduate Profiles



### Dr Anton Tadich

*Bachelor of Science (Honours), La Trobe University (Physics, Applied Mathematics); PhD in Angle Resolved Photoelectron Spectroscopy, La Trobe University*

*Current Employment: Scientific Support Officer, Soft X-ray Beamline, Australian Synchrotron*

*"Our team must work under tight time constraints to maintain a world-class research instrument ...thus the ability to work under some pressure is a must, whilst still maintaining a helpful and mindful attitude to those who work around us."*

#### **Why did you choose to study a Science degree?**

I was always interested in the world around me. I was keen to become a researcher, discovering new things and making the world a better place. However, I was not sure what discipline I wanted to study; I was good at Maths and Science at school, and enjoyed solving problems. A generic Bachelor of Science was my first choice as I could generalise in my first year, discovering what I liked, then specialise in subsequent years.

Science should be looked at as a 'skill set' degree...Do not look for a job which you think will use all of the knowledge you have learned, but rather the generic skills you have obtained.

*Dr Anton Tadich, Bachelor of Science (Hons), PhD in Angle Resolved Photoelectron Spectroscopy, La Trobe University*

#### **What science/technical skills have you developed or enhanced by studying a Science degree?**

Academic research skills (literature surveys, data analysis), analytical thinking, problem solving, project management, computer programming, hands-on training in mechanical and electrical engineering.

#### **What employability/transferable skills have you developed or enhanced by studying a Science degree?**

Analytical thinking, problem solving, project management; these skills are highly regarded by any industry.

#### **What advice would you give to a student considering studying a Science degree?**

I would highly advise that you are reasonably competent at, and enjoy, Science-related subjects; each year the workload and difficulty increases in a Science degree. Also, be open minded in the sense that you may not use the degree to become a 'scientist' at the end of the day, but that you may end up working in industry for instance.

#### **How did you go about finding employment after completing your studies?**

As I was finishing my PhD in Synchrotron Science, I was told about a position opening at the new Australian Synchrotron; the position required knowledge and skills which were an exact match to what I had been learning in my studies. I applied for the job, and got it! I was lucky in the sense that the timing was right; had I finished my PhD earlier, I would have taken a different path.

#### **Describe what you do in your current position.**

I assist in the maintenance of a scientific research instrument and photon delivery system (beamline) at the Australian Synchrotron. My key duties include procuring, commissioning, upgrading, maintaining and characterising the scientific hardware. I also train the scientists who come to use the instrument, and write manuals and documentation. I also assist in the in-house research program with my co-staff.

I also have an adjunct academic position at La Trobe University, where I will be assisting in a Masters of Nanotechnology course by delivering guest lectures and practicals in Synchrotron Science.

#### **What are the key skills required to carry out your current role?**

My job requires very specialised knowledge of synchrotron-related instrumentation and related scientific techniques. More generic skills that are required are the ability to work in a team, good communication (written and oral), analytical and problem solving skills, and interpersonal skills. Our team must work under

## Sources

tight time constraints to maintain a world-class research instrument for many groups of visiting scientists; thus the ability to work under some pressure is a must, whilst still maintaining a helpful and mindful attitude to those who work around us.

### ***Describe the employment prospects in the industry you currently work in.***

In synchrotron science, there are jobs that come up around the world, but it is not a 'large' industry. The employment prospects are limited if you only have a bachelor degree; a PhD is almost a must to become a scientist in a synchrotron facility.

### ***What industries do graduates with your background generally end up in?***

This can vary. Most commonly, into the academic sector i.e. firstly a postdoctoral appointment overseas, then perhaps you might return to take up further employment in either a university or government-funded research organisation (e.g. CSIRO, ANTSO).

### ***What advice would you give to a student looking to find employment after completing a Science degree?***

Be open-minded. If you study Physiotherapy, you will most likely become a physiotherapist. However, Science should be looked at as a 'skill set' degree in some sense. Do not look for a job which you think will use all of the knowledge you have learned, but rather the generic skills you have obtained: analytical thinking, problem solving and project management.

If, however, you are keen to become the next Stephen Hawking, by any means go for your dreams!

1. [en.wikipedia.org/wiki/Observation](http://en.wikipedia.org/wiki/Observation)
2. [www.cqu.edu.au](http://www.cqu.edu.au)
3. [www.goingtouni.gov.au](http://www.goingtouni.gov.au)
4. [www.graduatecareers.com.au](http://www.graduatecareers.com.au)
5. [www.graduateopportunities.com](http://www.graduateopportunities.com)
6. [www.gradcareers.com.au](http://www.gradcareers.com.au)
7. [www.jobguide.thegoodguides.com.au](http://www.jobguide.thegoodguides.com.au)
8. [www.jobsearch.gov.au](http://www.jobsearch.gov.au)
9. [www.myfuture.edu.au](http://www.myfuture.edu.au)
10. [www.sci.monash.edu.au](http://www.sci.monash.edu.au)
11. [www.uq.edu.au](http://www.uq.edu.au)



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This booklet is one of a series intended for use by Careers Advisory Services in Higher Education in Australia. The booklets will also be of interest to tertiary and secondary students, and others considering further study.

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**Author: Craig Blake**, *Careers Education Consultant, Monash University Employment and Career Development*

**Editor: Jesse Gerner**, *GCA*

Graduate Careers Australia  
PO Box 12103  
A'Beckett Street VIC 8006  
*Telephone:* 03 9605 3700  
*Facsimile:* 03 9670 5752

*Email:* **info@graduatecareers.com.au**

*Web:* **www.graduatecareers.com.au**

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