So your child wants to be a Scientist!

Parent Package: An information booklet for parents of Indigenous High School students
What do parents need to do?
As a parent wanting to support and encourage your child's dreams and aspirations, you need to know about the High School subjects that will allow your child to get into University. You also need to know about University Life, including course requirements and support structures at the University.

My child wants to be a scientist!
Great! We need more Indigenous Scientists to help our communities into the future by using Indigenous and western knowledge.

School to University
The transition from school to University is a large step in any student's life.

Benefits for my child
A UWA Science Degree is a world-class degree and will enable your child to gain employment around the world, as well as in their own Indigenous communities.

Studying at UWA
Studying at University is exciting and very different from High School. University students have opportunities to learn many new things both in Australia and overseas.
Dispelling the science myth
Science is too hard! No! Don’t assume Science is too hard to get into. If your child is interested in Science and wants to have a career in Science we will help you. We will assist your child in achieving their dreams and we will help you parents understand University life so you can best support your child. | p 10

Financial assistance
There are a number of scholarships available for Indigenous students to study at UWA. | p 11

Accommodation
There is a large range of accommodation at UWA to suit the needs of your child. | p 12

Science and engineering graduates
UWA Indigenous Science and Engineering Graduates share their stories. | p 14

Science education opportunities
Your child can explore their interest in Science by applying to attend different camps and programs. | p 17
How will studying in a science degree benefit my child?

What sort of work will they get?

Is a professional job guaranteed?

Will they have to stay in Perth to work?

Studying science provides students with the right skills for ever-changing work environments. Students who study in science are sought after even by employers outside of the science world. Learning science increases your child’s opportunity in the workforce.

Benefits to your child

• Studying Science courses can lead to great jobs
• The jobs your child could get as a scientist or engineer can take them around the world
• As a scientist and engineer your child can contribute to the future of their community
• Your child could become a top scientist or researcher who could benefit society as a whole.
As a parent what do I need to do?

Provide support and encouragement to your child throughout their high school years.

To arrive at University your child must first attain the WA Certificate of Education (WACE). There are bridging courses that your child can access if they do not attain WACE.

Remember that your child’s education will become a shorter journey if they gain entry through TER.
My child wants to be a scientist!

Sciences are ‘skills for life’. Science is the study of the physical and natural world.
University Science includes study in areas like the earth, biology, human behaviours, mathematics, computers and the physical sciences.

Indigenous Australian people also use scientific knowledge. Indigenous science is holistic, which means that the people, the land and the animals are all parts of a whole. Indigenous practices are based on thousands of years of understanding environmental science in Australia.

Western Science and Indigenous Science can work together to bring about new understandings. University students mainly study Western science, but Indigenous students can bring Indigenous scientific knowledge into their studies also.

Indigenous scientific methods included:

Aerodynamics – boomerang – is basically two wings joined together; flat at the bottom and rounded on the top that allows the tool to fly.

Astronomy – over thousands of years Indigenous Australians’ seasonal calendar was based on the relationship between the sky and the earth and the position of the constellations.

Genetics – a clan’s kinship or skin pattern is divided into 4, 8, 16 and sometimes into 32 groups that gave rise to precise geometric patterns so that people knew who they were related to and who they could marry, therefore avoiding genetic malfunctions.

Geology – manufacturing sites – tools like spearheads were made from materials extracted from quarries, like flint and quartz.

Meteorology – seasons and land management – required an ability to link events in the natural world to a cycle that permitted the prediction of seasonal events. The reactions of the animals and the plants was observed to gauge what was happening in the environment.

Oceanography – fish traps – meant that those working in this industry were skilled in engineering, river hydrology and fish biology.

Science will set us up for lots of jobs!
School to University

Students complete their secondary schooling in one of three stages typically:

- **Stage 1** – Gives you entry into TAFE or industry
- **Stage 2** – Gives you entry into WA universities other than UWA
- **Stage 3** – Gives you entry into UWA science degrees.

**Understanding the Journey**

**Lower Secondary**
From Years 7 to 10 students begin to see how scientific processes are formed. It’s critical then, that as they go through high school, the right subjects for a science degree are chosen.

**Your child must choose the right subjects in Year 10.**

**Upper Secondary**
In Years 11 and 12 your child develops a clear understanding of Earth and Beyond, Life and Living, and Natural and Processed materials. Students who want to study in a particular field must develop and refine their science knowledge and skills for that area.

By Year 12 they must be at a Stage 3 level. However, if your child aspires to study science later in high school, make sure you talk with a counsellor or teacher to ensure they do realise their aspirations.

