The Actuarial Review

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Ning Wang (left), Yen-Chieh Tseng (background), and Julie Ann Walker (right) stand as they are recognized as new CAS Associates during the 2008 CAS Annual Business Session on November 17. The CAS admitted 148 new Fellows, 230 new Associates, and four new Fellows by Mutual Recognition in November 2008.

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New Fellows by Mutual Recognition

Ashleigh Edwards, FCAS
Fellow, Institute of Actuaries of Australia
Vice President, Allied World Reinsurance Company

Mark McCormick, FCAS
Fellow, Institute of Actuaries U.K.
Imagine Advisors, Inc.

Jaishan (Jay) Rajendra, FCAS
Fellow, Institute of Actuaries U.K
Towers Perrin

Timothy Tetlow, FCAS
Fellow, Institute of Actuaries U.K.

CAS Welcomes New Affiliate

Tassilo Hummel
Allianz Global Corporate & Specialty NA
Munich, Germany
Fellow, German Actuarial Association

CAS Trust Scholarships Open for 2009–2010

Funded by donations to the CAS Trust, the CAS Trust Scholarship program awards up to three $2,000 scholarships to deserving students annually. The intent of the scholarships is to further students' interests in the property/casualty actuarial profession and to encourage pursuit of the CAS designation. The CAS Trust Scholarship Subcommittee, chaired by Letitia Saylor, chooses recipients.

If you know students interested in pursuing careers in actuarial science, encourage them to apply. Completed applications for the upcoming year are due May 1, 2009.

Established in 1979, the Casualty Actuarial Society Trust affords CAS members and others an income tax deduction for funds contributed and used for scientific, literary, or educational purposes.

An ERM Designation for the CAS?

In November 2008, the CAS Board instructed the Enterprise Risk Management (ERM) Designation Task Force to develop a report by March 2009 with a recommendation on whether the CAS should have an ERM designation. At least three approaches are under consideration: a global approach, a joint approach with the Society of Actuaries (SOA), or a separate CAS-sponsored designation. Each of these three approaches is discussed further below. As the original charge to the task force focused on a possible global approach, this article concentrates on the issues relevant to this approach. Future communications will address the other approaches as well as subsequent developments. Stay tuned!

Global ERM Designation

Over the past two years an exciting development has been taking place globally as a number of actuarial associations representing many countries are giving serious consideration to developing a global ERM designation. The driving force behind the movement is a growing and shared desire by actuarial organizations to promote and prepare actuaries to take an expanded role in the growing field of ERM, both within and beyond the insurance industry. A designation would demonstrate extensive knowledge of risk management practices for many different kinds of risks and prepare actuaries to assume an expanded set of risk management roles.

The initiative started in the spring 2007 and proceeded more formally with the signing of a Statement of Intent at the October 2007 International Actuarial Association (IAA) meetings in Dublin. Since then, it has expanded to include a group of 15 of the IAA's member associations.

The CAS has been one of the participating organizations since the inception of the efforts to develop a syllabus and the designation framework. Steve D'Arcy, FCAS, has represented the CAS on the international syllabus and designation framework working groups. Internally, the CAS Executive Council (EC) established a task force led by Dave Terne, FCAS, to follow the developments and advise the CAS Board and EC on the advisability of an ERM designation.

The concept of a global ERM qualification for members of the actuarial profession, temporarily referred to as an "XRX," moved several steps closer to reality as a result of several meetings of the leaders of the participating actuarial organizations taking took place in Cyprus last November. The syllabus and learning objectives have been clearly stated, but a consensus on the depth of knowledge of the subject matter has not yet emerged. However, the designation as currently envisioned would only be granted to individuals who already have an actuarial credential and complete at least one ERM-specific exam. The CAS has advocated for a more robust level of knowledge but has also expressed willingness to compromise on certain topics. The CAS's desires for a more robust knowledge level might be addressed by certificates of higher ERM knowledge. The global syllabus working group continues to work towards a consensus.

The mechanics of the global designation's operations are set forth in a "treaty"—an agreement among the participating organizations. The treaty does not specify how the designation would be awarded. The following approaches have been mentioned: university education, self-study examination process, and a capstone examination.

