

# Actuary

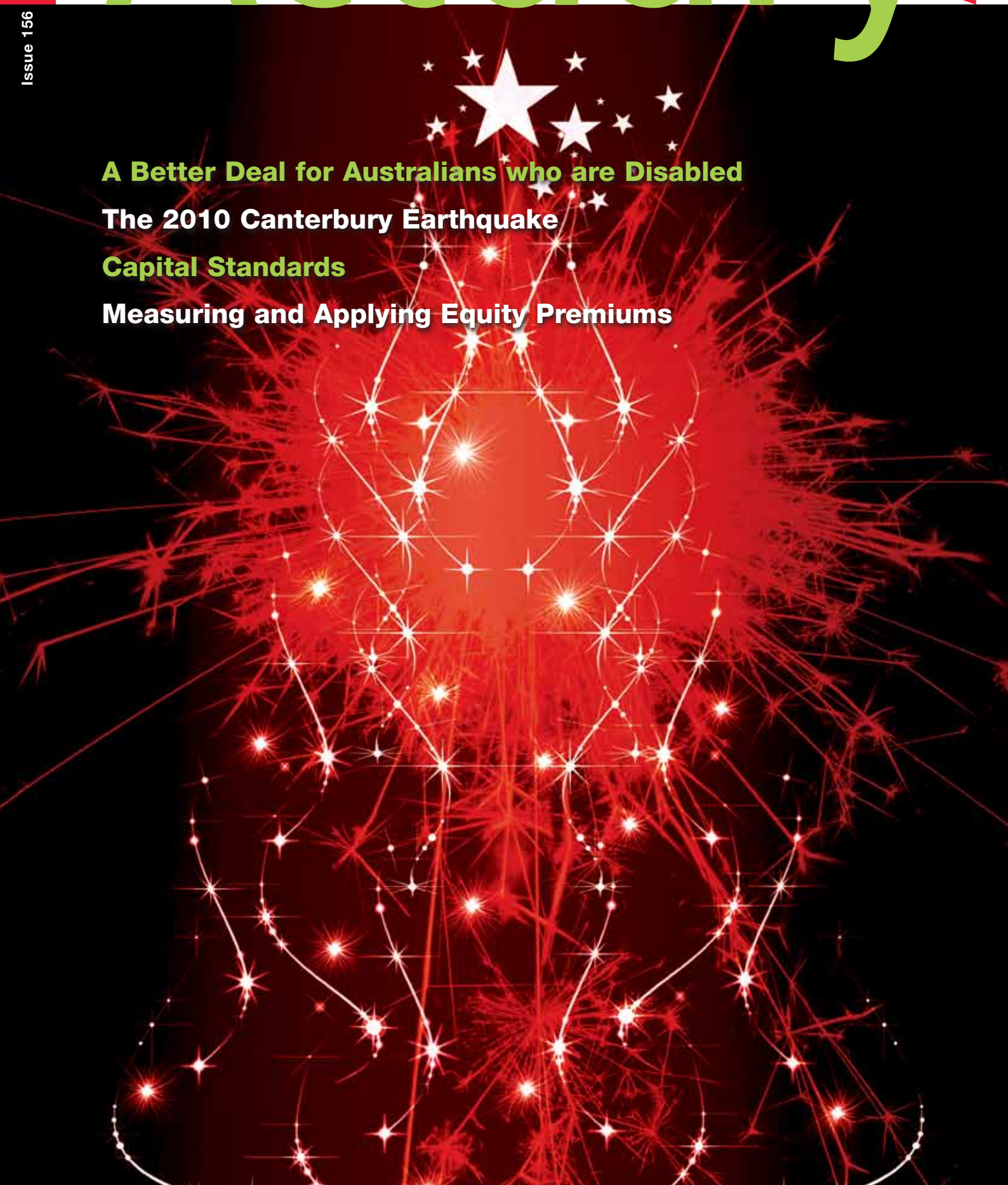
Australia

**A Better Deal for Australians who are Disabled**

**The 2010 Canterbury Earthquake**

**Capital Standards**

**Measuring and Applying Equity Premiums**



I have been thinking about perceptions again. I have just completed a leadership course where you assess yourself and a number of others (peers, staff and boss) assess you too. If you assume your own assessment is your actual intention and your feedback from others is how you are being perceived, the disconnect can be very enlightening.

Speaking of disconnects and perceptions, a friend lent me her copy of a Finsia study and survey (of 817 Finsia members) dispelling myths in the workplace regarding women and work. For some survey questions there was a complete disconnect between what women and men perceived:

- 28% of women felt their companies had taken significant steps to address structural disadvantages to women, compared with 71% of men; and
- on the development of targets for the number of women at executive level and measurement against those, 73% of women agreed they should be introduced compared with 32% of men.

One of the takeouts from the paper for me was that the document posited that early mentoring and development of professional women at the start of their careers would alleviate some of the barriers.

We do have some wonderful role models in the actuarial profession, but before we pat ourselves on the back too much, at the time of publication all life insurance Appointed Actuary roles are currently filled by men. For general insurance, my data is a bit out of date and approximate, but it appeared that less than 20% of approved actuary roles were filled by women. Anything we can do as a profession to develop all of our members to their potential needs to be encouraged.

I want to take the opportunity to thank those people (you know who you are) that made this magazine possible: the authors, our editorial committee, Katrina at the institute, Simon Palmer who adds colour and flavour, the proof readers and our readers.

I want to make a special thank you to Matthew Wood for his contribution while on the editorial committee. He has been on the committee for a number of years and his input has been invaluable.

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## Actuary Australia

### Contributions

Contributions should be sent to The Institute of Actuaries of Australia, marked to the attention of **Katrina McFadyen** (Publications Manager). When sending contributions please supply text in Microsoft® Word format. Illustrations and photos should be supplied as JPEG, TIFF, EPS or PDF files at a resolution of 300dpi. (Note: GIF files are generally unacceptable because of low resolutions). Prior to supply of material, please confirm supply specifications, copy limits and relevant details with Katrina McFadyen. Email: [katrina.mcfadyen@actuaries.asn.au](mailto:katrina.mcfadyen@actuaries.asn.au)

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## What's New on the Web – December

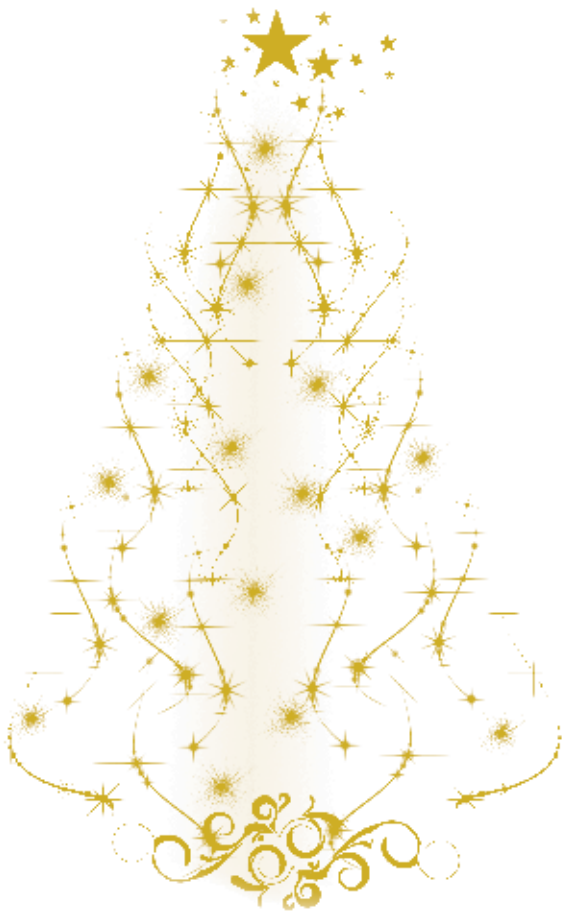
### Renewals

The Institute's membership year currently runs from 1 October – 30 September. However renewals are due 31 January. For this year, the renewal payment deadline will remain 31 January 2011 however for next year the payment deadline will be brought forward. Membership can be renewed online. If you have not received your membership renewal information please contact [actuaries@actuaries.asn.au](mailto:actuaries@actuaries.asn.au)

### A Framework for Assessing Risk Margins

A Framework for Assessing Risk Margins was prepared by the Risk Margins Taskforce. The Risk Margins Taskforce was set up by the General Insurance Practice Committee (GIPC) in 2006. At the time, the GIPC recognised the need to help general insurance actuaries develop an approach to the assessment of risk margins that was more robust and consistent than the wide range of approaches that were being used in practice.

Questions regarding the framework or the final paper should be directed in the first instance to [karl.marshall@quantum.com.au](mailto:karl.marshall@quantum.com.au) or [peter.mccarthy@au.ey.com](mailto:peter.mccarthy@au.ey.com)



### Diary Dates

10-13 April 2011	Sydney	Biennial Convention
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# contents

<b>4</b>	<b>A Better Deal for Australians who are Disabled</b> <b>Report:</b> Bruce Harris
<b>6</b>	<b>President's Column</b> Bozena Hinton
<b>7</b>	<b>Actuary Unearthed</b> Shannon Lin
<b>8</b>	<b>The 2010 Canterbury Earthquake</b> <b>Report:</b> Richard Beauchamp
<b>11</b>	<b>Capital Standards</b> <b>Review:</b> Tim Spicer / Ian Grubb
<b>14</b>	<b>17th General Insurance Seminar – Risk and Reward</b> <b>Report:</b> GI Seminar Organising Committee
<b>18</b>	<b>2010 Actuary Australia Index</b> Annual index of articles
<b>20</b>	<b>Measuring and Applying Equity Premiums</b> <b>Comment:</b> Robert Daly
<b>22</b>	<b>In the Margin</b> <b>Puzzles:</b> Genevieve Hayes
<b>23</b>	<b>More than Maths</b> <b>Communications:</b> Martin Mulcare
<b>24</b>	<b>Health Reform in Australia</b> <b>Opinion:</b> Brent Walker
<b>26</b>	<b>Council Changes</b> <b>Notice:</b> Anne Peters / Kylie Williamson
<b>27</b>	<b>Congratulations to Macquarie University Actuarial Studies Student</b> <b>Award:</b> Maggie Lee  <b>Student Columns for 2011</b> <b>Notice</b>
<b>28</b>	<b>Biennial Convention 2011 – Beyond the Mandate</b> <b>Event Promotion</b>
<b>30</b>	<b>Actuarial Women's Network</b> <b>Report:</b> Abigail Marwick
<b>31</b>	<b>Education Update</b> Philip Latham
<b>32</b>	<b>Obituary: Nick Renton – A Full Life</b> Graham Rogers
<b>33</b>	<b>CEO's Column</b> Melinda Howes
<b>34</b>	<b>Letter</b> Anne Peters





**T**he Productivity Commission has been asked by the Commonwealth Government to examine the feasibility, costs and benefits of replacing the current system of disability services with a new National Disability Long-term Care and Support Scheme. The proposed new scheme would support eligible people with a severe or profound disability, a far larger group of people than those covered through the current accident compensation schemes. (People with a disability acquired as part of the natural ageing process would not be covered by the proposed new scheme).

The Commission's review includes eligibility criteria for coverage by the new scheme; determination of benefit entitlements; and how a national disability scheme could be delivered, administered, and financed, including how the proposed new scheme would interact with Australia's health, aged care, informal care, income support and injury insurance systems.

**The purpose of this article is to inform members on the actions that the Institute has taken to date, proposed future actions, and to invite comment from Institute members.**

### Action to Date : Submission to the Inquiry

The Institute made a submission to the Inquiry. The main messages in our submission are:

- Reform of the system for disability care and support is essential and sound long term economic and social policy. However, there are substantial financial risks involved in implementing and

managing a new national disability scheme. These risks include General Pricing, Operational, Cost of Care, and Investment and Capital Management (if the new scheme is funded) (page 3).

- Reform of disability care and support needs to move towards providing benefits on a broader level than currently applies, by moving away from an arbitrary rationing system and towards a system where needs are met according to national standards (page 5).
- There are substantial financial risks involved in a new disability scheme. It will, therefore, require strong scheme governance and management. The existing accident compensation schemes can provide learnings (both positive and negative) in this area (page 3).
- Further essential steps include defining the service delivery models; setting objective and robust assessment and eligibility criteria; gaining a sound understanding of the financial implications of the eligibility and entitlement rules; developing comprehensive monitoring of all aspects of the system; and operational auditing of all key processes (page 6).
- One way to mitigate the substantial financial risks of a new scheme would be to implement it in measured stages over time. Further harmonisation of the statutory accident compensation schemes and reform for those most seriously disabled could be considered as first steps. Further research and pilot studies are needed to determine exactly what those steps should be (page 3).

- The submission considers the advantages of both the PAYG and the Insurance Funded approaches but does not recommend one approach over the other (page 12).

**A full copy of the Institute's submission can be obtained from either the Institute's or the Productivity Commission's website** <http://www.pc.gov.au/projects/inquiry/disability-support/submissions> (No. 559) which contains a substantial range of submissions from a variety of organisations and individuals, including some actuaries, showing the potential importance of the Inquiry and the wide interest in this subject).

### Proposed Actions

The Productivity Commission is due to release a draft report in February 2011 for public comment. Their final report is due to be presented to Government in July 2011. The Productivity Commission's timetable is tight and there are many complex issues to be considered. The Institute will need to decide what action to take when the Productivity Commission's draft recommendations are published early in 2011.

In preparation, the Institute has established a Disability Care and Support Taskforce and is in the process of determining its membership. It is expected that the membership will include a broad range of practitioners from all of the actuarial streams and cover a diverse range of experiences.

The Taskforce's primary objectives will be to advise Council on the actions (if any) that the Institute should take during 2011 as the Productivity Commission's reports are released. The Taskforce will invite the Productivity Commission to discuss their recommendations and their rationale at a meeting of Institute members after the Commission's draft report is available.

### How will this impact you as an actuary?

Actuaries have already started to conceptually consider what this might mean for their clients or organisations. However, in the absence of concrete details (expected to be included in the Productivity Commission's draft report) it is difficult to be conclusive. There are a large number of service delivery models and approaches that could be considered.

The proposed national disability scheme may have a major impact on bodily injury schemes (motor and medical indemnity) and to a lesser extent workers' compensation, public liability and other GI products. It may also have implications for health and life insurers. Actuaries will, of course, need to consider the implications for pricing, reserving, budgets, risk margins, capital management, monitoring and their businesses and clients in general.

It is also foreseeable that individual actuaries may become involved in projecting disability costs at a national level, as part of a new scheme. Our skill set in disability related work has already been developed as part of our work for the current accident and medical

The proposed national disability scheme may have a major impact on bodily injury schemes, workers' compensation, public liability and other GI products; it may also have implications for health and life insurers. Actuaries will need to consider the implications for their businesses and clients.

indemnity schemes, for life insurers who provide disability benefits, and for private health insurers. Actuaries may also broaden their skills beyond traditional actuarial work through management and governance roles.

If you have any comments to make, or would like to contribute to the Institute's work in 2011, please contact Julia Purves via (02) 9239 6106 or [julia.purves@actuaries.asn.au](mailto:julia.purves@actuaries.asn.au) ▲

#### Bruce Harris

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Vienna



It is hard to believe that 2010 is coming to an end and that this will be my last President's column. I am, however, delighted to see such a strong candidature for the recent Council elections and am confident that the new Council will build on the work to date and continue to carry the Institute forward.