**Maths**
Your child must study maths. There are many maths courses so your child must plot an appropriate pathway. Investigate what prerequisites are required for your child's chosen area of study at University.
Pathways to UWA for Indigenous students

Direct Entry: If your child achieves the TER (Tertiary Entrance Rank) score required for their science course, they will get a direct entry into university.

Provisional Entry: If the TER score is lower than the entry score required, your child may still gain entry to UWA. You should seek advice on this from the School of Indigenous Studies.

The Aboriginal Orientation Course is a one-year preparatory course at UWA for Aboriginal and Torres Strait Islander students. The course is designed to improve a student’s academic ability in preparation for degree courses.

1st Year Science at UWA

Students enrol in one of five foundation packages:

• Physical Sciences
• Earth Sciences
• Biological Sciences
• Behavioural Sciences
• Mathematical/Computing Science

and choose their major/s once they have completed the equivalent of one full-time year of study.

If you are unsure of UWA entry requirements contact the School of Indigenous Studies.

“I had always found science interesting throughout school and know that I wanted to study a science related degree at university. There’s so much variety in a science degree so it’s perfect if your not sure what you want to do. I was able to use my science foundation year to bridge into an engineering degree after one year.” — Ezra Jacobs-Smith.
A whole new way of life.

Students enjoy their time at Uni and find it very different to the school environment. More than 19,000 students and 3,000 staff are on campus with a host of activities and services. Students make new friends, expand their knowledges and they may even take the opportunity to do part of their studies in another country.
Recreation
There are many student-run clubs and societies that students get involved with for a change from the demands of study. For example, Indigenous students compete in the National Indigenous Tertiary Education Student Games which are held in different universities around Australia each year.

Student support
A Student Services team at the School of Indigenous Studies (SIS) provides advice and support to students through their studies. The School also offers a variety of facilities, services and activities such as computers, a common room and library. Social, cultural and education activities are ongoing throughout the year and are extended to all Indigenous students at the University and into the wider community.

UWA Open Day
The UWA Open Day held annually mid-year is a great opportunity for future students and families to see inside a world-class university and the exciting courses offered. On display are various science courses that include chemistry magic; interactive biomedical imagery; and everything you wanted to know about our planet.
‘Science is too hard... I will never get into a Science course because I am not smart enough... If I study science I will not get a job later... Science is not useful to my community.’ These are misconceptions that surround science. We can assist you if your child wants to study science.

Workshop for Parents and Guardians

The School of Indigenous Studies can provide course and study information workshops to parents and guardians. If you are interested in attending a workshop, please register your interest by contacting the School of Indigenous Studies on 1800 819 292 or 6488 3428.

Fun links

• www.naturespeak.com.au
• www.science.uwa.edu.au/community/calendar
• www.news.uwa.edu.au/node/28
• www.scienceexperience.com.au
• www.scitech.org.au
• livingknowledge.anu.edu.au/index.htm

“...not only are the job prospects for engineering excellent and well paid, they also give you the opportunity to travel and work overseas but also to contribute back to the community in a positive way.” – Lance D’Antoine, Electrical Engineer.
Scholarships

There are a number of scholarships available to Indigenous students in UWA courses. The value of the scholarship varies. All 1st year students who are eligible for ABSTUDY/Centrelink can apply for:

- **SWANS** – www.scholarships.uwa.edu.au/home/undergrad/swans_scholarship
- **Commonwealth Learning Scholarships** which includes three different scholarships (a relocation and accommodation scholarship for country students; and a general Education assistance scholarship) – www.scholarships.uwa.edu.au/home/undergrad/cmmnwlth_lrn_schols
- **Diversity and Merit Awards** – admissions.uwa.edu.au/undergrad/scholarships/dm

Students in all years of their degrees can apply for:

- **Pallottine Scholarships** which covers HECS (tax for fees) – www.pallottine.org.au/index_2.htm
- **Eveline Rosina Henty Scholarship** – www.sis.uwa.edu.au
- **Gloria Brennan Scholarship** – www.sis.uwa.edu.au
- **Rio Tinto Iron Ore Scholarship** – www.riotintoironore.com

For specific scholarships related to your course keep checking the School of Indigenous Studies website – www.sis.uwa.edu.au

Cadetships

The Department of Education, Employment and Workplace Relations (DEEWR) offers a Cadetship program that provides students with an alternative income source to ABSTUDY while studying at University. Cadetships are undertaken with organisations and departments such as Woodside or the Department of Foreign Affairs and Trade, and are paid at a higher rate than ABSTUDY during the academic year; and during the summer vacation the student gets to undertake work experience with their sponsor organisation.