Another aspect of the treaty is that the participating organizations will agree to recognize each other's XRXs in their practice of ERM. Each participating organization would only offer this designation to its own members. However, individuals who belong to more than one participating organization would only need to attain the XRX designation from one of them; the other organizations would automatically recognize that designation without additional requirements. It should be understood that the treaty has no bearing on the current CAS mutual recognition agreements that deal with membership. XRXs from another organization would not automatically receive CAS membership.

An important function of the treaty is to ensure the employers of an XRX that the credential not only carries a deep understanding of ERM but also includes a high level of professionalism among actuaries practicing ERM as an XRX. All XRXs would first have to be fully qualified actuaries according to IAA education standards. Each participating organization would be responsible for disciplining its XRXs.

The treaty would also allow each participating organization to grant the XRX credential to a percentage of its members based on their ERM job experience, similar to the way that the SOA's CERA designation was granted to some long-time ERM practitioners.

Several of the participating actuarial associations could start awarding the global qualification to their members during 2009. There is considerable interest well beyond the current participating organizations, including many associations within

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LOUISE FRANCIS

A Financial Crisis Reading List

Stories related to the current financial crisis have come to dominate our media. Because of its widespread impact on both individuals and businesses, it is no longer a subject just for the business pages. As individuals and as insurance professionals, we are affected by it. The crisis has damaged a number of insurance companies including some that insured subprime and unconventional mortgages or invested in derivatives based on pools of mortgages or indulged in the now infamous credit default swaps that insured subprime mortgages. For the interested business reader, the crisis provides a high-profile example of the failure of risk management procedures and financial product valuation models.

I recommend the following annotated reading list for those who wish to broaden their understanding of financial crises, the causes, consequences, and possible solutions. The list includes books dealing with past financial debacles, such as *The Great Crash*, and books specifically addressing the current crisis, such as *Chain of Blame*. In general, the books on this list are not burdened with a lot of technical detail and a number are highly entertaining.

The Great Crash of 1929 by John Kenneth Galbraith, (Houghton Mifflin, 1961, $14)

The greed, irrationality, mass delusion, and excessive use of leverage and exposure to risk that brought about the Great Depression of the 1930s is described in this book. It is entertaining reading and describes everything that is happening in the current crisis, though specific details of the manifestation of irrationality and chicanery have changed.

When Genius Failed: The Rise and Fall of Long Term Capital Management by Roger Lowenstein (Random House, 2001, $14.95)

This is the very entertaining morality tale about the failure of Long Term Capital Management in the late 1990s. It also describes a great example of the colossal failure of a risk management program due to greed, overconfidence, and the modelers' (including a couple of Nobel Prize winners) naïve belief that reality should conform to their models, rather than considering how well the model approximated the real world.

Chain of Blame: How Wall Street Caused the Mortgage and Financial Crisis by Paul Muolo and Matthew Padilla (John Wiley and Sons, 2008, $27.95)

In this book, two financial investigative reporters provide many previous unknown details about the key actors in the mortgage and credit crisis, from well known players like Angelo Mozilo to the more obscure Roland Arnall.

Reinventing Collapse: The Soviet Example and American Prospects by Dmitry Orlov (New Society Publishers, 2008, $17.95)

This short book by a Russian immigrant who witnessed the collapse of the Soviet Union describes how Americans might respond if faced with a similar crisis.

Financial Armageddon: Protecting Your Future from Four Impending Catastrophes by Michael J. Panzner (Kaplan Publishing, 2008, $16.95)

The first edition was written before the subprime blowup, but

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the Groupe Consultatif, an association of actuarial organizations within the European Union.

Joint Approach with the SOA

If the initiative to develop a global ERM designation is not successful, another possibility for the CAS would be to pursue a joint designation with the SOA. The SOA has already established and has been granting its own ERM designation, the Chartered Enterprise Risk Analyst (CERA), an Associate-level designation within the SOA.

CAS ERM Designation

The CAS EC initially established the ERM Designation Task Force to monitor and provide input on the global ERM designation initiative. As noted above, the task force has now been charged with evaluating the above options and recommending how to proceed. In addition to the basic question of whether the CAS should have, or be a party to, an ERM designation, the task force will have to address the specifics identified above, in the section on the global ERM designation, and any other issues that arise.

Watch for the latest developments on a CAS ERM designation!