Looking back over the year, we have achieved a number of significant milestones:

- **ERM Course** – this year the Fellowship Part III options were expanded to include Enterprise Risk Management. This was the first Fellowship subject in a new practice area in a long time. This course also counts towards a new actuarial designation, the Chartered Enterprise Risk Actuary (CERA). The enrolments in this course have been very strong, with 67 in the first semester and 81 in the second semester, reflecting the strong interest among our members. Further expansion of Module 1 options is currently being planned.
- **Hundreds of new actuaries** – many Associate members have attended one of the five Professionalism Courses this year which has enabled them to now be recognised as actuaries. This is a significant achievement and I am sure that our new actuaries will be excellent ambassadors for the profession.
- **Focus on member services** – there has been a continued effort to increase the member services focus of the Institute. The ongoing development of a new and improved website is a reflection of this. Providing easy access for our members to our electronic resources, such as podcasts, is another area we are progressing. We are planning to have files easily accessible via iTunes. This improved access will make it more convenient for those who cannot physically attend events.
- **Media presence** – our Institute is active on many fronts and working hard to get our voice heard in the public arena. Media advisors are assisting us to position our messages in relevant publications and liaising with journalists who can get our points across. The value of the work put in by our volunteers is maximised if our message is



Dinner with UK Presidents

conveyed to as wide an audience as possible. In addition, we are being proactive, not just reactive, and have now launched public policy positions in the areas of:

- assisting financial services enterprises to better manage risk;
- securing adequate retirement incomes for an ageing Australia; and
- mitigating and managing financial risks arising from environmental issues.

- **International affairs** – our relationships with overseas associations are important to us. Our Fellowship qualification is well regarded internationally, which makes it easier for our members to work abroad. We are investigating ways we can work together internationally on the education front and one example of where we have achieved this is with our textbook *Understanding Actuarial Management: the actuarial control cycle* that we have produced in collaboration with the SoA. We are also exploring ways we can work together in providing CPD, especially for our Asian-based members.

Finally, I would like to thank all our volunteers whom I have been fortunate to work with during my time on Council and in particular during this last year. I would also like to thank Council and the secretariat for their support.

I wish all of you a very happy Christmas and best wishes for success in the New Year! ▲

**Bozenna Hinton**

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IAA Council Meeting in Vienna  
Left, Bozenna Hinton and Don Segal, SOA President

# Shannon Lin

## Title...

Deloitte uses the title 'Senior Consultant' with their clients

## Organisation...

I'm currently on 'OnePath' moving upward northbound to Deloitte in London

## My favourite meal...

Having friends at my apartment to test my mother's recipe on them. Or to be wined and dined in a two or three Chef Hat restaurant where I choose the wine

## The last book I read (and when)...

Two books that I often refer to are Dalai Lama's *The Art of Happiness* – which keeps me balanced whenever I feel down and whenever I need to feel up; *The Art of War* by Sun Tze, to prepare tactics for winning a battle or challenge in life

## My favourite CD...

I love bluegrass-country music because I am an old fashioned homely girl – I can listen to Alison Krauss all day long

## My favourite film...

*Inception* – the film involves complex layers of inception which is intriguing and provoked my thoughts about past, present, future, unresolved mysteries...

## My interesting / quirky hobby...

Having too many expensive hobbies (almost costing me my solvency status) – skydiving, snowboarding, deep-sea diving and golfing

## My ideal weekend day...

The weekend that I am able to pursue any of the above quirky hobbies

## If stranded on a desert island I'd take...

My deep-sea diving gear and spear so that I can obtain fresh seafood everyday

## The person I'd most like to meet...

The real James Bond 007 – who can really skydive, snowboard, deep-sea dive and play golf – with me. I am getting there... Deloitte's London office is within walking distance of MI6

## What gets my goat...

I've discovered no man is like James Bond

## What I wanted to be when I grew up...

*La Femme Nikita* – just to prove that woman can be as capable as anyone, including James

## Why I decided to become an actuary...

I know this profession pays well – but one does soon find out that the pay does not match up with the skill, pressure, intensity and demand of the work.

## Where I studied to become an actuary...

Macquarie University '06

## Qualifications obtained...

BAppFin, BActStud in 2006 and FIAA in August 2010

## My work history...

AMP and INGA (now known as 'OnePath') – now on one-path upward northbound to Deloitte in London

## What's most interesting about my role...

The role of a senior consultant is to consult and to be consulted – not knowing who to believe and managing to find a credible solution is very challenging

## My role's greatest challenges...

To convince my clients my solution is in fact credible (*The Art of War* says that in times of war to demonstrate upfront that you are prepared, committed and indeed seem to be the winner)

## Who has been the biggest influence on my career (and why)...

The female mentoring initiative from my work (thank you Robin KI) and the Institute's Step-Up leadership program (thanks Leoniel) are good policies helping young professionals like me. Both have helped me to believe that in life everything is possible

## My most important decision...

I was determined to remain in Australia and at age 17, fight the immigration department on my case to stay and finish my actuarial course. While some people may have taken it for granted, I am proud of and appreciate my Australian Citizenship

## My earliest memory...

Dad was always ill, Mum is always striving to take care of us and I always want to be helpful

## My next holiday destination is...

To make amends and spend time with Mum in Taiwan... prior to moving up and northbound one-path to happiness and wealth in London with Deloitte

## I'm most passionate about...

While I appreciate and understand big issues; climate change, injustice, human right and public health; my passion is to maintain passion itself in life without being influenced by the heavy duty work. (*The Art of Happiness* says that you cannot find true happiness by being a successful worker alone, one has to be passionate about life and not just the economical consequences)



## My biggest regret...

To be separated from my Mum when her immigration case to remain in Australia failed

## I'd like to be brave enough to...

To defy fear and do the scenic bungee jumps at Victoria Fall in Zimbabwe. Join me?

## My proudest moment...

Delivering a speech on behalf of all graduates at the Sydney Fellowship and Graduation Dinner in August 2010, in front of three women I admire – my Mum, and our young and female duo, CEO Melinda Howes and President Bozena Hinton – all three are successful working mothers, wives and people that I admire

## The best party I've had...

Schoolies week 2002, at Noosa when girlfriends and I explored forbidden foods

## In my life I'm planning to change...

The perception of a glass ceiling that cannot be broken for women and for people of non-English background. Please check my Facebook in 10 years

## The age I would like to stay...

The age I achieve Grand-motherhood and the position of CEO of ANZ... about age 60 when I can retire with \$60 million as bonus to spend on my grandchildren

## At least once in their life, every actuary should...

Be in a reverse role – in a position to commission the actuarial industry on the assignment of fixing the world economy and have the knowledge to be able to repudiate any nonsense recommendation or embrace the high quality solution that changes the world to be better

## My best advice for my children...

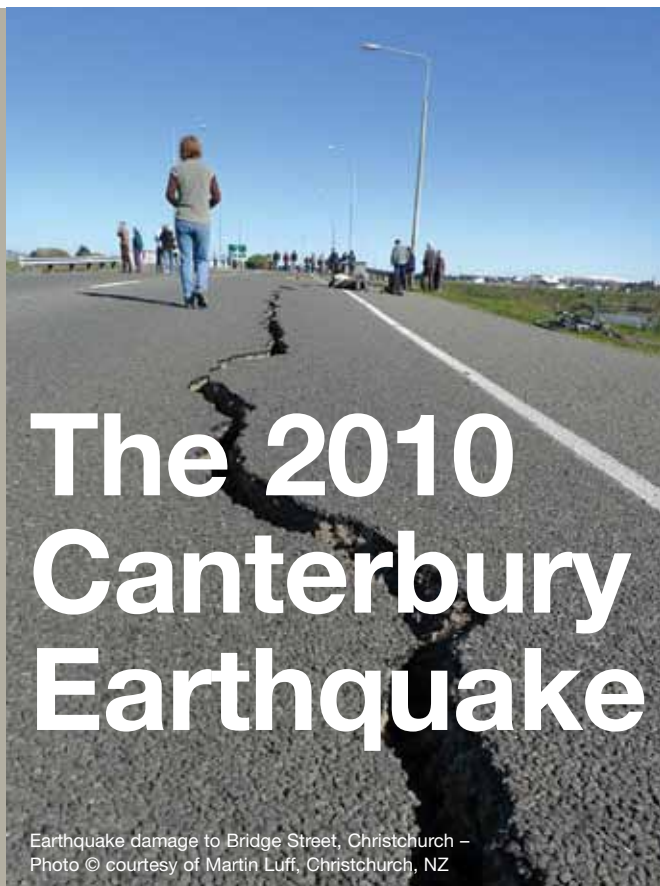
By all means be a modern person, but don't forget the good old fashioned values

## Four words that sum me up...

Modern Old Fashioned Girl ▲

## Shannon Lin

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# The 2010 Canterbury Earthquake

Earthquake damage to Bridge Street, Christchurch – Photo © courtesy of Martin Luff, Christchurch, NZ

Canterbury folk are a pretty stoic bunch. Yet with each of the aftershocks that has followed September's devastating Canterbury earthquake, there is a collective drawing of breath and a hope that this shake won't be like the first.

The first shake was a 7.1 magnitude earthquake that occurred at 0435 NZST on 4 September 2010. The quake had its epicentre near Darfield, a farming town some 40 km west of Christchurch, New Zealand's second largest city and the South Island's main centre. Terrified residents all across Canterbury awoke to a roar like a freight train followed by 45 seconds of intense ground shaking. Fortunately, no-one was killed and only a few people suffered major injuries.

At our house, we awoke to the noise and some shaking that soon became much greater than anything we had ever experienced, despite having lived for some years in New Zealand's earthquake capital, Wellington. Realising that this was a big earthquake, our next thoughts were for our two young boys, asleep across the hallway. We got to the boys quickly and spent what seemed an eternity huddled over them on their bedroom floor, low enough to protect us all from any tall items that could have toppled.

The next few minutes and hours were probably very similar for most of us affected by the earthquake. Once the shaking stopped, people grabbed what clothes they could and, armed with flashlights, evacuated themselves and their families to safety, often just decamping to their driveway in case their house collapsed. Neighbours checked on each other in the darkness – power was out to much of the city – and many of us quickly carried out the civil emergency procedures we mostly know but imagine we will never need, turning off power and water, thinking about emergency food and water and listening to the radio for news and advice.

Power outages meant no television or internet for most. Therefore, while pictures of destroyed buildings in the centre city were soon being seen outside Christchurch, most of us in the quake zone had no idea of the true extent of the damage.

By now, phone calls and text messages had put many people in touch with friends and family inside and out of the quake zone. Mobile phone companies warned, however, that the mobile phone network's battery backup would soon fail and asked that people text rather than call their contacts to maximize the network's life.

The morning dawned bright and clear on 4 September and, in one of life's cruel ironies, turned out to be one of those early spring days normally spent making the most of the garden or the water. Instead, first light gave Cantabrians a chance to survey the damage and to emerge from sitting for two hours in the dark, not really knowing the full extent of the quake and bracing themselves against the first of the aftershocks that would become a feature of this quake for weeks.

For most of us, that first Saturday was spent assessing the damage to our properties and tidying up as much as we dared, conscious that we risked further damage from aftershocks. Damaged brick chimneys, if not already down, were removed. Tarpaulins became a familiar sight in neighbourhoods where roof tiles or brick chimneys were common.

Power was restored to most of Christchurch by Saturday evening, less than 24 hours after the earthquake. Internet news-sites and television added to our vision of the disaster and gave a sense of perspective. All of a sudden, we were once again in touch with the rest of the world. Friends phoned friends again to ensure all was well.

Water and sewerage were mostly restored in the days that followed, although some badly affected parts of Christchurch will not have these services restored for many months yet, or longer. It is humbling to think how hard maintenance engineers from the utility companies and local authorities worked during those first few days

despite many suffering damage to or loss of their own homes.

Monday 6 September, Day Three post quake, was the first time many of us had ventured downtown, as we made our way to work,





prepared to spend time tidying up and to try to regain a degree of normality. Much of the central business district was, however, subject to police cordon. For many businesses, this meant no access for staff, or customers, and the economic reality of the quake began to dawn on us.

The nature and extent of the earthquake damage became clear during those first few days as building inspectors from various agencies and the media moved around the region. My company, a personal lines insurer with significant market share in the region, deployed our Disaster Response Team to coordinate our initial response to earthquake claims. We watched as claims, albeit based only on customer notification and rough estimates of damage, emerged in particular areas.

It quickly became apparent that while the dramatic pictures seen immediately after the quake showed a pile of rubble in the historic central part of Christchurch, the true extent of the quake had been experienced further east and along the banks of Christchurch's Avon river and estuary. Many, perhaps most, homes in these locations were subject to significant liquefaction and lateral spreading of the land.

The river town of Kaiapoi, north of Christchurch, and the new suburb of Bexley, built on reclaimed swampland in eastern Christchurch, were particularly hard hit. In these places some houses have been split right in two, with metre-wide gaps in their foundation slab and

### The Canterbury quake at a glance

<b>Date:</b>	4 September 2010 at 0435 NZST
<b>Location:</b>	Near Darfield, Canterbury, NZ
<b>Depth:</b>	10 km
<b>Magnitude:</b>	7.1Mw
<b>Max intensity:</b>	MM9
<b>Casualties:</b>	2 seriously injured
<b>Approximately</b>	100 injuries in total

Data source: [www.geonet.org.nz](http://www.geonet.org.nz)

land. Some houses have settled 300mm into the ground. And entire streets have been affected.

During that first week, experts warned of a major aftershock being likely, perhaps up to Magnitude 6. Partly in response to this, already rattled, Canterbury folk re-stocked their emergency provisions (or stocked them if they were caught out by the first quake). People elsewhere in New Zealand probably did too. Supermarket supplies of water, canned goods and batteries became quickly depleted.

The face of Christchurch and other parts of Canterbury experienced significant change over the next few weeks. Temporary one-way road systems emerged and other roads closed. Chain-link fences for protection against falling debris became commonplace. Most



Earthquake damage on Worcester Street, corner Manchester Street. Christchurch Cathedral is in the background. Photo courtesy of Schwede66



Aftermath of earthquake in Christchurch, NZ; protruding storm drain, Brooklands  
Photo © courtesy of Martin Luff, Christchurch, NZ

pronounced, perhaps, were the gaping holes in the commercial and urban landscape that emerged when irreparable buildings were demolished. Many of us expressed concern at the speed at which some buildings came down.

We are now in our third month since the quake. Parts of central Christchurch are still cordoned off and many businesses are not operating from where they were on 3 September, if at all. Certain suburbs are still without water and sewerage, and may remain in this state for months or years. Insurance claims assessors are working through 130,000 House and Contents claims and homeowners are becoming familiar with Earthquake Commission, insurer and government processes.

Aftershocks still occur most days and, while their regularity has decreased, some have been quite large, even causing further damage to buildings and properties. Decisions about how to remedy land subject to liquefaction are in progress and major construction companies have been appointed by the Earthquake Commission and insurers to begin and manage the rebuilding process.