Your child can apply for a cadetship for 1st year university even while they are still completing Year 12.

Visit www.nicp.deewr.gov.au to register and also check out potential employers.
Residential colleges

There are five residential colleges at UWA within walking distance of the campus:

- St Catherine’s College (women only)
  www.stcatherines.uwa.edu.au
- Currie Hall (both men and women)
  www.currie.uwa.edu.au
- Trinity College (both men and women)
- St Thomas More College (both men and women)
  www.stmc.uwa.edu.au/home
- St George’s College (both men and women)
  www.stgeorgescollege.com.au

Facilities

What will it cost? If you are eligible for ABSTUDY the total bill will be covered. What will happen then is that you will receive a very reduced living allowance from ABSTUDY which is approximately $40 per fortnight, however most of your expenses are covered and you will not have to worry about cooking, shopping for food and travelling to uni each day.

Applying: Applications are available from SIS or from the websites above or in TISC handbooks. You should complete your application as soon as possible – preferably at the same time as TISC applications (30 September each year). Any queries, contact SIS: 1800 819 292 or 08 6488 3428

Alternative Accommodation: Your child could rent a flat or share a house with other students. Staff at SIS can assist but this is quite an expensive option as a bond can cost eight weeks rent and the cheapest rent in the Nedlands area is about $150 pw for a one bedroom, unfurnished flat. There are cheaper rents available further out from the uni, but you will then have travel expenses.
I considered studying a Science degree at UWA because it is one of Australia’s premier teaching and research universities. It offers a wider range of disciplines and courses in the Science undergraduate program.

I chose to study Earth Science because of the unique land and combination of the traditional fields of physical geography, climatology, environmental science and soil science. I have always enjoyed science and have had a keen interest in the environment.

It is important that the university encourages Indigenous students by having a centre such as the School of Indigenous Studies where students can meet, study and feel at home.

Having completed my studies at UWA, I have been accepted into the graduate program in the environment department of WA’s leading mining company, overseeing progressive rehabilitation of current operations.

Until I started at UWA I had no idea what an engineer does. I chose the Science/Engineering course because I’ve always been good at maths and science and I like knowing how things work.

Mechanical Engineering is a broad major and I have really enjoyed the variety. You can study acoustics and noise control, thermodynamics (which covers everything from airconditioning to engines), manufacturing, sustainable development and much more.

My favourite subjects are dynamics and vibration, and control systems. I also like the hands-on components and practical nature of the degree.

A Physics degree complements Mechanical Engineering very well and gives you a technical advantage. You learn about state of the art technology, electronics, magnetism, nanotechnology and the quantum world and you get to play with liquid nitrogen and supermagnets!
Hi my name is Adrianne Houghton and I was born and raised in Port Hedland. I attended Hedland Senior High School however I withdrew after Year 10. This decision limited my future employment opportunities and as a result I applied to the School of Indigenous Studies to enrol in the Orientation course. I successfully completed the Orientation course and was determined to enrol in a Science degree at UWA. This decision was greatly influenced by my Chemistry tutor who made Science seem like fun! During my time at University I had many difficulties to overcome including home sickness and financial hardship to name a few.

My job is within the Environmental section of the Laboratory where we analyse samples to ensure that they comply with the Environmental standards set by the Environmental Protection Authority. My work is relevant to the Indigenous people of the area and also to the wider community as we ensure that the environment is being preserved for future generations.

Making the decision to do Medicine was a big step for me.

I came from a school where lots of my mates did not even think of going on to do tertiary study so I was a little alone in going to UWA. That was one minor obstacle in my path.

I also had another big one in that I really bombed out of year 12. Luckily for me though, the mob at Centre for Aboriginal Programmes helped me out heaps and I did the Aboriginal Orientation course, which is like repeating year 12 and doing first semester of a uni course.

I still didn’t have enough academic background to get into Med so I did a year of Science and then got in. That’s the great thing about uni, that you just have to get your foot in the door and then you can do anything you want to do.

It’s been great fun meeting so many different people on my placements all over Perth and WA. I graduated in 2002 and have worked as a doctor in Fremantle, Cairns, Alice Springs and Darwin.

Hi my name is Michelle Wright-Baker. I have moved around a lot in my lifetime – born in Darwin, lived in Katherine, Esperance and Port Hedland.