The author would like to acknowledge the valuable input of Chris Carlson, Kevin Dickson, and Steve D'Arcy.

created by irrational investor behavior were ignored, and we experienced the bursting of the tech bubble after this book was written. This is still a classic that is relevant to the current crisis, and a second edition was published in 2006. In the *Subprime Solution*, Shiller provides an overview of the causes of the current crisis and his proposed solutions. One of his theories is a worldwide bubble psychology social contagion that spreads in a manner similar to that of a disease epidemic.

predicted it. Aimed at the individual investor, the author warns of four threats to one's financial well-being: public and private debt, mortgages and mortgage-backed securities, hidden promises that will not be met, and the retirement time bomb. The author predicts a deepening of the current financial crisis and believes a depression is likely, providing advice for surviving it. The author's Web site, www.financialarmageddon.com, is worth visiting.

Crash Proof: How to Profit from the Coming Economic Collapse by Peter D. Schiff and John Downes (John Wiley and Sons, 2007, $27.95)

This book — targeted at a general audience — predicted the bursting of the housing bubble and the current financial crisis. The author compares the United States to a playboy who inherits a huge fortune and then dissipates it. He explains how the economy evolved to its current crisis state and predicts a further worsening of economic conditions. The book contains specific investment advice for individual investors.

Irrational Exuberance by Robert J. Shiller (Princeton University Press, 2000, $15.95)

The Subprime Solution: How Today's Global Financial Crisis Happened and What to Do about It by Robert J., Shiller (Princeton University Press, 2008, $16.95)

Robert Schiller coined the term "irrational exuberance" in the mid-1990s. Unfortunately his warnings about the bubble

Speculative Capital: The Invisible Hand of International Finance, Vol. 1. by Nasser Saber (Financial Times-Prentice Hall, 1999, $40)

This book provides a critique of modern finance theory. It also describes how the global economy has shifted to one increasingly dominated by speculative capital. According to the author, speculative capital, under the guise of arbitrage, may reduce the financial system's exposure to certain kinds of risk, but the price is that exposure to global systemic risk is greatly increased. This book explains how the current structure of financial markets will almost inevitably result in financial crises.

Fooled by Randomness: The Hidden Role of Chance in Life and the Markets by Nicholas Taleb (Random House, 2008, $27)

Black Swan: The Impact of the Highly Improbable, by Nicholas Taleb (Random House, 2007, $27)

Both of these books describe the behavior that led to the current financial crisis. *Fooled by Randomness* is more concerned with overconfidence and self-delusion on the part of managers and traders that cause them to take on excessive risks that inevitably lead to disaster. *Black Swan* is more concerned with extreme events and the widespread tendency to ignore the possibility of their occurrence. It addresses the ubiquity of the use of normal/lognormal distributions despite their inapplicability to real-life situations. Taleb is one of the most widely quoted experts on the current financial crisis.

PAUL E. LACKO

It Was Fun While It Lasted….

I wish I had a dollar for every time I've heard, thought, read, or said words to the effect of, "Where were the risk managers? What were they thinking? *Were* they thinking?" That would more than compensate me for the damage done to my retirement savings during 2007 and 2008. IRAs and 401(k) accounts and the like were devised a few decades ago to help reduce the possibility of social and financial disaster that could result when millions of Baby Boomers ultimately retire with nothing but Social Security benefits to live on. Retirement accounts were invented to solve a serious problem.

And then a new problem became apparent ten or fifteen years ago. The financial press regularly published troubling articles about the future financial difficulties that might ensue, should millions of Baby Boomers all reach retirement age and begin to convert their accumulated assets into cash. Massive amounts of asset sales on such a large scale could wreak havoc on financial markets. In short, the solution to one serious problem had created a different problem that might be just as big.

What to do, what to do….

The collapse in the financial markets during the second half of 2008 solved that second problem very nicely, didn't it? There was no conscious plan, obviously, to solve any problems. The individual actors surely operated independently, each in its own short-term self-interest. But it all worked out, and the system solved its problem by wiping out about half of what we had stashed away. Half the worrisome assets simply disappeared!