Early estimates are that the Canterbury earthquake will cost over NZ\$4 billion. Many people have lost their homes and reconstruction may take years for some. Some businesses are facing financial difficulties. At the same time, the earthquake has tested building codes and civil defence planning, and will ensure our buildings are safer in future. It has brought communities together and should ensure our own emergency plans and kits are up to date. It has increased earthquake awareness beyond Canterbury, perhaps, especially in quake-prone Wellington where "the big one" is commonly thought of as overdue. And it has provided a great deal of work for the construction industry!

Personally, I would not wish to experience another major earthquake. Our family is safe and our home has suffered only superficial damage. But it has been only recently that the aftershocks no longer cause us to hold our breath, in case they turn out to be as bad as that first shake, early Saturday 4 September 2010. ▲

**Richard Beauchamp**

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## The Earthquake Commission: New Zealand's Earthquake Insurer

The Earthquake Commission (EQC) was established by the New Zealand Government in 1945 to provide earthquake and war damage cover for purchasers of fire insurance. Cover for other natural disasters was included later and cover for war damage eventually dropped. Today EQC pays claims from New Zealand residential property owners for damage caused by earthquake, natural landslip, volcanic eruption, hydrothermal activity and tsunami.

EQC's Natural Disaster Fund is built up from premiums levied on domestic house and contents insurance policies. Premiums are levied at 5 cents (plus GST) for every \$100 insured (up to EQC policy limits). The Fund currently amounts to around \$5.6 billion, backed up by reinsurance and a Government guarantee.

EQC insures homes on a replacement value basis, up to a maximum of \$100,000 (plus GST). It insures personal belongings on the same basis as the insured's Contents insurance policy, up to a maximum of \$20,000 (plus GST). Personal lines insurers typically provide top-up earthquake cover above the EQC policy limits. Source: [www.eqc.govt.nz](http://www.eqc.govt.nz)

## Impact on the insurance industry

At 10 November 2010 there had been approximately 90,000 House and 40,000 Contents claims lodged with the Earthquake Commission. There are approximately 140,000 households in Christchurch and 200,000 in the greater Canterbury region, which suggests that a great many have been affected by the earthquake.

Many claims will exceed EQC maximums so will require topping up by insurers. In many cases, claims will be to completely rebuild homes. Overall, the bill for the EQC and insurance companies, and therefore their reinsurers, for repairing residential properties is estimated to be NZ\$2 billion. The cost of claims on commercial insurance policies, plus the cost of repairing city infrastructure (particularly sewers and roads), is estimated to cost a further NZ\$2 billion.

Insurers are also acutely aware of the new underwriting issues they face in Canterbury. In the short term, some insurers have required a 21 day stand-down before underwriting earthquake risk in the quake zone. Geotechnical and other detailed inspections of the property are now almost universally required as part of each underwriting assessment.

Catastrophe models, widely used to support reinsurance purchasing decisions, are likely to be reviewed and potentially recalibrated, if losses differ very much from those expected. Catastrophe model outcomes may in the near future be applied more readily to guide risk selection and pricing decisions. Also, the earthquake has generated a great deal of research data that should lead to a better understanding of earthquake risk in Canterbury and perhaps more widely. This should lead to better underwriting and risk management decisions in the future.

### Photo sources:

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# Capital Standards

**APRA's review of capital standards for general insurers and life insurers**

## Introduction

On 13 May 2010, the Australian Prudential Regulation Authority (APRA) released a Discussion Paper describing its proposals to update the prudential capital standards for general insurers and life insurers in Australia. These reforms are expected to be rolled out in 2012.

The Discussion Paper outlined the rationale for change and is based on APRA's desire for:

- improved risk sensitivity – an insurer's regulatory capital should better reflect the various risks it is taking; and
- greater alignment of capital standards across the life and general insurance industries in Australia and harmonisation with similar reforms planned for Europe in 2012 (Solvency II);

with APRA stating they have no deliberate intention of increasing the market regulatory capital above existing levels.

The Discussion Paper was followed by the release of three Technical Papers, which provided additional information and details around the rationale for the proposed changes. In addition, APRA invited all insurers to participate in a Quantitative Impact Study (QIS) to allow APRA to assess the impact of the proposed changes across the industry.

The Institute established a life insurance capital taskforce and a general insurance capital taskforce to:

- look specifically at the Discussion Papers and Technical Papers and their implications;
- meet with APRA on a regular basis to discuss issues as they arose;
- canvass opinion from members about the reforms including holding discussion sessions/seminars;
- represent the collective views of members in providing feedback to APRA.

The taskforces were chaired by Rob Desoisa (life insurance) and Peter McCarthy (general insurance), and consisted of volunteers representing a wide range of companies across the industry.

The Institute believes that APRA's broad objectives are sensible, and supports APRA's intentions. However, there are a number of aspects of the proposals where the Institute believes further clarification is required, or where the details appear at odds with the broad intentions. In this article we outline the Institute's views on some of these aspects of APRA's proposals. Further details

on all of the points made are available in the Institute's written responses to APRA, which are available through the Institute website [www.actuaries.asn.au](http://www.actuaries.asn.au)

Where issues are more pertinent to life insurance or general insurance in particular, we have highlighted these in separate sections.

## Key issues

### Timing

In the letter accompanying the release of the final QIS package on 1 September 2010, APRA confirmed that it is intending to release draft prudential standards before the end of 2010.

The Institute has suggested to APRA that wide-ranging proposals such as these require significant time to develop interpretations, develop modelling solutions, review results, analyse changes and consider the broader business implications, including robustness over time. The Institute has strongly recommended that APRA invite companies to complete a further QIS, to allow APRA to make changes based on feedback received and to allow companies (and APRA) to assess the impact of the proposals on their businesses at a different point in the economic cycle.

### Complexity

For life insurers, the proposed changes significantly increase the complexity of the calculations required. However a number of broad overlays remain (for example the BETV minimum) which reduce the risk-sensitivity of the capital requirements.

For general insurers, the real interest rate module and the inflation module within the asset risk charge are more complicated than the existing charges and the insurance concentration risk charge is substantially more complex.

The Institute is concerned that the broad overlays and increased complexity could result in capital standards that do not act to encourage or facilitate good risk management practices. The Institute has recommended to APRA that it simplifies the calculations required wherever possible, and it specifies the circumstances under which detailed calculations are not required where it can be demonstrated that these will not affect the overall level of capital.

### Overarching philosophy

The philosophy for the proposed capital requirement is less clearly set out and less easily understood than the principles underpinning the current standards. The Institute has recommended that APRA include a clear, overarching philosophy for the revised capital standard to help guide insurers on items that are not explicitly covered.

### Operational risk capital charge (ORCC)

APRA has stated that they wish to increase the focus on operational risk, and has proposed formulae for the ORCC (which differ slightly for general insurers and life insurers). We understand that this approach is based on similar formulae being adopted under Solvency II.

The Institute supports the introduction of an explicit ORCC as this should encourage greater attention on operational risks and encourage companies to take action to effectively manage these risks, therefore reducing the ORCC. However, the Institute is concerned that a formula-based approach to operational risk will

introduce conflict between APRA's stated aims of increased focus on operational risk and increased risk sensitivity.

In addition, the proposed formulae could produce irrational outcomes in a number of situations. The 10% absolute change item in particular could also lead to increased volatility in the ORCC depending on whether or not the 10% movement is breached. For example, 9.9% annual growth throughout the year reaching 10.1% on the valuation date will lead to a sudden 10% increase in the ORCC.

Finally, it is not clear which operational risks the formula is designed to cover, so it would be very difficult for an actuary to determine when additional operational risk capital should be held.

For these reasons, the Institute has recommended to APRA that the capital requirements of operational risk should be based on a more qualitative approach, which is reviewed as part of the Supervisory Adjustment.

### **Supervisory adjustment**

We understand that APRA is of the view that if the prescribed capital amount does not adequately account for all of an insurer's risks, a Supervisory Adjustment may be required to further strengthen the insurer's capital base. The Supervisory Adjustment could be either an increment to the total capital requirement or a requirement to increase the quality of existing capital levels.

The Institute believes clear communication of the current and future expected capital position to internal stakeholders (Board, Shareholders and Senior Management) is important, and a degree of capital stability is desirable. As such, the Institute has recommended that the process and framework APRA follows to determine its Supervisory Adjustment is clear, well-defined, widely communicated and allows time for discussions to be held between the insurer and APRA well before any Supervisory Adjustment is required.

### **Risk-free discount rates (for Australian denominated liabilities)**

There are a broad range of views across the profession as to the appropriate discount rate to use for capital purposes. APRA regards the zero coupon spot yield curve of Commonwealth Government Securities (CGS) as the best proxy for risk-free rates, and there are a number of practical advantages to this:

- they have limited credit risk;
- they are traded in an active market (and therefore they are generally readily realisable and liquid); and
- they match the term and currency of short and medium-term liability cash flows.

The Institute's view is that a 'one size fits all' approach is not necessarily appropriate as it will generate anomalous outcomes for some products. For example, the use of CGS will lead to an increase in the capital requirements for lifetime and term annuities. This will, in turn, lead to increased prices as the providers either pass on the costs or exit the market, reducing the level of competition. This is not in the interests of consumers.

In addition, the Institute has concerns over the applicability of CGS in some circumstances. For example:

- There are a number of inconsistencies with the capital requirements of banks. For example, ADIs value their deposits at face value, even where there are guaranteed interest rates attached. Life insurers will have to hold additional capital for identical products.

- For longer term liabilities, CGS do not have a sufficient range of terms or sufficient volumes to support matching of the liabilities,
- There has been significant debate as to the behaviour of CGS assets when market conditions are volatile and stressed. For example in some European jurisdictions there were periods during the GFC where corporate bond yields were lower than those on sovereign bonds which indicates that there was a flight to corporate bonds (i.e. the opposite of the situation in Australia during the same period).
- Where insurance liabilities are particularly long-tail and so extend beyond the range of terms of CGS assets, many argue that the discount rate used for valuation purposes should be increased for illiquidity reasons.

The Institute agrees that for the majority of Australian denominated liabilities, the risk-free discount rate for capital purposes should be the zero coupon spot yield curve of CGS. However, for products where the use of the zero coupon spot yield curve for CGS would lead to inappropriate outcomes, such as lifetime annuities and term annuities in particular, the Institute has proposed that, APRA should allow the use of a swap curve less an adjustment for credit risk, with an addition for a liquidity premium to the value of the liability or adjusted interest rate of the swap.

## **Life insurance specific issues**

### **Role of the Appointed Actuary for life insurers**

There are concerns across life insurers that the APRA proposals weaken the role of the Appointed Actuary (AA), as APRA has removed the AA's discretion from a number of key aspects of the basis, including the duration of losses that occur before allowing for repricing, the margins for lapse risk and the margins for expense risk. The Institute has stated to APRA that the appropriate exercise of these discretions is a strength of the current standards, as it allows the AA to consider appropriately the individual aspects of the company.

## **General insurance specific issues**

### **1. Insurance risk charges**

The proposed changes to insurance risk charges include:

- removal of distinction between facultative and treaty reinsurance;
- travel ('Low' to 'Medium') and Lenders Mortgage Insurance ('Medium' to 'High') moved up;
- appointed Actuaries to determine which category 'other' classes belong to (rather than the insurer).

These changes are relatively minor; however the Institute has requested greater transparency from APRA into the derivation of the insurance risk factors. Although we have been using similar factors for a number of years, familiarity with their use does not equate to an understanding of the analysis from which they were derived.

The Institute has also suggested that APRA provide additional clarity into how the insurance risk charges interact with other risk charges. In particular, this lack of clarity around where the insurance risk charge 'ends' and the horizontal component of the new insurance concentration risk charge 'begins' (and similarly for the inflation asset risk charge) raises the question of whether there is potential for double-counting.



## 2. Asset risk charges

Replacing the existing 'factor times asset value' approach are a series of eight balance sheet stress tests. The eight 'stand alone' results are then combined using an APRA specified correlation matrix to reflect the imperfect correlation between the stresses, to give a 'diversified asset risk charge'. The eight stresses focus on:

1. Movements in real discount rates.
2. Movements in inflation rates.
3. Currency exposure.
4. Volatility exposure via derivatives.
5. Movements in dividend yields for listed equity assets and exposure to unlisted equity assets.
6. Movements in rental yields for property assets.
7. Credit spreads on interest bearing assets.
8. Default risk on other assets (mostly reinsurance recoveries as for current situation).

The first two tests are effectively a 'mismatching risk' stress test. The current specification of these two stress tests has the interesting outcome that for any given set of inflation linked general insurance liabilities, the capital charge for being 100% invested in cash or 100% invested in modified duration matching Commonwealth Government Securities is very similar.

The Institute has a number of concerns with these new asset risk charges including:

- The inflation risk asset charge appears to be the main driver of increased minimum capital requirements. The Institute is concerned that inflation risk is being double counted by virtue of already being allowed for in the insurance risk charges – especially for long-tail classes and has asked for clarification. The Institute has also recommended that the real interest rate risk and inflation risk charge calculations be combined into a single calculation (i.e. a stress test of nominal yields).
- The complexity of the calculations – at present, the proposal is for assets and liabilities to be re-valued at two alternative yields (higher and lower). For the asset calculation this could cause significant logistic problems for insurers whose fixed interest portfolio is shared across multiple fund managers. The Institute has recommended that a simpler approach be taken based on a multiple of Modified Duration or Discounted Mean Term.

## 3. Insurance concentration risk charges

The changes to insurance concentration risk charges (i.e. what is currently known as Maximum Event Retention or 'MER') are also substantive:

- clarification of a 'whole of portfolio' approach to event losses (as opposed to 'single site, single peril' – previous requirements were somewhat ambiguous);
- introduction of both 'vertical' (1 in 200 year) and 'horizontal' (1 in 6 year/1 in 10 year) event loss components for property exposures (no horizontal component for non-property);
- alignment of vertical component of the insurance concentration risk to the target 1 in 200 year level (i.e. 99.5% probability of adequacy) for regulatory capital generally (previously 1 in 250 year or 99.6% was used);
- non-property accumulations that are at least 70% of property accumulations (or vice versa) to be combined using a 'square root of sum of squares approach';

The consideration of (4x) 1 in 6 year and (3x) 1 in 10 year losses has already ignited debate as existing catastrophe modelling output has been focussed on the 1 in 250 year outcomes only and hail storms (unlikely to be a 1 in 200/250 year outcome) are not currently captured by some existing catastrophe models. Arguably there may be double counting with the horizontal component and the ordinary insurance risk charges. The 70% materiality threshold for combining (or not) property and non-property concentrations may give rise to some unintended incentives (e.g. make the larger concentration just a bit bigger to avoid having to include the smaller).

Finally there is also a correlated sum approach taken to the combination of the diversified asset risk charge and the total insurance risk charge (including concentration risk charges). APRA term this the 'aggregation benefit'. This appears to provide little in the way of offsetting (see survey results below).

The Institute is keen to ensure (as above) that horizontal accumulations are not double counted and that 'gaming' of the 70% accumulation threshold for property/non-property insurers is not incentivised.

## Estimated impact of proposed changes on small/medium general insurers

At the recent Gold Coast GI conference, Finity Consulting presented some preliminary results of a survey of the QIS results for 33 small/medium insurers/reinsurers (comprising around 30% of the industry by premium and Minimum Capital Requirements (MCR)). The overall survey results included:

- all survey participants faced an increase in MCR with average increase of around 60%;
- the ratio of APRA capital to MCR (the 'capital coverage ratio') for the surveyed participants fell by 70% of MCR largely as a result of higher MCRs.

