



- Hannah Brown
- 25
- Woodville Park
- Woodville High School and completed in 2000
- Bachelor of Science (Biomedical Science) Hons in 2004
- Is currently undertaking a PhD at the University of Adelaide in the Discipline of Obstetrics and Gynaecology

Growth, development and maturation of the human egg takes 12 months to occur; which interestingly, is longer than it takes the human embryo to grow into a fully developed baby. This implies the importance of this period of growth and maturation and evidence suggests that disruptions during this time result in a poorly developed egg. My work focuses on the “support network” for the growing egg, and the role that it plays in providing the growing egg with the nutrients it requires to potentially develop into a healthy baby if fertilised. This work is helping to determine what the egg requires to produce a healthy baby and may provide new opportunities for treatment of some forms of human infertility.

I was always interested in science as a kid and was always keen to know why and how things worked the way they did. After completing a science degree at the University of Adelaide, I developed a keen interest in reproductive biology and decided that medical research was a way of pursuing this interest further.

Rarely in science do you just up and say “Eureka!” Most of the time its “hmm, now that’s interesting.” /
Asimov

- Name: Martin Sale
- Age: 33
- Suburb: Fullarton
- Unley High School – completed 1991
- BSc(Hons) – completed 1995, B Physiotherapy – completed 2000
- Postgraduate degree (include year completed): PhD (Neuroscience) – still going!

I am interested in the mechanisms by which the brain learns a new skill, stores memories and recovers from brain injury. All of these functions occur by a process known as neuroplasticity. We can induce neuroplasticity in the human brain, and my research has found that the ability to induce neuroplasticity in the human brain is influenced by the time-of-day. The brain learns better at night. We now have evidence to show that this effect is caused, at least in part, by the stress hormone cortisol. These results have important implications for conditions reliant on neuroplasticity for improvement of function, particularly stroke.

I was fascinated by the research I did during my honours degree, which investigated how the brains of Parkinson's Disease patients differ from those without the condition. Following Honours, I undertook a Physiotherapy Degree, and worked for a few years as a physio, during which time my greatest enjoyment came from helping stroke victims recover function. However, after a while I decided that I'd like to return to do a PhD and try to understand more about how the brain re-organises its connections to improve function after stroke. Hopefully one day I'll be able to incorporate my knowledge of neuroplasticity with the skills I've gained from physiotherapy to help victims of brain injury get the best possible treatment outcome.

- Favourite quote: Find a job you love, and you'll never work a day in your life (Confucius)



- Name: Emily Alvino
- 23
- Suburb: Aberfoyle Park
- Aberfoyle Park High School 2001
- Bachelor of Science and Business (Flinders University 2004) Honours in Health Science (Adelaide University 2005)
- Currently undertaking a phd in the Obstetrics and Gynaecology Department, Adelaide University

My research interests are focused around ovarian biology and cellular mechanisms involved in the process of Ovulation. Ovulation is the release of a mature oocyte or egg into the reproductive tract of a female prior to fertilisation. Ovulation is vital in reproduction and anovulation or the inability for a female to ovulate, is a major cause of infertility. Therefore, research into this important process will give us a better understanding and perhaps lead to treatments for women in the future.

I loved science during highschool and have always been interested in how things work, so decided to study science at University. I majored in molecular and microbiology and went on to complete honours in reproductive biology research.

I enjoy hanging out with friends, going to the beach and seeing live music.

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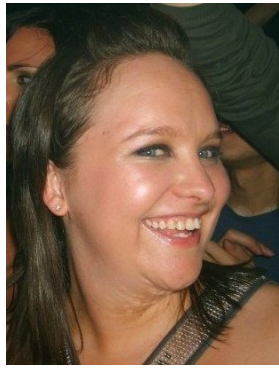
- Wee-Ching
- 23
- Rostrevor
- Adelaide High School, completed in 2002
- Bachelor of Science (Biomedical Science), Bachelor of Health Science (Hons) in 2006
- Is currently undertaking a PhD at the University of Adelaide in the Discipline of Obstetrics and Gynaecology

Recently, it has been discovered that some of what we thought was 'junk' DNA actually codes for molecules that control the production of proteins in our body. These molecules have been found to have a role in cancer and potentially have a role in placental development. The development of a good placenta is important during pregnancy because it exchanges nutrients from the mother to her baby. Impaired placental development may also lead to other pregnancy complications which could be fatal to both a mother and her baby. Thus, we hope to find out which of these molecules contributes to a healthy placenta. In the future, we hope to develop an analytical test that detects these molecules that are released into the mother's blood.