Was that the ultimate solution to the Baby Boomer retirement problem? Did that leave a manageable set of risks for mutual funds and individual investors? I think not. Stephen Moore, senior economics writer for the *Wall Street Journal*, recently wrote an op-ed piece in the *Journal* that describes the connections he sees between Ayn Rand's fiction and the world we actually live in. Referring to *Atlas Shrugged*, Moore wrote, "For the uninitiated, the moral of the story is simply this: Politicians invariably respond to crises—that in most cases they themselves created—by spawning new government programs, laws and regulations. These, in turn, generate more havoc and poverty, which inspires the politicians to create more programs…and the downward spiral repeats until the productive sectors of the economy collapse under the collective weight of taxes and other burdens imposed in the name of fairness, equality and do-goodism."

"The current economic strategy," Moore says, "is right out of *Atlas Shrugged*: The more incompetent you are in business, the more handouts the politicians will bestow on you…[W]e now treat the incompetent who wreck their companies as victims, while those resourceful business owners who managed to make a profit are portrayed as recipients of illegitimate 'windfalls.'"

And this brings me back to the questions I asked earlier. Where were the risk managers? What were they thinking? *Were* they thinking?

I have seen one serious attempt to answer these questions, an article called "Risk Mismanagement" in the 1/4/09 *New York Times Sunday Magazine*. Business columnist Joe Nocera wrote that models based on Value at Risk (VaR) became the standard quantitative approach to measuring and disclosing financial risks in the late 1990s. "In its most common form," Nocera wrote, "it measures the boundaries of risk in a portfolio over short durations, assuming a 'normal' market." Don't worry too much about outcomes out in the tail of the distribution, beyond 95% or 99%, because their probability of occurrence is so small.

Some experts cautioned against it. Nocera quotes David Einhorn, founder of hedge fund Greenlight Capital, that VaR is "relatively useless as a risk-management tool and potentially catastrophic when its use creates a false sense of security among senior managers and watchdogs. This is like an air bag that works all the time, except when you have an accident." Options trader Nassim Nicholas Taleb, better known as the author of *The Black Swan*, spoke to an audience at Columbia Business School a few months ago, Nocera writes, and Taleb said that "Wall Street risk models, no matter how mathematically sophisticated, are bogus…that risk models have done far more harm than good. And the essential reason for this is that the greatest risks are never the ones you can see and measure, but the ones you can't see and therefore can never measure…And once in a great while, huge financial catastrophes happen. Catastrophes that risk models somehow always manage to miss."

Risk models based on the normal distribution, such as VaR, may be useful over the very short span of several days, according to the experts Nocera interviewed, but measurements of risk beyond that time frame are meaningless. "Because we don't know what a black swan might look like or when it might appear and therefore don't plan for it," Nocera summarizes, "it will always get us in the end." Taleb puts it more succinctly: "Any system susceptible to a black swan will eventually blow up."

The problem is two-fold. First, the tail is probably fatter than we think. We tend to think of "the tail" as all those things that might happen once every couple hundred years. What if we are too confident about our assessment of how much we don't know? Maybe that tail is full of once-in-a-lifetime possibilities for unforeseen disasters.

Second, a probability distribution flattens out considerably in the tail. Above the 99% mark, for example, many distributions become so flat that a typical textbook illustration appears to be virtually uniform above 99%. For practical purposes—and risk management purposes, as well—the size of any "black swan" could be so large as to dwarf the tiny probability of its occurrence. The conditional expected value of that tiny tail area, in other words, might be huge.

Nonetheless, regulators wanted short, quick answers to questions about exposure to risk. Nocera suggests, although he doesn't quite come right out and say, that Wall Street quants used inadequate tools and used them improperly. Too few managers recognized when the models were flashing warning signals. The regulators had no plans for disaster control or relief when the entire, interconnected system crashed.

Nocera's article is light on technical discussion, of course. Nonetheless, you will find it entertaining and informative. (You can find a Web link to the article in the electronic version of this issue of *Actuarial Review* on the CAS Web Site.) Nocera concludes that the financial meltdown was inevitable. That "didn't mean you couldn't use risk models to sniff out risks. You just had to know that there were risks they didn't sniff out—and be ever vigilant for the dragons. When Wall Street stopped looking for dragons, nothing was going to save it. Not even VaR."

Risk management is not dead, and risk managers are still hard at work managing risks. There's hope for ERM. It is difficult for *anyone* to think clearly when regulators demand immediate answers and investors demand ever-increasing profits, but it is absolutely essential. Remember your limitations. Think clearly and act prudently. Believe that your last bonus check was an extreme event. AR

COMING EVENTS

Attend the 2009 ERM Symposium for the Latest on ERM Thinking and Practices

The seventh annual Enterprise Risk Management (ERM) Symposium will continue its tradition as the premier global conference on ERM with a broad range of sessions and seminars. Held April 29-May 1, 2009, at the Sheraton Chicago Hotel and Towers in Chicago, IL, the symposium will illustrate why a strong risk program is essential before, during, and after each relative cycle of results.