The increase in MCR was dominated by:

- the insurance concentration risk ('MER') in respect of horizontal accumulations and the 70% threshold for combined property/non-property MERs;
- inflation asset risk charges;
- operational risk charges;

with the aggregation benefit providing little relief (8%).

## What next?

APRA has confirmed that it is intending to release draft prudential standards before the end of 2010. The taskforces will continue to liaise with APRA on a regular basis to feed back key issues and questions raised across the industry. If you have any questions or comments please let us know.

We wish to thank all those involved for their contribution to date. ▲

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# 17th General Insurance Seminar

## Risk and Reward



Institute of Actuaries of Australia

7 – 10 November 2010 • Sheraton Mirage, Gold Coast

**The Institute's 17th General Insurance Seminar kicked off in style with a dinner poolside at the Sheraton Mirage on the Gold Coast.**

On Monday, the Seminar opened with a keynote address from APRA member Ian Laughlin, who focused on the importance of risk management, particularly at insurers' Board level and highlighted the need for insurers to understand their risk appetites. Ian was followed by Siddharth Parameswaran who asked whether the good times can return in light of recent performance. The challenges he saw facing the various classes of business included increased distribution of insurance via the internet, the cost of natural perils and continued rate reductions in commercial markets alongside the threat of contestable platforms.

The 40 concurrent sessions over the next three days then began with contributions being made in areas of pricing and distribution, risk management, claims and reserving and general actuarial practice. One of the concurrent sessions held on Monday afternoon was 'Bootstrap Modelling: Beyond the Basics' by Mark Shapland. Despite the title which may suggest highly technical content with lots of formulae and Greek alphabets, it was easily digestible and provided good insights to the challenges commonly faced in practice when applying the Bootstrap technique and how to deal with them. The concepts can be extended to stochastic modelling



Ian Laughlin



Siddharth Parameswaran

in general – ensuring reasonableness and relevance are fundamental to all modelling attempts. The paper and presentation were a pleasant balance of practical relevance and academic rigour.

Monday's sessions concluded with a plenary featuring a panel of insurance executives each discussing their challenges relating to distribution. The panel included Anthony Day (Suncorp), Simon Lindsay (Progressive) and Vivek Bhatia (Wesfarmers). Vivek noted that the traditional oligopoly structure was being challenged, particularly with the uprise of social networking sites and the emergence of retail distribution of insurance in Australia.

Monday evening saw 250 actuaries board a bus to travel to Seaworld. The weather held up and delegates were delighted to dine alongside the dolphins at SeaWorld, although a number of people seemed to be somewhat disturbed to be eating seafood in such close proximity. Entertainment was provided in the form of a dolphin show followed by a close encounter with these mammals for two of our delegates. The party kicked on for a number of delegates after dinner, Melinda Howes and David Rowell led the way on the dance floor, being mistaken in some quarters for Pulp Fiction's Uma Thurman and John Travolta. A large group from a certain large unnamed global insurer claimed to be the last men standing at the bar at 2.30am.

The Tuesday morning plenary session was comprised of two panels. The first panel focused on the meaning of ERM in the GI space and we were all eager to hear from Dan Tess (Lumley), Jason Brown

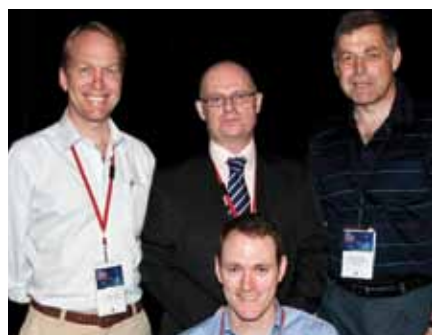


Plenary Opening





Sea World



Dan Tess, Jason Brown, Keith Tomkins, Bruce Lambert

(QBE) and Keith Tomkins (Zurich). Dan acknowledged that ERM is not simple by any means, and introduced a control cycle concept to manage this. Jason reminded insurers not to only focus on what could go wrong, but also to look for the opportunities, think about emerging risks, ensure organisational agility and understand risk tolerance in order to put the “enterprise” into ERM. Keith then followed up with some examples on how risk management was put into practice.

The second panel featured three actuaries – Rick Shaw, Joyce Tong and Adam Driussi – who discussed their work in ‘non-traditional’ areas. Rick shared his experiences of working in Yemen and Bermuda (although no doubt some members of the audience were perturbed by a bizarre video during the presentation which turned out to be artwork produced by Rick’s wife!) We learnt not to believe rigidly in models, but to combine judgment and instinct to make sense of complex systems. Delegates were inspired by Joyce who spoke about her experience working in microinsurance in India for a not-for-profit organisation, Uplift, and how their focus was on outreach and utilisation and not on loss ratios and profit. Adam spoke about his work for non-insurers and how analytics can be applied on banking data to understand customer behaviour better.



Rick Shaw, Joyce Tong, Adam Driussi

Following the inspiring plenary session on the application of actuarial skills in wider fields, the concurrent sessions followed on including a presentation from Lisa Simpson and Rod Baulding

(a brave accountant) on the latest International Accounting Standards. The presentation gave a good high level summary of the Exposure Draft and the implications to the general insurers in Australia. It was interesting to note the International Accounting Standards took 13 years in making. To put it in perspective, it was first discussed when John Howard had just finished his first term and the first generation iPod was marveled upon. For those who were interested in finer details of the Exposure Draft, the session followed on by Bob Buchanan discussed the commentary process on the Exposure Draft and the key issues noted to date.



Rod Baulding, Bob Buchanan and Lisa Simpson



Bozena Hinton and Chris Latham

After an eventful Monday night, most delegates were attracted to their bed or the pool for the afternoon off. The more adventurous chose golf, cooking or kayaking, with Chris Latham proving to be the Institute’s own Masterchef.

All delegates donned their best rock ‘n roll attire for the final night: business cards, inhibitions and dignity were all left at the hotel. Marilyn Monroe proved a crowd favourite, with John De Ravenous getting plenty of attention. The impersonators were not always convincing, however, with Matt Ralph noting that “it was interesting to see what Buddy Holly would have looked like if he had been 30 years older and weighed 40 kilos more.” As the night wore



Marilyn serenades the Gala Dinner delegates





Andrew Smith



David Maneval



Francis Beens



Julie Simms



Lucy Simpson



Laurel Kong



Greg Moran and Peter McCarthy



Jefferson Gibbs, Blair Nicholls, Noeline Woof, James Goodchild, Helen Rowell, Estelle Pearson, Tim Spicer



Benoit Laganier and Yan Zhao



Ian Frew, Paul Driessen and Keith Forster



Greg Taylor



Nelson Henwood



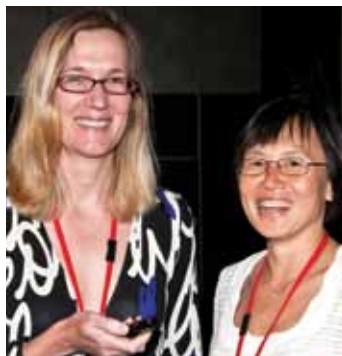
Tim Andrews



John DeRavin and Ash Evans



Elaine Collins and Catherine Dube



Estelle Pearson and Win-Li Toh



Andy White and Karl Marshall



Rosie Winn and Natalie Spearing



Melinda Howes and Bozena Hinton





Aaron Cutter

on, the dance floor heated up. The Aaron Cutter Experience had come to town, and nobody was left disappointed. Many joined in with what can only be described as a radical interpretation of the word 'dancing'. Daniel Smith impressed all with his enthusiasm, although nobody had told him that air-guitar is not dancing. The fun had by all was evidenced in the sorry looks the next morning, as well as the number of attendees in Wednesday's first concurrent session despite the late start.

One of the themes from Wednesday concurrent sessions was the funding of catastrophes, with two presentations on the funding of these losses. The presentation 'An Approach to Pricing Natural Perils' by Tim Andrews, David McNab and Ada Liu covered the general concepts of pricing natural perils for insured losses and the expanding available data source, other than the insurer's own experience. Whereas the presentation 'Natural Disasters in Australia: Issues of Funding and Insurance' by Chris Latham, Peter McCourt and Chris Larkin examined Australia's current funding approach of losses



Gala Dinner entertainment

(in particular, uninsured losses) arising from catastrophes. It is interesting to note a significant portion of the funding of the uninsured losses from the 2006 Cyclone Larry and 2009 Victorian bushfires was from the Government and donations and purely on an ad-hoc basis.

The presentation went further in examining formal Government schemes outside Australia and the features of such a Government scheme if it were set up in Australia. The final plenary session centred around the proposed APRA regulatory changes. The panel discussion was preceded by a short introduction to some of the key issues from the perspective of APRA (Helen Rowell), and the perspective of insurers and actuaries (Tim Spicer, Blair Nicholls, James Goodchild and Estelle Pearson). Speakers expressed concern that the changes in regulation – and increased compliance effort needed – was not necessarily achieving the goals intended. There were more questions than could be answered, leaving delegates with much food for thought.



All in all, the general insurance seminar had been a great success with high quality presentations on a wide variety of interesting topics. The Organising Committee (Andrew Smith – Chair, Ada Liu, David Koob, Ruth Lisha, Melissa Yan, Susan Ley, Win-Li Toh, Emma Simonson and Sarah Hodgkinson) would like to thank all those who attended and participated in this event. Check out the papers, presentations and audio materials at the conference website at <http://www.actuaries.asn.au/GIS2010/Program/ProgramSnapshot.aspx>. Papers are also being considered for the Taylor Fry prize and will be announced in due course.



Gala Dinner

Events like these are only possible with the support of our sponsors. The organising committee would like to thank PwC, DW Simpson, Insureware, Taylor Fry and KPMG for their support of this event. ▲

#### GI Seminar Organising Committee



Organising Committee: L – R: Melissa Yan, Susan Ley, David Koob, Win-Li Toh, Andrew Smith, Sarah Hodgkinson, Emma Simonson and Ada Lui

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Morning tea



March



April



May

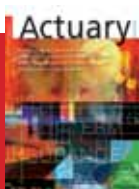


June

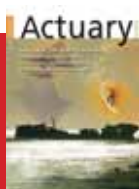
ARTICLE	EDITION	MONTH	PAGE(S)	TITLE	AUTHOR'S SURNAME	FIRST NAME	ARTICLE TYPE
Feature Articles	147	March	8,9	Coffee with the President	Robertson-Hodder	Catherine	Feature
	147	March	16,17	Salary Linked Home Finance – Funding Homes and Pensions	Asher	Anthony	Feature
	147	March	20,21	Step Up Program	Robertson-Hodder / Karp	Catherine / Hugh	Feature
	147	March	29	Superannuation System Review – Disclosure of Fees and Costs	Wickham	Darren	Feature
	147	March	30	The Retrospection of a Future Actuary	Marcus	Dean	Feature
	148	April	4,5	How to Make a Superannuation Fund Shariah Compliant	Yeo	Ling Mien	Feature
	148	April	11,12,13,14	In the Firing Line: Actuarial Educators and Education	Roberts	Leigh	Feature
	148	April	20,21	Interview with New Actuaries	Lyon	Jenny	Feature
	148	April	26,27	Step Up Program – Interview with Eric McNamara	Wood	Matthew	Feature
	149	May	4,5	Actuarial Developments in New Zealand	Smith	John	Feature
	149	May	11	Professionalism and Leadership	Dawood / Mulcare	Fatima / Martin	Feature
	149	May	16,17,18,19	International Activities – Overview and Representatives	Rowley / Purves	Fred / Julia	Feature
	150	June	4,5	Builders Warranty Insurance to BWI or not to BWI?	Jewell	Malcolm	Feature
	150	June	11,12,13	Is Something Happening in South Africa?	Budlar	Regard	Postcard
	150	June	18,19	Home Equity Release – An Untapped Market	Smith	John	Feature
	150	June	20,21	Degrees in 'Actuarial Science'	Fitzherbert	Richard	Feature
	150	June	24,25,26	A Tale of Three Cities – Canberra, Melbourne and Sydney	Higgins / Hayes / Wood	Tim / Genevieve / Matthew	Postcard
	151	July	13,14,15	Public Policy and the Institute	Rafe	Barry	Feature
	151	July	16,17,18,19	A Better Deal for Disabled Australians – The National Disability Insurance Scheme (NDIS)	Cohen / Leug	Jonathan / Corinna	Feature
	151	July	4,5	Postcard from Cambridge	Meyricke	Ramona	Postcard
	151	July	20,21	Critical Illness – Experiences from New Zealand	Smith	John	Feature
	151	July	25	Budget Lock-Up	Rice	Michael	Feature
	152	August	4,5	Full Speed Ahead – Online Insurance	Ho	Kitty	Feature
	152	August	12,13	Design Superannuation Caps Like Baseball Caps	Walker	Brent	Feature
	152	August	14,15	ERM – We're Going to Need a Bigger Boat	Ingram / Underwood	Dave / Alice	Feature
	152	August	16,17	Don't Be the Frog in the Frying Pan	Hickling	Martin	Feature
	152	August	20,21	It's Super in NZ	Smith	John	Feature
	152	August	24,25	The Talent Finders: Actuaries Go Back to School	Lessing	Julia	Feature
	152	August	26,27	US Health Reform: What's Happened, and Does it Matter to Australia?	Reid	Jamie	Feature
	153	September	4,5	Home Lending Credit Quality – Fresh Insights	Gorst	Tim	Feature
	153	September	16,17,18,19	Dysfunctional Insurance Systems	Ferris	Shauna	Feature
	153	September	20,21	A Cap to Cover Retirement Headaches	Walker	Brent	Feature
	153	September	25,26	Riding the Wave of the Cycle ... ERM	Ingram / Underwood	Dave / Alice	Feature
	153	September	28,29	CPD Opportunities in New Zealand	Green	Charmaine	Feature
	154	October	4,5	A Punter's Guide to the Spring Racing Carnival	Woolfrey	Chris	Feature
	154	October	12,13,14	Variable Annuities in Australia	Tuzovic	Ismar	Feature
	154	October	24,25	Work Ahead – So You Know What You Mean by Work?	White	Chris	Feature
	154	October	26,27	Actuarial Salaries	Lyon	Jenny	Feature
	155	November	4,5	More Than a Beautiful Mind – Guy Horton	Teh	Sulyn	Feature
	155	November	18,19,20,21	Protection Strategies: Analysis of Their Impacts on Market Stability	Fisher / Qin	Andrew / Charles	Feature
	155	November	25	Dealing With the Environment	Green	Jill	Feature
	155	November	26,27	The Impact of Liability Profile on Investment Strategy for Insurers	Kapel / Miller / Paton	Anton / Graeme / Rob	Feature
	155	November	30,31	Why Work in New Zealand?	Newfield	Paul	Feature
	156	December	4,5	A Better Deal for Disabled Australians	Harris	Bruce	Feature
	156	December	8,9,10	The Canterbury Earthquake	Beauchamp	Richard	Feature
	156	December	11,12,13	Capital Standards	Spicer / Grubb	Tim / Ian	Feature
	156	December	20,21	Measuring and Applying Equity Premiums	Daly	Robert	Feature
	156	December	24,25	Health Reforms in Australia	Walker	Brent	Feature
Notices	147	March	5	Congratulations to Our New Fellows			Notice
	147	March	6	Institute Prizewinners			Notice
	147	March	18	Congratulations – Bob Altig von Geusau Memorial Prize			Notice
	147	March	19	Understanding Actuarial Management: the actuarial control cycle – 2nd Edition			Notice
	147	March	26	Council Changes			Notice
	149	May	12	Congratulation to Our New Actuaries			Notice
	149	May	28	Understanding Actuarial Management: the actuarial control cycle – 2nd Edition			Notice
	149	May	29	Thank You – To Our Volunteers, Helpers and Supporters	Robertson-Hodder	Catherine	Notice
	150	June	28	Actuary of the Year – Call for Nominations			Notice
	151	July	12	Congratulations to Our New Actuaries			Notice
	151	July	12	New Appointment – Kelvin Russell			Notice
	151	July	28	Ian Laughlin – APRA Appointment			Notice
	152	August	28	2010 Melville Financial Services Prize			Notice
	152	August	28	New Appointment – Jennifer Burns			Notice
	153	September	14	Congratulations to Our New Fellows and Actuaries			Notice
	153	September	32	New Look Website	Jones	Peter	Notice
	153	September	32	Actuary of the Year – Fred Rowley			Notice
	154	October	15	It's What You Asked For – Understanding Changes to Your Membership			Notice
	155	November	13	Congratulations to Our New Fellows and Actuaries			Notice
	155	November	15	SOA Award – Fred Rowley			Notice
	156	December	26	Council Changes	Peters / Williamson	Anne / Kylie	Notice
	156	December	27	Congratulations to Maggie Lee			Notice
	156	December	27	Student Columns for 2011	Millar	David	Notice



