



# Postgraduate Opportunities

ADVERTISING FEATURE

**Biostatisticians make sense out of statistics which apply to medical research and we need more of them.**  
SUE GOSS reports.

## Growing our own biostatisticians



**B**iostatistics could be a word that is buried somewhere in an article about heart disease, cholera or swine flu. But what is it and do we really need it? Professor Andrew Forbes from the Department of Epidemiology and Preventive Medicine at Monash University explains.

"Biostatistics is the application of statistical methods to health and medical research," he says.

"Any research study involving the development of new treatments for disease or investigation of the health effects of exposures or lifestyle factors involves biostatistics which quantifies the evidence. It's an essential tool which allows us to draw appropriate conclusions for treatment."

In 2001, it was realised that there was a dire shortage of qualified biostatisticians in Australia. A series of meetings of senior people working in the area told the same story — there was simply nobody around to fill the growing need.

So the Biostatistics Collaboration of Australia (BCA) was set up by a group of eight universities to provide a rigorous masters degree which would specifically train people to work as biostatisticians in Government health departments, universities, hospitals, private industry and not-for-profit research agencies. Eight years and many graduates later, the demand for biostatisticians still far outweighs their supply.



From top: Professor Andrew Forbes with Alfred Hospital researchers; biostatisticians consult with people at the Baker Heart Institute.

You have to want to take on this course and have an aptitude for maths which underpins every subject. "Students fall into two broad categories," says Prof Forbes. "The first is those who are in a health-related profession, for example — doctors, physiotherapists, medical research. They come across the need to learn and understand statistical methods in their work and have an underlying interest in numerical matters. They might also want to make a career change. Others have tertiary training in maths and statistics and realise its enormous opportunities in health and medical applications — biostatistics."

Dr Alicia Stein who recently completed the Master of Biostatistics with the BCA falls into both categories. During her undergraduate degree she was fascinated with immunology and later did a PhD in transplantation immunology at Monash University. For many years she worked at the Transplantation and Renal Research Laboratory at the Monash University Department of Medicine.

"Some of our research projects and longitudinal clinical studies had to be analysed by statisticians outside our research group," she says. "I became interested in learning how to do the



**Age**  
**29/06/2009**  
**Page: 5**  
**Advertising feature**  
**By: Sue Goss**  
**Region: Melbourne**  
**Circulation: 197600**  
**Type: Capital City Daily**  
**Size: 655.41 sq.cms**  
**Frequency: MTWTFS-**

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appropriate analyses myself. When I decided I wanted to explore something different, I approached Professor Forbes who reviewed my past experience. I had always enjoyed maths and my undergraduate course had included calculus and statistics subjects. So he suggested the BCA course and I enrolled."

Dr Stein loved it.  
"It provided the foundation for methods that I had previously come across, and gave me many new tools for designing and analysing research studies, and for really understanding what the results mean. Each subject in the course, although quite individual, built on the others nicely."

Dr Stein greatly enjoyed the compulsory work placement, the interaction with other students online in groups and the distance education mode of the course enabled her to balance work and family commitments with study. Dr Alicia Stein now works for CSL Ltd. See <http://www.bca.edu.au/>