Over 30 different concurrent sessions will be offered during the seminar with multiple sessions within tracks covering decision making, risk identification, quantification, regulatory/rating agency, board issues, research, and an expert roundtable.

In addition, four general sessions will be offered including an "Ask the Experts" session on Friday, May 1. This closing session will offer a unique opportunity to sit down with risk management experts from the symposium's extended faculty as they answer attendees' questions on real-world problems. Other General Session topics include the "Role of ERM in Regulation, "Modeling Lessons Learned," and "A View from the Top: 360 Degree Perspective."

Attendees can choose to come early for a full day of seminars on Wednesday, April 29, that will cater to specific areas of interest. Topics will include a benchmark approach to quantitative finance, ERM best practices in banking and insurance, and valuation risk management. A separate registration fee is required to attend these seminars.

Take advantage of the early registration fee by registering before April 1. Learn more and register online at www.ERMSymposium.org.

Don't miss the opportunity to attend the ERM 2009 Symposium—*"Where cutting edge theory meets state of the art practice."* AR

Register for the 2009 Ratemaking and Product Management Seminar in Las Vegas!

Registration is open for the first CAS Ratemaking and Product Management (RPM) Seminar, held March 9-11 at The Mirage in Las Vegas. The RPM Seminar offers a wide range of continuing education opportunities for actuaries, underwriters, and other insurance professionals.

Super Crunchers author Ian Ayres will deliver this year's keynote address. Super crunching—analyzing massive databases to influence real-world decisions—is a new trend that looks at why thinking-by-numbers is the way to make smart decisions. Mr. Ayres is a preeminent expert on new methods of prediction and decision-making that are not only changing the way decisions are made, but the decisions themselves. The first 250 RPM Seminar registrants will receive a copy of *Super Crunchers,* so don't delay!

Over 50 different concurrent sessions will be offered during the seminar with multiple sessions offered within the following tracks:

- Regulatory
- Personal Lines
- Predictive Modeling
- Implementation Issues
- Workers Compensation
- Product Management
- Data Management
- Underwriting
- Commercial Lines

Sessions have been designed for both the novice and the experienced. For example, three sessions on generalized linear models (GLM) offers a range of learning opportunities guaranteed to demystify GLMs. From the first session, which introduces GLMs to those new to the topic, through the final session, which covers GLM refinements, attendees can progress from beginner to advanced knowledge.

Attendees can choose to come early for a full day of workshops on March 9. Select from one of three workshops offered: catastrophe modeling, product development, basic ratemaking. These three workshops are designed to provide a more in-depth, focused, creative, and highly interactive learning environment. A separate registration fee is required, which includes a continental breakfast, luncheon, and refreshments.

Attend the 2009 RPM Seminar to acquire the knowledge and tools to help your company grow in difficult economic times. Register before February 23 to avoid a $100 late registration fee. For more program information and to register, visit www.casact.org/rpm.

Exhibitors—Don't miss the chance to showcase your products and services at the RPM Seminar. Space is limited, so act today! Contact Mike Boa at mboa@casact.org for more information.

Bermuda to Host 2009 Reinsurance Seminar

The 21st annual CARe Reinsurance Seminar will take place on May 18-19, 2009, at the Fairmont Hamilton Princess in Hamilton, Bermuda. Located on the shores of a natural harbor, the hotel is an elegant tribute to Bermuda's old-world style.

Reinsurance Seminar session topics will cover catastrophe modeling, environmental liability, unique applications of exposure rating, and parameter risk. The CAS Committee on Reinsurance Research will host the Research Corner, a forum where participants can present projects they are working on or have recently completed that pose new problems and demonstrate innovative practical approaches.

A registration brochure for the seminar will be mailed to members in April. More information will also be posted on the CAS Web Site.

Laissez Les Bon Temps Roulez at the 2009 CAS Spring Meeting!