July



August



September



October



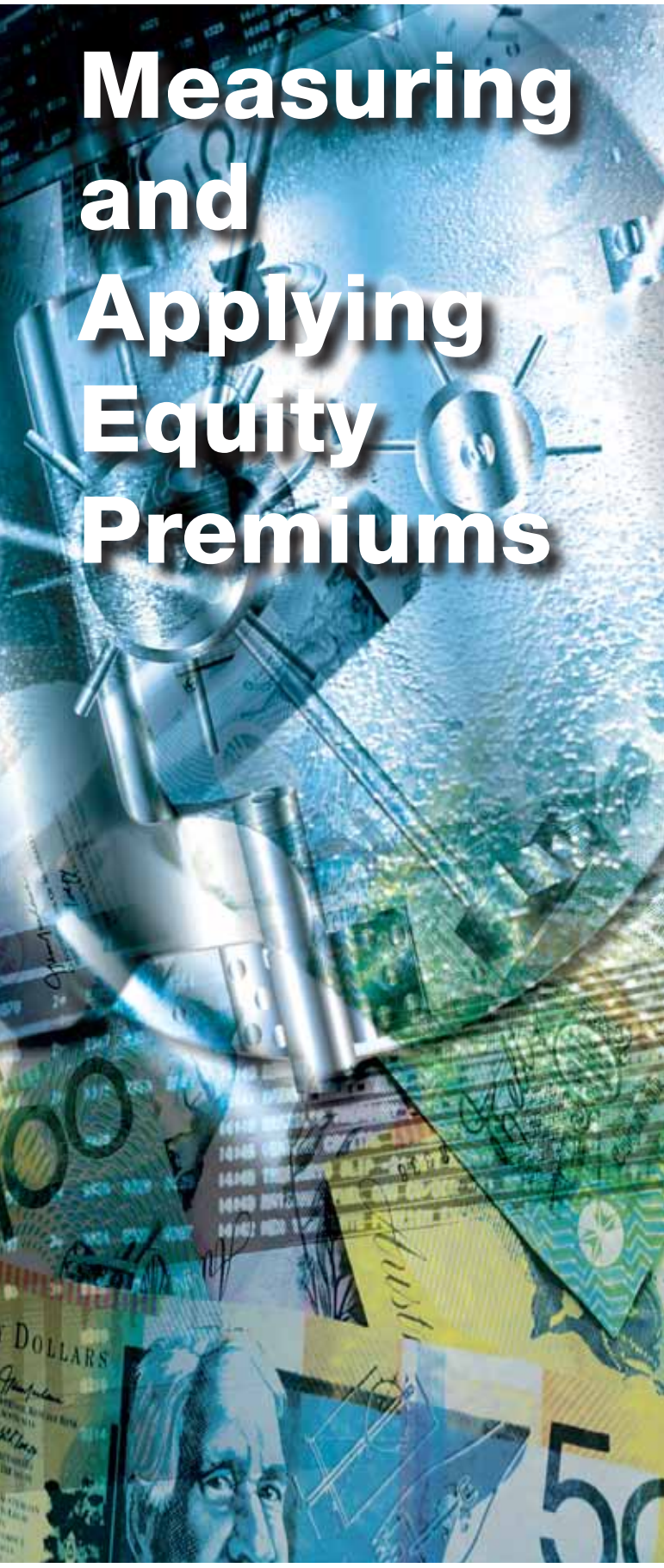
November



December

ARTICLE	EDITION	MONTH	PAGE(S)	TITLE	AUTHOR'S SURNAME	FIRST NAME	ARTICLE TYPE
<b>Reports</b>	148	April	29	Mutual Recognition Agreement between the Institute of Actuaries of Australia and the Actuarial Society of South Africa	Lewis	Chris	Report
	149	May	25	Update from the General Insurance Practice Committee	Gomes	Kevin	Report
	151	July	24	LIWMP Update	Counsell	Brendan	Report
	154	October	16,17	Member Services and Educator Implementation Group – Wrap Up	Dawood	Fatima	Report
<b>Actuary Unearthed</b>	147	March	7	Actuary Unearthed	Rafe	Barry	Actuary Unearthed
	148	April	7	Actuary Unearthed	Beens	Francis	Actuary Unearthed
	149	May	7	Actuary Unearthed	Poon	Jacky	Actuary Unearthed
	150	June	7	Actuary Unearthed	Brownfield	Christine	Actuary Unearthed
	151	July	7	Actuary Unearthed	Merten	Alan	Actuary Unearthed
	152	August	11	Actuary Unearthed	Berry	Mark	Actuary Unearthed
	153	September	11	Actuary Unearthed	Terblanche	Wilma	Actuary Unearthed
	154	October	11	Actuary Unearthed	Wilson	Ashley	Actuary Unearthed
	155	November	7	Actuary Unearthed	Lessing	Julia	Actuary Unearthed
	156	December	7	Actuary Unearthed	Lin	Shannon	Actuary Unearthed
<b>Event Reports</b>	147	March	4,5	Professionalism Course February 2010	Pike	Louise	Event Report
	147	March	12,13,14,15	Accident Compensation Seminar 2009	Organising Committee		Event Report
	148	April	25	Retired Actuaries Group, Sydney (RAGS)	Jones	Edward	Event Report
	149	May	12	Professionalism Course – April 2010	Tang	Angela	Event Report
	149	May	14,15	United in Diversity – 29th International Congress of Actuaries	Shepherd	John	Event Report
	149	May	20	YAP – (Re-) introducing the Young Actuaries Program	Lee	Keri	Event Report
	149	May	26	CAP Course March 2010	Tan	Joshua	Event Report
	150	June	14,5,16,17	5th Financial Services Forum – Renovating the Financial System	Organising Committee		Event Report
	151	July	10,11	Professionalism Course – Melbourne	MacKessack	Andrew	Event Report
	151	July	27	Young Actuaries Program – Networking Exposed	Li	Nick	Event Report
	153	September	12,13	Professionalism Course September 2010	Ahluwalia	Ashish	Event Report
	154	October	11	Banking Insights	Gribble	Jules	Event Report
	154	October	28	ERM 2010 – It's All About Opportunity	DeRavin / Smith / Turner / Wilmot / RMPC Events Cttee	John / Bernard / Mark / Nadine	Event Report
	154	October	30	CAP Course	Tam	Revsion	Event Report
	155	November	12	Professionalism Course	Zubac	Blanka	Event Report
	155	November	14,15	Step Up Program – Inaugural Alumni Event	Yu	Gloria	Event Report
	155	November	28,29	Longevity 6: Sixth International Longevity Risk and Capital Markets Solutions Conference	Blake / Sherris	David / Mike	Event Report
	156	December	14,15,16,17	Report of the 17th General Insurance Seminar – Risk and Reward	Organising Committee		Event Report
	156	December	30	Actuarial Women's Network	Marwick	Abigail	Event Report
<b>Event Promotions</b>	147	March	27	5th Financial Services Forum – Renovating the Financial System			Event Promotion
	148	April	15,16,17,18	5th Financial Services Forum – Renovating the Financial System			Event Promotion
	149	May	21	17th General Insurance Seminar – Risk and Reward – Call for Papers and Working Groups			Event Promotion
	152	August	11	ERM 2010 Seminar – It's All About Opportunity			Event Promotion
	152	August	19	17th General Insurance Seminar – Risk and Reward			Event Promotion
	153	September	11	17th General Insurance Seminar – Risk and Reward			Event Promotion
	153	September	15	Super Policy Forum: Projecting the Future – How Much is My Super Really Worth?			Event Promotion
	153	September	27	Biennial Convention 2011 – Beyond the Mandate – Call for Papers			Event Promotion
	154	October	18,19,20,21	17th General Insurance Seminar – Risk and Reward			Event Promotion
	155	November	11	Biennial Convention 2011 – Beyond the Mandate			Event Promotion
	156	December	28,29	Biennial Convention 2011 – Beyond the Mandate			Event Promotion
<b>Letters</b>	147	March	31	Letters – Peter Carroll, Andrew Vallner, Peter Vinson, Iain Ross, Robert Kay, Richard Fitzherbert, Mark Baxter	Carroll / Vallner / Vinson / Ross Kay / Fitzherbert / Baxter	Peter / Andrew / Peter / Iain Robert / Richard / Mark	Letters
	149	May	29	Letter – Rod Berry	Berry	Rod	Letter
	155	November	33	Letter – Anne Peters	Peters	Anne	Letter
	156	December	34	Letter – Anne Peters	Peters	Anne	Letter
<b>Obituaries</b>	154	October	32,33	Galfrid Leslie 'Tig' Melville	Roach / Trahair	Owen / Tim	Obituary
	156	December	32	Nick Renton	Rogers	Graham	Obituary
<b>Student Columns</b>	148	April	26	Student Column – University of New South Wales	Yip	Timothy	Student Column
	149	May	28	Student Column – University of Melbourne	Tam	Melissa	Student Column
	150	June	29	Student Column – Australian National University	Sardana / Huynh	Anna / Alex	Student Column
	151	July	29	Student Column – Macquarie University	Artinian / Zhong / Bonarius	Alex / Kevin / Nathan	Student Column
	152	August	29	Student Column – University of New South Wales	Sun	Jessica	Student Column
	153	September	31	Student Column – University of Melbourne	Hong	Brendan	Student Column
	154	October	31	Student Column – Curtin University	Isaac	Arun	Student Column
	155	November	32	Student Column – Macquarie University	Hoang	Alan	Student Column
<b>Regular Columns</b>							
Ask Gae			(March, May, July, September, November)		Robinson	Gae	Ask Gae
Editorial					Robertson-Hodder / Collier	Catherine / James	Editorial
Education Update					Latham	Philip	Education Update
In the Margin					Hayes	Genevieve	In the Margin
More than Maths					Mulcare	Martin	More than Maths
CEO's Column					Howes	Melinda	CEO Column
Research Developments			(March, April, May)		Latham / Murnain	Chris / Ron	Research Update
The Actuarial Pulse							The Actuarial Pulse
President's Column			(March – November)		Hinton	Bozena	President's Column





# Measuring and Applying Equity Premiums

The equity premium or equity risk premium has been a source of interest, and sometimes controversy, for actuaries and financial analysts over many years. In 1995, when I first arrived in Australia, I recall many long discussions as to why equity premiums were generally considered higher in Australia than the UK. Some of the reasons put forward were the historical record, the significant influence of extractive industries in the Australian equity market and the taxation system. It was even suggested that it could just be a matter of convention. Whatever the reasons, these differences have remained with the equity premiums used in Australian reported embedded values still exceeding those used in the UK.

This topic has been a subject of much interest for the equity risk premium research group over the last six months and culminated in the presentation of a paper to the financial services forum. We quickly realised that the first question to answer was why there was interest in the equity premium in the first place. We arrived at a number of different reasons and these were summarised into the following broad categories:

- To value assets by discounting uncertain future cash flows at a risk discount rate. The risk discount rate incorporates an estimate of the equity premium.
- To construct an investment portfolio that has a mixture of fixed interest assets and equity assets.
- To determine the annual funding rate for a pension liability.

We noted that the valuation use was less common nowadays. Financial assets can be valued more effectively by using a risk free discount rate and implicit market observed volatility, which does not require an equity premium to be estimated. However, there are still many cases where there is a need to adjust for risk when considering uncertain future cash flows. This can be done either by incorporating explicit risk charges in the cash flows, or by using an estimate of the equity premium.

The other primary use we considered is the construction of an investment portfolio. Estimates of equity risk premiums are used in the Sharpe ratio to compare the risk and return of different asset classes. Similarly Markowitz's modern portfolio theory requires an estimate of the equity risk premium (as well as estimates of standard deviation and covariance). Actuaries use equity risk premiums for stochastic valuations, where possible future asset and liability cash-flows are compared and the most appropriate funding or investment strategy selected.

We thought the paper by Fernandez (2009)<sup>1</sup> was insightful and relevant to our research, particularly his discussion of four different concepts for the equity risk premium. The first concept was of the historical equity premium, which is the actual observed excess return of equities over risk free bonds. However, we noted that this measure is not constant with different historical time periods, different investment horizons, and indeed, different equity markets producing very different values.

The second concept that Fernandez described was the expected equity premium, which is the assumed value of the equity premium

when used in a model. This could be based on the historical equity premium but may need to be adapted based on assumptions about the business cycle, current price inflation and other economic factors. Given the assumptions used to estimate the expected equity premium, a financial modeller must accept that a wide range of future equity premiums may result from any given current economic state.

The two other concepts considered by Fernandez are the required equity premium, which is the equity return required given the risk appetite of the market investor, and the implied equity premium, which is the equity premium based on current dividend yields and assumptions about their real growth. Note that the required equity premium may never be observed in practice, as investors are often disappointed by their decisions. Similarly, the implied premium reflects current market conditions and expectations, and these may be in a constant state of change.

Thinking back to my own experiences in the late 1990s, the equity premium was required for embedded value calculations, so, presumably, the required equity premium was the item to be estimated. This is because the embedded value was intended to help investors value life companies based on current market conditions (e.g. the risk free rate was based on current government bond yields). However, most of the discussions centred on the historical equity premium, presumably on the basis that this was the best estimate of the investors' view. One wonders, though, looking back, whether this was simply the easiest way to find the equity premium, as opposed to the most appropriate reference point.

This makes me reflect on the use of equity premiums in financial models. In many ways, financial models are our attempt to make sense of what is fundamentally uncertain. Although a well-constructed financial model provides great insight into these uncertainties, it rarely helps to resolve them. For instance, a high quality stochastic model will provide a pension fund investor with the most appropriate equity investment and will dismiss certain investment policies as fundamentally flawed. Despite these benefits, it does not guarantee that a certain funding level will be sufficient. Hence, knowing the uncertainty in the financial models and in the estimates of key parameters is essential in understanding the risks being faced.

