**Kim-Anh Do** has a hectic but interesting career in cancer research based on developing statistical and mathematical models.

**Age:** 33  
**Job title:** Development Manager, John Holland Group  
**Job description:** Actively contribute to development and growth strategies of John Holland. Evaluate viability and risks of major infrastructure projects and participate in the conversion of suitably identified projects into profitable contracts, protecting and growing the equity base of the company.  
**Secondary school subjects:** English, Mathematics I & II, Chemistry, Physics, Biology  
**Tertiary study:** Bachelor of Science (Honours) in Mathematics, UQ; PhD in Mathematics, University of Queensland; Graduate Diploma in Applied Finance and Investment, Securities Institute of Australia; Company Directors Course, Australian Institute of Company Directors.

**Salary Range:** Executive remuneration.

“If you are undecided about what courses to study or what type of occupation to pursue, spend some time identifying what areas you have a natural affinity for – this way you get to enjoy your study or occupation and it’s quite likely that you’ll be good at it as well. Studying mathematics doesn’t necessarily restrict you to being in education, research or purely quantitative roles – in fact it may mean you can contribute a different perspective and skill set to other sectors. In the construction industry there is always a varied set of issues to assess that can be both interesting and challenging. These aren’t all strictly numbers based – but studying mathematics and carrying out mathematical research provides a good foundation in any area for problem solving, analysis and concept generation.”

---

**Evan Jones** writes Software Applications for RADVISION

**Age:** 32  
**Job description:** I work on contract, supplying software engineering services for RADVISION whose main products are hardware for Voice and Video Conferencing over Internet and ISDN networks. Both products are Java based web applications, so I get to use a lot of the latest technologies to their fullest.  
**Secondary school subjects:** Mathematics I and II, Physics, Chemistry, Art, English  
**Tertiary study:** Bachelor of Science (Honours 1st class, University Medal) Department of Mathematics, University of Queensland; PhD, Department of Applied Mathematics and Theoretical Physics, Cambridge University.  
**Salary Range:** $8000 - $16000 per month

My work is very challenging, and I am required to work in a broad range of roles from analysis and design through to implementation. To remain professionally competitive, it is also necessary to constantly be aware of new and emerging technologies. I find I often draw on the skills I have developed through a strong mathematical training. The simplest example is the constant use of Boolean logic. On a more significant vein, I find that the rigor that is required to produce correct, complete and concise mathematical arguments can also be applied to creating software with the same qualities. Further, the ability to think abstractly, and to generalize and create models – which is something that is well developed in mathematical studies – allows me to quickly design and implement solutions. Also the abilities to quickly understand and absorb new concepts – which comes with studying abstract mathematics – makes it much easier to keep up with the state of the art.

---

Mathematics can open many doors in business, industry, finance, government, teaching or research.

In an increasingly computerized world you cannot go wrong by including a mathematics major in your university degree. Statistics and mathematical models are being used increasingly in business, industry, banking and research. Consequently, a bachelor’s degree in mathematics can lead to a broad range of highly paid jobs, many of which did not exist 5 or 6 years ago! Moreover, mathematical training gives you the agility to solve real problems. After all, how concrete is a mobile phone, running a business or the weather? (See our profiles.) In fact if you pull out all the stops and complete a double degree in maths and, say, commerce or communication, then the world’s your oyster. Above all a mathematics degree gives you the flexibility you need in today’s global employment market.
Andrea Marshall interprets the weather for Qantas flight planners.

**Age:** 24

**Job Description/History:** As a weather forecaster, I have forecast for several different locations within New South Wales. While working in the Sydney office, I was responsible for aviation and mobile weather forecasting. The difference between these is considerable. Public weather forecasting involves writing out four-day forecasts for all the major towns in NSW. Aviation forecasting is primarily focussed on weather developments over the next 24 hours, and requires more specific detail. For example in a public weather forecast, we mention “partly cloudy”. In an aviation forecast we need to mention what type of cloud, how much of it covers the sky, and what height it is. Aviation forecasts are split up into two types: area forecasts, which are designed to cover broad scale weather up to 1500 feet, and Terminal Aerodrome Forecast (TAFs), which are specific to an aerodrome. In NSW there are roughly 50 TAF locations I write forecasts for.

I have also worked in the Canberra Meteorological Office. In Canberra I prepared forecasts unsupervised and presented these forecasts to the media in routine radio broadcasts. I am currently contracted out to Qantas to liaise with flight planning. Here I interpret the forecasts across Australia and for selected international airports and relay significant information to the Flight Dispatch Staff who make sure that the appropriate fuel is carried.

My main focus is to do things I enjoy. During high school I loved the arts and I loved science. I chose to pursue a career in science... I decided to study maths and physics at uni to keep my options open. This gave me many skills in mathematics, statistics and computer programming that I would not have obtained doing a specialised degree. Upon joining the Bureau of Meteorology, I spent 10 months in Melbourne doing a Graduate Diploma in Meteorology, where effectively I learned everything I needed to know about weather forecasting anyway.

Working for the Bureau of Meteorology is great because there are so many avenues to explore. It’s not just forecasting. Variety is the spice of life, and why should work be any different? There’s climatology, severe weather, hydrology, oceanography, services development, research, aviation... and the list goes on. There’s also the opportunity to work as an individual doing research and developmental work, and opportunities to work as a part of a team, such as in the regional forecasting centres.

**Salary Range:** $55,000 - $90,000 (depends on level within the public service, and also on shiftwork).

**Tertiary Study:** Bachelor of Science (Honours), majoring in the field of Mathematics. Post Graduate Diploma in Meteorology. Bachelor of Science, majoring in Atmospheric Science.

**Phil Hawkes is a cryptographer working on developing 3G mobile phones.**

**Age:** 30

**Job title:** Staff Engineer for Qualcomm International, specializing in cryptography and other security aspects applicable to mobile phones.

**Job description:** I am mostly involved in designing and analyzing security aspects of mobile phone networks.

**Salary Range:** $80,000-$110,000

I have been with Qualcomm for 5 years now. My speciality is looking into weaknesses in ciphers that are (for example) used to scramble mobile phone calls, web pages and email. I have been surprised by the many various aspects of mathematics I’ve encountered along the way! I have flexibility in the research I want to do. Some of my research is academic and research, and I get to publish the results at international conferences. Other research has commercial applications. Someday soon you may be holding a mobile phone with “Phil” technology inside!

In recent years I have also been involved in helping develop the security standards for 3G (third generation) mobile phones. The meetings are spread over the whole of Asia, Africa and Europe, so this has given me further opportunities to explore the world. I have taken up photography as a hobby to keep me entertained while I am travelling.

I always have something to keep me busy researching. I (and other cryptographers like me) are constantly looking for new attacks on current ciphers and then working out how to design ciphers that resist these attacks. Sometimes it works, and sometimes it doesn’t, but I’ve learnt that you can’t have good times without the boring times. You have heard the saying “The journey is more important than the destination”. In the case of mathematics, I have to agree: the satisfaction I get from the process of getting the result exceeds the satisfaction I get from having obtained a result.

Rebecca Gower

“By studying what I was good at and enjoyed I have ended up with a varied and interesting career using mathematics”.

**Age:** 35

**Job title:** Consultant Analyst, Lawson Software Inc.

**Job description:** I carry out consulting work in the retail, shopping, and customer experience business for companies based on analysis of past shopping behaviour of consumers.

**Secondary school subjects:** Science, English, Art, Drama, Maths, German.