I attended high school in Perth and when I was in Year 11 did the Health Science Careers Camp at UWA as I thought I might do Medicine.

I successfully completed my Bachelor of Science, majoring in Maths and Human Biology. I had the choice of Honours in Human Biology or to study for a Graduate Diploma of Education to teach Science and Maths. I decided on a Graduate Diploma of Education.

During that year I applied and was awarded a Final Year Teaching scholarship from the Department of Education and Training. In my graduate year, I taught Maths (Years 10, 11 and 12) at Pinjarra High School. Then I was transferred to Derby District High School where I have been teaching Maths (Years 8, 9, 10, 11 and 12) for the past 2 years. In 2009, I am teaching maths at a Perth high school.
Hi my name is Lance D’Antoine and I graduated from the University of Western Australia in 2003 with a Bachelor of Electrical Engineering.

I am originally from Darwin in the NT, but moved down to Perth to pursue my studies and gain independence by leaving home.

My thesis at university was on renewable energy and looked at wind turbines generating power for remote locations. My current work involves the water industry and making water safe for people and the environment.

Now, I am finished working overseas, I hope to combine the two and get involved with projects that involve providing electricity and safe drinking water for Indigenous people in remote areas all around Australia. To anybody who chooses to study engineering at UWA I wish you the best of luck. It’s hard work but you couldn’t be surrounded by better people at Shenton House and UWA to help you across the finish line.

I was always interested in sport so when it came to deciding what studies to pursue, Exercise and Health Science was the best choice. However after the completion of my degree I knew that I wanted to make a difference in young people’s lives through sports and teaching, I believe, is the best medium to do so.

I have completed a Diploma in Education with a major in Physical Education and a minor in Information Communication Technology. The Diploma of Education course is providing me with the tools to make a difference in my students’ lives and in my life as well.

Professionalism, excellence, opportunity and fun are some of the things that a Diploma of Education can provide you with, and I recommend this degree for any person willing to see change in not only young people’s lives but also their own lives.

My name is Belle and my family descends from the Nyungar-Bibulmun people from the South West of Western Australia. I grew up in the Yallingup-Dunsborough area and went to school in Busselton. I moved to Perth almost seven years go to pursue a career in psychology.

I graduated from UWA at the end of 2005 with Honours in Psychology. I have just completed my Masters in Psychology (Clinical) and hope to begin my registration as a Clinical Psychologist very soon.

Not so long ago, there were virtually no Aboriginal psychologists in the field, and there was little recognition of the importance of cultural perspectives in psychology and mental health.

I will be graduating into a field where cultural knowledge is highly valued and there are many Aboriginal psychologists who serve as great role models. This gives me a great sense of optimism for the future, not only for my own career, but also for Aboriginal people in the community needing culturally appropriate services.
Science education opportunities

While in High School, your child has the opportunity to participate in various programs at University that will enhance their knowledge of Science.

We encourage your child to explore their interest in Science by joining in these fun science experiences each year of high school.

**Year 8 Discovery Day**
The Year 8 Discovery Day introduces students to the university environment through a diverse range of hands-on activities at different departments on campus.

These can include making a gyroscope, practicing medical procedures on mannequin Sam, and solving mathematical and statistical problems.

**Indigenous Science and Engineering Camp**
The School of Indigenous Studies expanded its High School programs in 2008 and held the inaugural Science and Engineering Camp for Indigenous Students in Year 9.

The camp provides participants with a hands-on experience of science, engineering and technology. There is an emphasis on fields relevant to Indigenous communities in Western Australia, including sustainability, ecology, conservation, infrastructure, water, energy and mineral resources.

**Siemens Science Experience 2009**
Is a three days of hands-on science in universities for **Year 9 students entering Year 10 in 2010**. Each program is designed to provide students who have an interest in science with an opportunity to engage in a wide range of fascinating science activities under the guidance of scientists who love their work.

www.scienceexperience.com.au

**Campus Challenge**
Campus Challenge is a week long residential/live-in program open to any student in **Years 10, 11 or 12**, organised by the UWA Sport and Recreation Association. The Challenge is held each year in July during the school holidays and provides students with hands-on experience in all aspects of university life.

**National Youth Science Forum**
This is a twelve day program for students moving into **Year 12** who are thinking about a career in science, engineering and technology.

Apply online at www.nysf.edu.au/application and follow the instructions.

For further information see UWA science calendar at www.science.uwa.edu.au/community/calendar

**The Indigenous Science Club**
For further information see the website

www.sis.uwa.edu.au/highschool/sciclub