This is brought out in our paper, when we discuss estimation error around the historical equity premium. Taking the simplest case, where the equity premium is assumed to be constant over time, the error in a historical estimate may be 3% around the mean value. This means a historical estimate that suggests a 5% equity premium could also plausibly explain a 2% to 8% equity premium. In addition, regardless of this past value the additional error in the forecast of equity value over 25 years could be 100% or more. This level of uncertainty needs to be carefully considered in any valuation, forecast or investment recommendation.

These estimation errors arise in the case where a constant equity premium is assumed. If, instead, it is accepted that equity premiums vary over time, then the factors that cause the premium to vary need

The research group is keen to conduct a survey of actuaries to understand the views of the membership as to the level of equity premium, the uncertainties that surround it and the use to which it is put.

to be ascertained and also modelled. Then an estimate must be made of the current state of these factors and their likely trend over the period of the forecast. Such additional factors may reduce the statistical variation but there may be some difficulties in justifying the introduction of additional complicating factors.

The difficulty in estimating the equity premium was brought out in the observed estimates of equity premiums from the literature. Fernandez observed estimates that ranged from 3% to 10% and that the average estimate had reduced from 8.4% in 1990 to 5.7% in 2009.

Our research into the equity premium was rather sobering in that an accurate estimate, or even an estimation methodology, of such a fundamental quantity in finance and investments was almost impossible to find. The recent global financial crisis demonstrates the inherent uncertainty in investments with sovereign investments performing significantly better than other investments over the period of the crisis. Although such returns may well prove atypical, it serves to demonstrate the inherent uncertainty that we face. In the case of such uncertainty, it is comforting to rely on rules of thumbs (e.g. house prices never fall over the long-term or equities always outperform bonds over the medium term), but the reality is much more complex than such rules indicate.

The research group is keen to conduct a survey of actuaries to understand the views of the membership as to the level of equity premium, the uncertainties that surround it and the use to which it is put. We hope that such a survey will reduce the range of estimates that actuaries may use.

Our research suggests that any projections or valuations based on the equity premium should be accompanied by an explanation of the inherent uncertainty in such calculations. It would be prudent to disclose this to any users of the information.

In closing, I would like to thank my colleagues on the equity research group for the interesting discussions over the year and the good humour in attempting to resolve what may be an intractable puzzle. I would recommend such research groups to actuaries keen to develop their thinking and research skills. ▲

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<sup>1</sup> Fernandez, P, 2009, *The Equity Premium in 150 Textbooks*, Social Science Research Network eLibrary.





### The Numbers of the Beast (AA154 Solution)

666 can be expressed as the sum of its digits plus the sum of the cubes of its digits. That is,  $666 = 6 + 6 + 6 + 6^3 + 6^3 + 6^3$ . However, 666 is not the only number to possess this property. Find all positive integers,  $x$ , where  $x$  is equal to the sum of its digits plus the sum of the cubes of its digits, and prove that these are the only positive integers that satisfy this criterion.

**Solution:** If  $y$  is a digit then  $0 \leq y + y^3 \leq 738$ . Let  $n$  denote the number of digits in  $x$ . For the criterion to be true, it is necessary (although not sufficient) for  $0 < x \leq 738n$  to be true. If  $n = 1, 2$  or  $3$ ,  $0 < x \leq 738n$  is true for all  $x$ , and if  $n = 4$ ,  $0 < x \leq 738n$  is true for  $x \leq 2952$ .  $0 < x \leq 738n$  is never true for  $n > 4$ . Therefore, the only possible values of  $x$  for which the criterion may be true are  $0 < x \leq 2952$ . Using Excel, all values in this range can easily be tested, and it can be seen that the only positive integers that possess the required property are 12, 30, 666, 870, 960 and 1998.

Five correct answers were submitted. The winner of this month's *In the Margin* prize, selected randomly from among the correct entries, was **Blair Alexander**, who will receive a \$50 book voucher.

### Riddle Me This, Batman

One of the most popular types of puzzles is the riddle. A riddle is defined as "a question made puzzling to test the ingenuity of the hearer". That is, it's a trick question. Although modern day riddles have degenerated to being little more than bad jokes of the type commonly found in Christmas crackers, traditionally riddles were used as a form of entertainment for all ages; as a way of hiding information, similar to using a secret code; and as a form of challenge in order to determine a person's worth.

One of the world's earliest known riddles is believed to date back to Babylonian times and is as follows: *Who becomes pregnant without conceiving? Who becomes fat without eating?* The answer is 'a cloud'. Greek mythology also contains a large number of riddles. The most famous of the ancient Greek riddles is undoubtedly 'the riddle of the Sphinx', which was posed by the Sphinx to anyone who passed her and solved by Oedipus (*What goes on four legs in the morning, two legs at noon and three legs in the evening?* Answer: 'Man'). However, the oldest Greek riddle is believed to be that posed by a seer to Minos, keeper of the Minotaur, which he was required to solve in order to bring his young son back from the dead:

*In the fields grazeth a calf whose body has changeth hue thrice in the space of each day. It is first white, then red, and at last black. He who can unravel the meaning of this riddle will restore thy child to thee alive.* (Answer: 'a mulberry').

Since ancient times, many other riddles have been written by people of all different races and nationalities. Some of the most famous riddle writers include Jane Austen, Jonathan Swift, J.R.R. Tolkien, Voltaire, Edgar Allen Poe, and Lewis Carroll.

### My Word!

Here is a selection of riddles and word puzzles to finish off the year.

1. The number TEN has three letters when written as a word, but only two digits when written as a number. What is the smallest whole number that has the same quantity of letters and numbers?
2. Why is a raven like a writing desk?
3. What job in the financial services industry is unusual in that it contains three consecutive pairs of identical letters?
4. What is being described in the following riddle?  
*We are little airy Creatures,  
 All of diff'rent Voice and Features,  
 One of us in Glass is set,  
 One of us you'll find in Jet,  
 T'other you may see in Tin,  
 And the fourth a Box within,  
 If the fifth you shou'd pursue  
 It can never fly from you.*
5. I am thinking of a nine-letter word that contains only one vowel and one syllable. What is it?

For your chance to win a \$50 book voucher, email your solution to: [inthemargin@actuaries.asn.au](mailto:inthemargin@actuaries.asn.au). The prize will be awarded to the entrant with the highest number of correct answers. In the event of a tie, the winner will be selected at random from among the highest scoring entrants. ▲



# $M_{\theta r \Sigma}$ Than $m_{\Lambda}^T h_s$

**A**s this is the December edition, I thought that it may be timely to look at how you might communicate ‘goodwill’ to colleagues, family and friends that you will converse with in this Christmas/New Year season...

Let’s start with Christmas, the season of giving. I find it fascinating that people subscribe to the mantra “it is better to give than receive” and yet the most common question at Christmas is “what did you **get** for Christmas?” Perhaps you might experiment with an alternative question like “what was the best gift you **gave** someone?” Some children may find this challenging but I have found that most people have experienced great delight in selecting at least one very suitable present for a special someone.



New Year represents a time to look back on the last 12 months as well as a time to look forward. If you are catching up with some old colleagues or enjoying rare contact with old friends you might normally ask “what has been happening this year?” or “what’s news?” If you would like to promote goodwill you might try something different like “what have been your favourite achievements this year?” or “what have you most enjoyed about 2010?” It will be important to listen and respond appropriately – and by appropriately, in a spirit of goodwill, I suggest that it will be more important to validate their sense of satisfaction rather than attempting to outpoint them. For example, if their favourite achievement is being recognised with a promotion then choose to be happy for them rather than boast about your own promotion.

In the same way, when thinking about the coming year, you might find it far more engaging to ask “what are you most looking forward to in 2011?” rather than “so, any New Year’s resolutions?” And this might also be relevant to conversations with yourself. If the thought of a New Year conjures up a “same old, same old” reaction in your mind then you might benefit from asking yourself “what is one thing that I want to be better at this year?”

It is also, for many people, a holiday season and most people enjoy chatting about their travels. If you would like a factual account by all means stick with safe questions like “where did you go?” and “what did you do?” If, however, you would like a more engaging conversation you could trial options like:

- “What were the highlights of your holiday?”
- “What were your most enjoyable experiences?”
- “Who were the most interesting people that you met?”
- “What would you love to be able to do again?”

(Please note the use of the second person pronoun – make the conversation about them and see what happens. Attentive listening and an enthusiastic response may generate a more enthusiastic discussion than the travelogue alternative.)

This is also a season of summer sport and many people like to take the opportunity to play spectator even if they can’t play themselves. You don’t have to be an expert to enjoy the spectacle of Sydney to Hobart yachting, the tradition of Test or excitement of day/night cricket and the atmosphere of the Australian Open tennis – even if you’re just watching on TV. And apparently some people actually attend in person. So you could ask someone “was it a good game?” or “how was the tennis?” An alternative could be to ask them to recount their highlights or invite them to describe the best part of their day at the sailing/cricket/tennis/golf/surf lifesaving/A-League/basketball/baseball/water polo.

It takes more than maths to communicate a strong sense of goodwill towards others. It is an even greater skill to frame questions which draw out that goodwill and latent enthusiasm in your colleagues, family and friends. I would like to wish all readers a happy Christmas and a successful New Year – enabled by quality communication. ▲

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**T**his article briefly comments on some components of the health reforms announced in Australia during 2010. It does this through discussion of some of the drivers of hospital costs, a look at the public hospital financing elements of the reforms and the two elephants in the room. It is too early to say whether these reforms holistically address the needs of both patients and providers.

### Drivers of Hospital Costs

The following drivers of hospital costs should be kept in mind:

- 1) **Australia is not a medical island.** It is part of the global hospital/medical community. Decisions made in Australia about staffing and payment of hospital doctors and nurses have to be considered in an international context. While doctors' incomes in Australia are multiples of those attainable in India, Pakistan and Malaysia, they are in turn a fraction of those available in Europe and North America, Hong Kong, Singapore and even parts of Beijing and Shanghai. Nurses in Australia get paid considerably more than nurses in New Zealand, South Africa, the Philippines and Malaysia but a lot less than nurses in some countries in the Middle East and Europe. Consequently 15% of the Malaysian medical workforce currently works in Australia, and we recruit doctors extensively in India and Pakistan. Many of our current nursing staffs are from New Zealand, South Africa and Asian countries. Meanwhile many of our own trained professionals work elsewhere.
- 2) **Medical workforce training is similar to actuarial workforce training in that it doesn't stop at the university gate.** A significant part of medical training is done in the hospital setting and through mentoring. Therefore any significant increase in the output of medical graduates from universities does not solve workforce problems if there are not sufficient training places in hospitals and mentors to cope with the output. This is currently a major bottleneck.

### 3) The work ethic of the medical workforce is changing.

Newer doctors are not prepared to work the hours of the baby boomer doctors nor at the same locations. While the trend to working more safely in safer workplaces is in conformity with rising community working standards, this has resulted in little or no medical care being available in many geographic areas after normal working hours other than through hospital accident and emergency departments. This trend is exacerbated by the feminisation of the medical workforce with female doctors having 40% less lifetime working hours than males and being disinclined to work in outer suburban areas or after hours.

### 4) Each hospital patient is unique.

Categorisation of patients by their medical diagnosis is often superficial. There are often many other characteristics that have to be considered. So categorising patients by a broad itemisation structure further reduces the likelihood that patients described by an item will receive the same services.

### 5) Infirm, elderly people prefer to live in familiar surrounds near family and friends.

This means that inappropriately located residential aged care accommodation won't be considered. Full time residential aged care accommodation and care also costs a significant amount of capital and income. The alternative of living at home and using the local hospital to provide free health care and accommodation for acute illnesses is often preferred because the infirm can mostly remain in their familiar surrounds more cheaply.

### The Australian Health Reforms

The health reforms were initially announced in March 2010. They were in part a response to the National Health and Hospitals Reform Commission report of June 2009<sup>1</sup>. The key objective of the reform was that the Commonwealth will fund: "60% of the efficient price of every public hospital service provided to public patients, 60% of recurrent expenditure on research and training functions

undertaken in public hospitals and 60% of capital expenditure, both operating capital and planned new capital investment, to maintain and improve public hospital infrastructure"<sup>2</sup>. The goal mentioned in the reform is to eventually take the funding of outpatient services to 100%. The clear intention was to reduce the incentive for health sector cost shifting between the Commonwealth and the States.

But how were these reforms going to be accomplished? The reforms are to impose Victoria's public sector casemix payment system on the rest of the Commonwealth. Fine, but Victoria's system uses the Australian Diagnostic Related Group (DRG) system for classifying patients on discharge (around 700 classifications) when national hospitalisations classified under International Classification of Diseases version 10 show that nationally there are around 9000 different classifications of patients in any year. Also Victoria's casemix model currently only funds about 60% of hospitalisation costs and few, if any hospitals get the same DRG payment for any given DRG. So what was the intended meaning of the words 'every public hospital service' and 'efficient price'?

The third component of the objective was that the reforms were about services provided to 'public patients'. Hmmm! Medicare currently provides 'free' at point of service delivery of all public hospital services to both public and private patients. So was Medicare going to be changed? How would unconscious patients with private health insurance be recognised on being admitted through a public hospital emergency department?

As it turned out in the negotiations with the States, the Commonwealth resolved these issues by changing the objective that was included in the document agreed between the Commonwealth and the States (except Western Australia)<sup>3</sup>. It reads as follows: "*The Commonwealth will fund 60 per cent of the efficient price for all public hospital services, and 60 per cent of capital, research and training in our public hospitals*". Then, later, the concept of an agency that would determine the 'efficient price' for diagnostic related group payments was also discarded.

The Commonwealth did obtain agreement from every State (except WA) to surrender 30% of their GST revenue to the Commonwealth so that its proportion of funding of the hospital system can be increased to 60% without significant cost to itself. But without Western Australia signing off on this deal, there may be a problem given that the current Council of Australian Governments agreement between the Commonwealth and the States relating to GST monies requires all States to sign off on any change.

## Two Elephants in the Room

The initial reform package did not mention the two elephants that cause much of the problem in the public hospital system. The first elephant is the changing size, location, population dynamics and workplace practices of the general practitioner workforce. This elephant is pushing many extra patients through the hospital door. This is because when patients with acute illnesses can't get immediate access to their GP, these patients either, do not get the illness treated at all, or they go to a public hospital outpatient department. Some untreated acute illnesses develop

The first elephant is the changing dynamic of the general practitioner workforce; the second elephant being key factors of the residential aged care sector.

into more severe illnesses that then require hospital treatment. The Commonwealth subsequently addressed some of the general practitioner issues but many cannot be resolved quickly, particularly the dearth of after-hours service availability in many areas.

The second elephant is the size, location and funding issues of the residential aged care sector. The lack of and cost of aged care beds in the required locations block many elderly patients from getting out of hospital when they no longer need hospital treatment but are too sick to go home. The licensing, supply of and funding of residential aged care vis-a-vis the alternate home/occasional hospital care model may also become easier to address as the Commonwealth added to the reform a takeover of state government funding that currently goes to home and community care aged-care programs. But until there is enough aged care beds located where patients require them and funded in a way that makes their price at point of service no dearer than an equivalent public hospital bed, the residential aged care elephant will continue to block patients from leaving the public hospital system. The Productivity Commission is currently looking at reforms that will address these structural aged care issues. Its report is due in April 2011.