As a kid, I knew that I wanted to pursue a career somewhere in the medical field. I was always interested in learning how the human body worked and decided that studying biological sciences would help me achieve this. At university, these studies captured my interest and so I thought that going into medical research would be a good way to contribute to the improvement of human health.

Wee-Ching loves skiing, spending time with friends and learning how to play the guitar.

- If all of the DNA in our body was uncoiled, it would be long enough for nearly 70 round trips from the Earth to the Sun.
- The liquid inside young coconuts can be used as a substitute for blood plasma.
- People who laugh a lot are much healthier than those who don't. Dr. Lee Berk at the Loma Linda School of Public Health in California found that laughing lowers levels of stress hormones, and strengthens the immune system. Six-year-olds have it best - they laugh an average of 300 times a day. Adults only laugh 15 to 100 times a day.
- You lose enough dead skin cells in your lifetime to fill eight five-pound flour bags.
- The storage capacity of human brain exceeds 4 Terrabytes (4×10^{12} bytes!).



- Kathryn Gebhardt
- 24
- Vale Park
- Norwood Morialta High School, completed in 2001
- Bachelor of Health Sciences (completed 2004) Honours in 2005
- Currently undertaking a PhD at the University of Adelaide in the Discipline of Obstetrics and Gynaecology

Infertility affects 3% of Australians and is on the rise. There is a need for continual improvements in Assisted Reproductive Technologies (ART) such as IVF, to help more couples become pregnant. One aspect of improving IVF is to develop tests to help pick the best egg from a cohort. If there is a test for selecting the best egg then a patient can elect to have only one embryo put back. When more than one embryo is put back into the woman there is a risk of twins or triplets – which is commonly associated with IVF. It is also aimed at achieving healthier babies from IVF, which is a key goal of my research.

I was always interested in science at high school and enjoyed finding out the reason things happened and the scientific background. After completing a Health Sciences degree at the University of Adelaide with a major in Anatomy and Pathology, I developed an interest in reproductive biology and pursued Honours which led to a PhD.

Kathryn enjoys the company of friends, holidays, listening to music and dancing the night away.



Ashleigh Smith
23

Welland

Concordia College and completed year 12 in 2002

Bachelor of Science (Biomedical Science) Hons in 2006

Currently undertaking a PhD at the University of Adelaide in the Discipline of Obstetrics and Gynaecology

I use a technique called Transcranial magnetic brain stimulation to assess the function of motor pathways from the motor cortex in the brain to the muscles of the periphery. I am specifically interested in how these pathways change with increased age and how they may be linked to slowing of movements, disease and disability in later life. My work has significant social and economic benefits because late onset disease such as stroke or Parkinson's disease are key contributors to elderly people moving from independent to supported accommodation.

As a child I always wanted to be either a fire fighter or a doctor, however neither of these professions seemed to cross my path in later years so I undertook a degree in biomedical science at Adelaide University. It was here that I developed a keen interest in human physiology and genetics and have never looked back...

"If at first you don't succeed destroy all evidence so nobody knows you tried..."

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- Mark Prodoehl
- 28
- Hillcrest
- Banksia Park International High School
- Bachelor of Science at the University of Adelaide majoring in genetics and biochemistry completed in 2001 and I completed my honours with Dr Stephen Wood at the Child Health Research Institute in 2002
- I completed my PhD with Dr Stephen Wood at the Child Health Research Institute in 2008 entitled “Functional Analysis Of The Deubiquitylating Enzyme Fat Facets In Mouse In Protein Trafficking”
- My current work involves research into developing a therapy for a lysosomal storage disease that causes severe mental retardation. This disease is caused by the malfunction of an enzyme found in all cells of the body that is required to dispose of waste materials of the body. When this enzyme malfunctions, waste materials build up in the cell causing it to no longer function and eventually die. This results in mental retardation when brain cells die. My research is aimed at restoring the function of this enzyme to cells of patients with this debilitating disease, eliminating the build up of waste materials and resulting in a better quality of life and longevity these people.
- I have always been a curious person and from a very young age was always asking my parents “why”. My parents always encouraged me to do my own research to answer my questions (directing me to our copy of the Funk and Wagnalls encyclopedia) and my thirst for knowledge has not diminished since then. I have a genuine need to understand how things work and the drive and determination to not give up until I do. For this reason science seemed like the perfect career choice for me. As an added benefit, I get to help people obtain a better quality of life along the way.

“Science knows no country, because knowledge belongs to humanity, and is the torch which illuminates the world. Science is the highest personification of the nation because that nation will remain the first which carries the furthest the works of thought and intelligence.” Louis Pasteur circa 1820-1890