In its 1997 and 2005 reports, the Productivity Commission recognised that a holistic health-care system-wide approach to reform is really required in Australia. The harmonisation of the funding arrangements of all parts of the system could then occur. But no government wants such a review because Medicare, as we know it, would be under threat! Alternatively, incremental reforms have to be undertaken. As Gary Banks, the chairman of the Productivity Commission, suggested in 2008 "*The challenge with an incremental approach to reform, however, is to ensure that it is consistent with a coherent strategy for improvement of the system as a whole*". So do these reforms meet Gary Bank's challenge? Possibly! But it will be a long time before we will know if they do.

A future article will look at the Medicare Select proposal of the NH&HRC and the private hospital funding system.

**Brent Walker**

bwas@bigpond.com



<sup>1</sup> NH&HRC Report *A Healthier future for all Australians* June 2009.

<sup>2</sup> National Health and Hospitals Network for Australia's Future – Delivering the Reforms: Commonwealth Government.

<sup>3</sup> A National Health and Hospitals Network for Australia's Future – Delivering Better Health and Better Hospitals: Commonwealth Government.





### Bozenna Hinton

President 2010

The Institute of Actuaries of Australia extends its sincerest thanks to Bozenna Hinton for her commitment and leadership as President in 2010. Bozenna's particular focus was on relevance and value – both of the Institute to its members and of the profession to the business community and public. Her commitment to these issues is at least partly reflected in her history of Institute service since joining Council in May 2007 which included:

- Chair of Member Services and Educator Taskforce. The Taskforce's work ultimately led to a number of initiatives – such as the review of membership fees, simplification of membership categories and the introduction of a new member benefit in the form of a professional indemnity insurance product for semi retired and self employed members;
- Convenor of Education Council Committee and Member of the Part III Review Taskforce; and
- Institute representative on the following IAA Committees: Accreditation, Education, Social Security, Pensions and Employee Benefits, and International Education Program.

Bozenna was also an enthusiastic supporter of the designation changes introduced in 2009 and was able to welcome (at the date of writing) 145 members who have achieved this designation to date.



### New Council Members

The Institute would like to congratulate the following successful candidates who will join Council in 2011:

- **Caroline Bayliss**
- **Jules Gribble**
- **Andrew Huszczo**
- **Estelle Pearson**
- **Stephen Woods**

The Institute also congratulates **Gloria Yu** on her re-election to Council.

These new Council members will be introduced to the membership in the March 2011 issue of Actuary Australia.

### Council Members moving on...

The Institute extends its thanks and appreciation on behalf of Members to the following who (subject to the election of the Vice President for 2011), will be leaving Council at the end of 2010 following the expiry of their terms.

Their valuable input on the many strategic and governance issues considered by Council over the last three years, reflects a strong commitment by each of them, not only to their individual areas of practice and endeavour, but to the broader interests of the profession. Members will be well aware of the more general practice-level contributions made by all below, however the following records their specific service in relation to Council, Council Committees and Council Taskforces.

#### Anthony Carey

*Council member December 2007 – December 2010*

Member of Education Council Committee  
Member of Public Policy Council Committee  
Member of Health Practice Committee  
Member of Macquarie University Actuarial Foundation Board  
Member of Life Insurance and Wealth Management Practice Sub-committee



#### Chris Latham

*Council member December 2007 – December 2010*

Convenor of Research Council Committee  
Member of Research Taskforce  
Member of Risk Free Discount Rates Taskforce  
Member of HR and Remuneration Council Committee



#### John Newman

*Council member December 2007 – December 2010*

Member of International Council Committee  
Convenor of Designations Implementation Committee  
Member of Professionalism Review Taskforce  
Member of HR and Remuneration Council Committee



#### Blair Nicholls

*Council member December 2007 – December 2010*

Convenor of HR and Remuneration Council Committee  
Member of Management Committee  
Member of International Council Committee  
Member of Nominations Council Committee  
Member of Risk Free Discount Rates Taskforce



#### Anne Peters

anne.peters@actuaries.asn.au

## Congratulations to Macquarie University Actuarial Studies Student

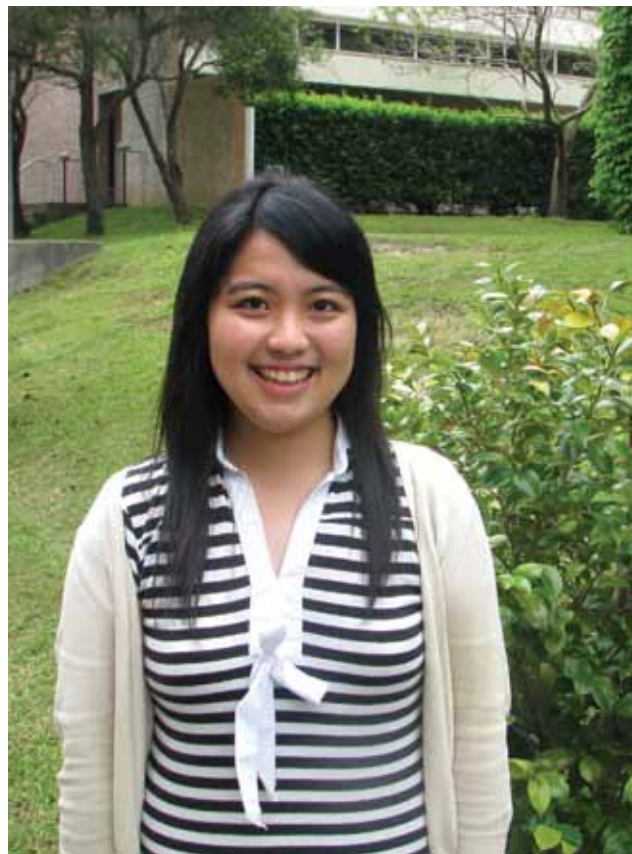
**M**acquarie undergraduate **Maggie Lee**, who is enrolled in Bachelor of Commerce (Actuarial Studies) and Bachelor of Science (Mathematics) was recently awarded the prestigious **Prime Minister's Australia Asia Endeavour Award**.

Maggie will use her award to enrol at the Chinese University of Hong Kong in order to gain a deeper understanding of Risk Management and Actuarial Studies in Asia. She also intends to study Fourier Analysis and Functional Analysis to enhance and consolidate her technical and analytical skills as a future actuary.

She plans to undertake her internship with two different organisations in Hong Kong – the HSBC Bank and Hong Kong's central banking institution, The Hong Kong Monetary Authority – thereby gaining both a public and private perspective.

The Prime Minister's Australia Asia Endeavour Awards provide scholarships for the nation's best and brightest university students to not only undertake study, but also gain valuable experience through internships and work placements in Asia. The aim of the program is to build deep and enduring education and professional linkages between Australia and Asia. Forty scholarships are awarded annually to Australian university students, twenty to undergraduates and twenty at the postgraduate level.

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## notice

### Student Columns for 2011

**A**ctuary Australia recognises the importance of maintaining the relevance of the magazine to the student members of the Institute. Over the past few years we have actively encouraged the actuarial societies across the five universities (UNSW, Macquarie, ANU, Melbourne and Curtin) to contribute to the magazine and provide the readership with an insight into all manner of topics that affect the students.

Most of these stories have been around the successful activities that the societies have held throughout the year, ranging from induction events, academic assistance, networking activities and joint sporting and dining events. We have particularly enjoyed the articles submitted from our Western Australian students at Curtin University, who, in recent years, have informed us about the complexities of both the European Union financial system and business dining etiquette. Universities can be notorious for focussing solely on academic outcomes and it is encouraging that the staff at Curtin University

are preparing their students with the 'softer' skills that are ever so important in a business environment.

**From next year, we would like to cast our net a little further and reach the rest of the students at the universities around the country, especially those conducting post graduate research.**

Whilst the *Australian Actuarial Journal* has been a place for which final research papers and articles are published, we would like to incorporate regular updates about the kinds of research being conducted throughout our academic institutions. In doing so, we hope to keep our readership informed of the direction that academic research is taking and its practical implications, without placing a heavy emphasis on the technical nature of the research.

**If you are studying, supervising or are involved in academic research, we would love to hear about your current or proposed research topics.** Contact Katrina McFadyen via [katrina.mcfadyen@actuaries.asn.au](mailto:katrina.mcfadyen@actuaries.asn.au) or Catherine Robertson-Hodder via [editor@actuaries.asn.au](mailto:editor@actuaries.asn.au) ▲





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## **PLENARY SPEAKERS ALREADY CONFIRMED:**

- Bernard Salt, Partner, KPMG
- Seamus Creedon, International Consultant
- Hazel McNeilage, Head of Funds Management, QIC
- Simon Longstaff, Executive Director, St James Ethic Centre
- Tony Coleman, Director, Lonergan Edwards and Associates
- Pauline Blight-Johnston, Managing Director, RGA Australia
- Zac Roberts, Director, SouthPeak Investment Management
- John Maroney, Principal Administrator, International Association of Insurance Supervisors



**VISIT [www.actuaries.asn.au/CON2011](http://www.actuaries.asn.au/CON2011) FOR MORE INFORMATION**

# Actuarial Women's Network



**T**he Young Actuaries Program (YAP) started the year with the lofty goal of informing and inspiring young (and younger) professionals in the industry, and providing opportunities for them to network across different areas. The final session for this year was held in October, at Ernst & Young, and certainly achieved this goal. It provided the opportunity to hear from three distinguished senior actuaries, **Jennifer Lang, Megan Beer, and Kirsten Armstrong**, and the room was filled to capacity with an excited actuarial crowd, who were also given the chance to interrogate the speakers afterwards. (Funnily enough, some of the usual YAP attendees were absent. Perhaps they were scared off by the 'Actuarial Women's Network' title?)

Each speaker gave a riveting account of her career experiences to date.

- Jennifer is Chief Actuary, Wealth Management at CBA and is the Appointed Actuary of CBA's life insurance division. Previously a Partner at Deloitte, Jennifer has over 20 years' experience in the life insurance industry. We were surprised to hear that she aims to leave the office at 5.00pm every day!
- Megan is the Head of Finance for MLC's insurance business, including the actuarial profitability and pricing teams. She has previously been the Appointed Actuary for TOWER and – along with an MBA – has 18 years' experience in corporate and consulting areas.
- Kirsten is a Partner at PwC and specialises in the area of health insurance and government policy. She has also spent considerable time working in the development sector, including periods in Russia, Eastern Europe and the Middle East.

There isn't enough space here to do justice to each story. Instead, here are some of the recurring themes present in all of the presentations (in no particular order).

## The importance of mentoring

All three stressed the value of the mentors they had early on in their working lives – experienced actuaries, who provided great advice, supported them and helped to shape the direction of their future careers. We were strongly encouraged to seek out a mentor

ourselves – someone you admire, whether from your workplace or from a different sphere. Who would you nominate as your 'mentor'?

## Enjoy what you do

Learn as much as you can from your role, especially the people around you – whether they are actuaries or have a completely different skill set. If you're not enjoying your work, change; look for a different role. Ask yourself if you can go back if it doesn't work out. Always seek rewarding experiences, even if it means taking a smaller salary.

## Go overseas, if you can

All three actuaries spoke about their intense learning experiences in the UK and Europe, from working with the many contrasts they found in the industry – in the general environment, in the products sold, in the different approaches taken, and so on. (Each person also agreed that they came back to Australia for the sun!)

## The rewards (and challenges) of the transition to a management role over time

We heard about the increasing emphasis on listening to, motivating and organising others. Being able to communicate with different audiences is vital.

## Be confident in yourself

Lack of confidence was cited as a common reason for actuaries being 'held back'.

## Have a life outside work

Don't be afraid to take career breaks.

The evening was a fantastic opportunity to learn about the personal career experiences of senior actuaries, which we don't always get to hear. Since this event, the organisers have received a lot of positive feedback. If you have any suggestions for possible future speakers, please contact Melissa Madonna by phone; (02) 9239 6109 or email [melissa.madonna@actuaries.asn.au](mailto:melissa.madonna@actuaries.asn.au).

Keep an eye out for the next action-packed YAP event in 2011! ▲

## Abigail Marwick

[Abigail.Marwick@au.ey.com](mailto:Abigail.Marwick@au.ey.com)





### Part III Key Education Roles for 2011

All members probably realise that the delivery of the Part III Education Program relies on the generous contribution of volunteers. In fact, approximately 300 volunteers a year assist with the Part III Education Program and as some people perform more than one role, the number of roles is even greater.

Since the two semester system was introduced in 2005, there has been considerable resource strain on the Institute in delivering the Part III Education Program using the current approach. The secretariat has increased its resources to provide greater support to volunteers. The Learning Management System is being used to provide greater accessibility and efficiency. Rebecca Moore, Volunteer Manager, recruits volunteers and keeps all tasks on track. Reducing the frequency of the delivery of courses with low enrolment numbers and sub-contracting Investments courses to Access Macquarie has also alleviated some of the strain. However, the strain is still there.

The sustainability of the current delivery approach using such a large volume of volunteers is questionable. Alternatives, such as the Staff Actuary model have been trialled. We are considering making further changes to the current system to reduce the number of volunteers required. However, this needs to be done in a manner that maintains the required quality.

Until a more sustainable model is in place, we need to fill the current required roles. The secretariat has been able to more comfortably fill the more junior volunteer roles in recent years, such as assignment and exam markers and scrutineers. These roles have been filled by both recent and experienced Fellows. It is a misconception that those Fellows who have qualified recently do not participate as volunteers. In fact, recent qualifiers probably make up more than half of these junior volunteer roles. We thank these members and encourage them to continue.

While we are managing to fill the more junior roles, we have had great difficulty in filling the more senior or key volunteer roles of Course Leaders, Chief Examiners and Assistant Examiners. Course Leader and Chief Examiner roles are more suitable for experienced Fellows. We usually ask that members have at least five years of post-qualification experience in their practice area.

The Institute's current system involves a separation of powers between those who teach and write assessments and those who mark assessments and determine who passes and fails. Course Leaders are responsible for writing the assessments (assignment and exam) and teaching through tutorials and online discussion forums. Chief Examiners review and approve exams and recommend the final pass list. It is also a misconception that Chief Examiners have to write the exam and recruit their successors. Assistant Examiners provide general assistance to the Chief Examiner, but their primary function is to review exam answers from borderline candidates.

The Institute is very grateful to have some Course Leaders and examiners who have continued over several semesters. However, we still have key education roles that need to be filled for Semester 1 2011. I would like to encourage new people to become involved. If you are a Fellow with more than five years post-qualification experience and would like to assist, please contact Rebecca Moore on [rebecca.moore@actuaries.asn.au](mailto:rebecca.moore@actuaries.asn.au) to express an interest in taking on these key education roles, particularly those who already have experience as markers.

Here are the Course Leaders and Examiners for Part III course in Semester 1 2011. ▲

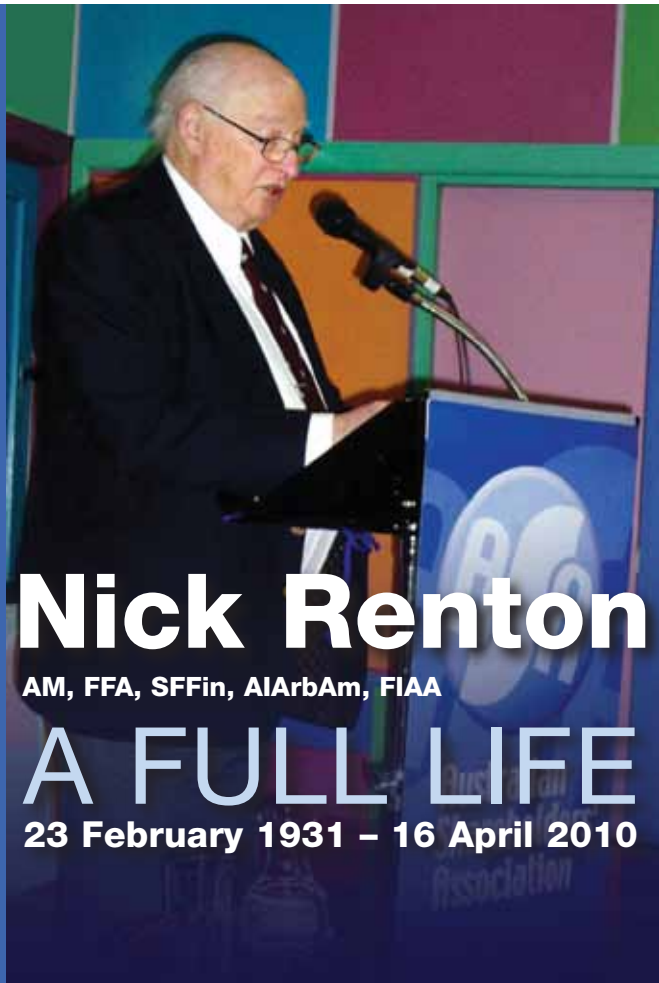
#### Philip Latham

Education Manager  
[philip.latham@actuaries.asn.au](mailto:philip.latham@actuaries.asn.au)



Course	Course Leader(s)	Examiners	BoE Chair and Assistant Charis	
<b>C1</b>	Access Macquarie (all roles)	Access Macquarie (Course Examiner) Bruce Graham (External Examiner)	Chair	Anthony Brien
<b>C2A</b>	Aaron Bruhn (assignment) Steve Miles (exam) Bruce Thomson (tutorials & forums)	Warwick Young (Chief Examiner) Yee Lin Yang (Assistant Examiner) Robert Milohanic (Assistant Examiner)	Assistant Chair	Michael Eabry (GI)
<b>C2B</b>	Steve Miles (assignment) Jonathon Hughes (Exam) Michael Lau (tutorials & forums)	Gary Musgrave (Chief Examiner) Kirsty Hogan (Assistant Examiner) <i>TBC (Assistant Examiner)</i>	Assistant Chair	Andrea McDonnell (GRIS)
<b>C3A</b>	Dave Finnis (assignment & exam) <i>TBC (tutorials &amp; forums)</i>	David Gifford (Chief Examiner) Georgina Dircks (Assistant Examiner) Ian Werner (Assistant Examiner)	Assistant Chair	Alistair Barker (GRIS)
<b>C3B</b>	Rick Shaw (all roles)	Jim Qin (Chief Examiner) Paul Goswamy (Assistant Examiner)	Assistant Chair	Steve Miles (Life)
<b>C5B</b>	Access Macquarie (all roles)	Access Macquarie (Course Examiner) Ed Frielikh (External Examiner)	Assistant Chair	Matthew Wood (Life)
<b>C6A</b>	David McNeice (all roles)	Stephen Woods (Chief Examiner) Jim Repanis (Assistant Examiner)	Assistant Chair	Johnson Wong (GI)
<b>C10</b>	David Service (all roles)	Bruce Thomson (Chief Examiner) <i>Matt Ralph or James Fitzpatrick</i> <i>TBC (Assistant Examiner)</i>	Assistant Chair	Jonathon Perkins (GI)
			Assistant Chair	Andy Siu (Life)

NB: This list excludes C7A Enterprise Risk Management which is not assessed by the Institute



**N**ick Renton, by any measure, had an extra ordinary career. He qualified as an actuary at the age of 26 and from the age of 30 to 45 was the Principal Officer of The Switzerland Life Insurance Company. He followed that by leading the Life Office Association and its successor the Life Insurance Federation of Australia for the next 12 years and then at the age of 55 instead of retiring he became, as listed in his web site, a consulting actuary, a commercial arbitrator, a company director and (above all) a writer.

In between these activities he founded and was first President of the Australian Shareholders Association, Federal President of the Australian Society of Security Analysts and Victorian Chairman of the Commercial Law Association of Australia and even stood as a Liberal candidate for the Victorian State Parliament.

It was during this period (1970's) that Nick made his public reputation as the man who blew the whistle on Vehicle and General Insurance. John Gilmour says in his tribute to Nick in The Age "V & G gave the appearance of unusual success until Renton examined its accounts and declared that the insurer was not making sufficient provision for its unexpired risks thus its profitability was an illusion" he goes on to say that "there was a furore about his (Renton's) assertions" but when V & G collapsed "Renton was proved right, and he was catapulted into the media as a financial guru."

Nick was prolific author with more than 70 books and 600 articles published. His first book, *A Guide to Organisations and Meetings* was first published in 1961 and is now in its 8th edition. His books covered an eclectic range of subjects from 'Family Trusts' and 'Understanding Estate Planning', through books on share investment, property investment, negative gearing to books on good writing, on Latin phrases and even the first dictionary of metaphors in the English language. A number of his books have been published overseas including the United States and India.

His 600 articles have appeared in a wide range of publications ranging from six metropolitan dailies and numerous periodicals to an overseas in flight magazine.

He was recognised by the Institute in 1992 by being awarded the H M Jackson Prize for his paper on taxation and in 1995 he was awarded the Ken Millar Award for his bestselling *Understanding the Stock Exchange* and his controversial *Company Directors; Master or Servants*.

His services to Australia were recognised by being made a Member of the Order of Australia in 2004.

Nick was born Nicholas Erwin Reinitz in Austria in 1931 and migrated to Australia with his parents in 1939. One can only imagine the challenges for a schoolboy of 9 who has just migrated from a country with which Australia was at war.

He started his actuarial career at the Colonial Mutual Life in 1949, completing his Faculty exams in 1957. Sam Brown a fellow student recalls that, as was often the case in those days, there were only two students sitting the final exam and it was conducted in a senior actuary's office, who gave them the papers and left them to it for the requisite three hours.

Even during those years Nick's penchant for analysis of the less obvious was apparent. He established which tram routes offered the best protection in the various weather extremes that Melbourne offers and took which ever was appropriate to the weather on the day.

More importantly in his early years at Colonial Mutual and Switzerland Life, Nick was a popular actuary who was a great supporter of, and mentor to, the actuarial students around him as well as someone who was able to turn his skills to the much wider fields. In Switzerland Life he had to set up a life insurance administration system from scratch.

Nick was many things, an atheist, a rationalist and a sceptic but most importantly Nick is remembered as a gentle and generous man who was able to keep calm under even the most severe provocation. Nick died in Caritas Christi Hospice on 16 April 2010 aged 79. He is survived by his wife Jenny and his three children. ▲

**Graham Rogers**

gerogers@bigpond.net.au



## What have we achieved this year?

When I started with the Institute in early February this year I knew the CEO role would be demanding, but I could hardly have imagined the pace of change we would experience. It has been a huge year for me and the 23 staff (some part-time) at the secretariat. I am very proud of how hard my team, the three Presidents, Council, our Practice Committees and our other 500+ dedicated volunteers have worked, and I am amazed at what has been achieved.

We have an enormous 'business as usual' workload of running 100 events and meetings a year, coordinating and administering education for more than 1,000 actuarial students, producing and updating professional standards, supporting research and servicing our members. However I thought I would share with you some of the special highlights of 2010 from my point of view.

## Risk Management

The Institute is practising what it preaches and we aim to be a role model for small business in our internal risk management practices. We have now fully implemented the comprehensive risk management process that was designed for the Institute last year. I must admit that I have been pleasantly surprised at the quality of management and strategic insight we have gained through properly measuring our risks and tracking emerging risks. I'm a convert – this is definitely a valuable management tool and not just a compliance 'box-ticking' exercise.

## Member Service

Our most important role is to service you, the members of the Institute. We have introduced a new member fee scale which, whilst not without its teething problems, has delivered a fee reduction to a large number of members. All Fellows and Accredited members have experienced a fee reduction in 2010-11, as have members aged 60+ who are no longer providing professional services. I will be looking for opportunities to reduce fees for more members next year, if further business efficiencies are gained (refer below).

I aim to increase the secretariat's ability to provide top quality service. I have engaged Martin Mulcare (*More than Maths*) to provide a series of training sessions for the secretariat staff on dealing with our members.

We are also starting to track issues and complaints as part of our risk management process, and use a feedback loop process to identify

areas in the business where we can improve service to you. Staff are encouraged to raise issues where we could have done better. As always, if you have suggestions on how we can improve service levels – or things we do that you really like – then I would love to hear from you.

Networking meetings were kicked off in Melbourne and Sydney for the growing number of actuaries working in banking and finance. We are looking to extend this concept to other practice areas next year.

## Public Profile and Public Policy

As mentioned in Bozena's column, we have been very visible in the press this year, with the support of Honner Media. We have had a huge year in public policy with three proactive policy areas signed off by Council, and a fourth under development. We have made more than 30 submissions (up until mid November), ably assisted by our Public Policy Committee and our policy consultant Rebecca Johnstone.

## Business Efficiency

This year I have focused a lot of time and effort in getting the secretariat running at peak efficiency. The largest change has been the introduction in June of our new IT system Aptify – the culmination of a two-year project. Aptify is a fully integrated CRM (Customer Relationship Management) system that also underpins our new website. The implementation has been extremely time consuming (due in no small part to the complexity of our educational system and the amount of data cleansing required) and has taken longer than anticipated. The new system is extremely powerful. As staff gain familiarity with the new system we are already starting to see operational efficiency gains, and I expect more to come through in coming months.

## Staffing at the Secretariat

We have made some changes within the team to reduce costs and better target resources to our current business structure. These changes include:

- In Education, discontinuing the Director of Education role, adding a Universities Relationship Manager Jennifer Burns and team assistant Lauren O'Donnell plus adding Volunteers Manager to Rebecca Moore's existing responsibilities.
- Simplifying the administration of our Research program to reduce the workload in the secretariat such that Jennifer Burns is now supporting this function as well as her Universities role.
- Adding a Marketing person in a contracting role to assist with a number of projects. We will hire a permanent person next year.
- We have not replaced the vacant position of Director of Public Affairs, and Rebecca Johnstone has been assisting us on a contracting basis.
- We have a new Senior IT Manager Kelvin Russell, with the increase in IT resources reflecting the fact that so much more of our services are now being delivered online.





Gloria Yu and Melinda Howes – GI Seminar



Melinda Howes, Chris Carlson, Patricia Teufel and Bozena Hinton – GI Seminar

- Katrina McFadyen has returned to us on a full-time basis after a stint in the Middle East, and is working in Membership as well as coordinating our publications.
- Stephen Woods is on a three month contract as Practice Committees Liaison Actuary until December.

We have had much success with our new policy of advertising for vacant secretariat positions first amongst our members – in this way we have secured a maternity leave placement in Membership in the Sydney office, and our front of house events assistants in Melbourne.

### Education

The new actuary designation has been rolled out and we have run five Professionalism Courses this year.

We were one of 13 countries to sign the CERA treaty, and had our CERA course (through the UK) approved. The new CERA qualification

is close to being able to be awarded, and we have had a number of people pass the new course 7A who will soon become Certified Enterprise Risk Actuaries.

We have also launched an online Investments Bridging course.

### Our goals for 2011

In 2011 we will be continuing with a number of measures to implement our strategic intent of improving the brand of actuary, expanding the mandate and adding value to members beyond the mandate.

We will also continue our focus on business efficiency and improving services to you. I am looking forward to another great year!

I wish you and your loved ones a safe and happy festive season. ▲

**Melinda Howes**

melinda.howes@actuaries.asn.au

## letter

Dear Editor,

Further to the results of the *Pulse* Survey in the November 2010 issue of *Actuary Australia*, I thought many of your readers may be interested to know that the Institute has, since March this year, been making representations to the Attorney General's Department to have actuaries included in the list of people who are authorised to witness a statutory declaration under the Statutory Declarations Act 1959 (Cth). The Department is currently reviewing the regime and we look forward to a positive response to our submission. We will keep members informed of the outcome. ▲

**Anne Peters**

anne.peters@actuaries.asn.au

**Wishing you a  
relaxing festive  
season and a  
prosperous 2011  
from the AA  
editorial team**



# Strategically placing Actuaries around the globe.



## Sydney – Senior Life R/I Marketing Actuary

Working closely with the CFO in Sydney, you will be responsible for client servicing/marketing and building a high profile of the company as a reinsurer of choice and a reliable business partner in Australia and New Zealand. Key responsibilities for this role will include:

- Business Development in Australia and New Zealand
- Client management responsibility to ensure the development of strong customer focused reinsurance relationships with clients by understanding and exceeding their expectations
- Good technical knowledge of the Life/Reinsurance Market, outgoing personality, self motivated
- Excellent communication and interpersonal skills

**Contact James Lecoutre for more information.**



## Sydney – Actuary/Statistician General Insurance

Our client, a leading workers compensation company in Australia, is looking for 2 experienced actuaries or statisticians to join their team based in Sydney. The roles will initially be on a 12-month contract basis. You may be an actuary, actuarial student or someone with a Mathematics or Statistics background. It's not essential that you have WC experience.

- Between 2-5 years general insurance experience
- Strong SAS and analytical skills
- Experience in pricing, valuation and portfolio monitoring
- Ability to enhance existing processes and methodology
- Self starter with attention to detail

**Contact Claire Street for more information.**

### Lesley Traverso

T: +61 (0)2 9226 7459  
M: +61 (0)433 129 390  
lesley.traverso@dwsimpson.com



## Sydney – R/I Pricing Actuary, Life Insurance

Working alongside the marketing actuary, you will be responsible for pricing and valuation providing actuarial support and expertise in the monitoring and development of the business. This is a great opportunity for dynamic, motivated and innovative individuals to be part of a business providing new partnership opportunities to the local Life market.

- Pricing of new business quotes and tenders
- Internal and external reporting requirements, including valuations, business planning and forecasting
- Assisting the marketing actuary with marketing initiatives
- 3-7 years experience in an actuarial role, including Life pricing experience
- Nearly/newly qualified actuary

**Contact James Lecoutre for more information.**



## Singapore – Actuarial Manager, Life Products & Marketing

This is an exciting opportunity for an experienced life actuary to govern and guide the development of new products for the Asian markets of this large International Insurer. Based within the regional headquarters in Singapore you will be a qualified actuary, or have extensive industry experience with some management skills. The main responsibilities and key requirements of this role are as follows:

- Establishing pricing frameworks and guidelines for the region
- Responsible for business strategy and planning
- Project and team management skills
- Foreign Language skills and knowledge of the Asian markets would be a bonus
- 5-10 years of relevant experience

**Contact Claire Street for more information.**

### James Lecoutre

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**Contact James Lecoutre for more information.**



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- Actuarial/Mathematics degree from an internationally known University and pursuing actuarial qualification
- Strong modelling skills preferably in Moses, Prophet or Alfa
- Communication skills must be very strong

**Contact Claire Street for more information.**

### Claire Street

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