"Let the good times roll" at the 2009 CAS Spring Meeting in New Orleans! Have a spirited debate about a session while enjoying beignets at a café, let the theory of a paper presentation soak in while relaxing to a jazz band, or discuss an engagement with a client while strolling in the French Quarter. This year's CAS Spring Meeting will be held at the New Orleans Marriott on May 3-6, 2009. With a variety of educational sessions and a flavorful city, this meeting will have something for everyone.

Timely General Sessions Planned

At the forefront of the news today is the financial crisis, and it will surely still be front and center this spring. One general session will delve into the impact the crisis has had on the insurance industry and the insurance cycle with a leading economist providing background and timely insights. In 2005, Hurricane Katrina dramatically changed the city of New Orleans. How has the city changed or recovered? What has been done to mitigate the impact of a similar event in the future? What are the state and federal plans to support private market options for catastrophe funding? These and other related topics will be discussed in a general session focusing on the aftermath of Katrina and other recent catastrophes. A third general session will be a town hall meeting with independent auditors where we will gain their perspectives on a variety of topics, most notably reserve ranges. This session's format will give attendees the opportunity to ask questions directly to actuaries from the industry's biggest audit firms. Learn what improvements to best practices they would like to see and what issues are most common in year-end audits. Finally, the fourth general session will focus on professionalism and recent threats to the reputation of the actuarial profession.

Concurrent Session Topics Run the Gamut

In addition to the general sessions, the Spring Meeting offers over 30 concurrent sessions that will delve into reserve ranges, predictive modeling, trends, international issues, the financial crisis, risk management, regulation, the insurance cycle, workers compensation, auto, property, reinsurance, and business skills. The sessions will also include presentations of the ARIA and Hachemeister Prize papers from 2008, *Variance* papers, and much more!

Planning Your Trip

We remind you that the CAS has gone to "paperless" meetings, which means that presentation handouts will not be available on-site. Session slides will be posted on the CAS Web Site in advance, however, so you can print and bring handouts as desired.

At the 2008 Annual Meeting, we had our first fun run/walk, which was a wonderful break to get outside and enjoy the fresh air. It was such a success that we are looking into having a second fun run/walk in New Orleans.

Registration for the Spring Meeting starts at 4:00 p.m. on May 3 and the meeting ends at 11:45 a.m. on May 6, so when making arrangements, plan to attend the entire meeting and bring your session handouts and running/walking gear.

See You There!

The Spring Meeting is a great opportunity for attendees to benefit from a first-rate educational program and to take time for networking and social events. Look for the brochure and registration information in the mail and at www.casact.org in the near future.

The Top Ten Casualty Actuarial Stories of 2008

By Christina Gwilliam and Michael Christian

Our CAS thought leaders were surveyed to identify the top ten stories affecting casualty actuaries in 2008. Three major themes came from the survey:

The financial crisis has led and will continue to lead to a very challenging environment for actuaries.

As surplus has shrunk and capital has been squeezed, focus on underwriting profit through actuarial pricing and the allocation of capital through modeling will be crucial to the survival of a company.

The contraction of the economy and its impact on claim frequencies and severities must be monitored closely.

Economic recession will lead to fewer employment prospects, possibly affecting the actuarial profession.

Regulatory processes and agencies have failed to maintain the stability of the financial markets.

The collapse of Bear Stearns and Lehman Brothers and the growing outrage over the $50 billion investment fraud by Bernie Madoff will lead to many changes in the regulatory environment, both at the state and federal levels. This could include either more regulation of insurance holding companies or federal regulation of insurers, or both.

Actuaries should be able to expand their area of influence into new directions. For example, if credit default swaps are considered insurance products in the future, actuaries will certainly be asked for their opinion on the value of such instruments.

Catastrophe and financial models failed because of over-reliance on them, inclusion of unrealistic assumptions, or a combination of the two.

Actuaries must continue to take leadership positions in enterprise risk management (ERM) so that this field can continue to develop.

How the Stories Ranked and Why

The collapse of American International Group (AIG) was identified as the top news story for 2008 affecting casualty actuaries, with about half of the respondents naming this as their number one story. Respondents noted the far-reaching effects of AIG's fall: the need for risk modeling of extreme events, turmoil in the industry from a market price standpoint, turmoil in the industry concerning market share, possible sell off of AIG businesses, and job security.

The economic downturn accounted for the second- and fourth-ranked news stories. The fact that the Dow lost 35% of its value during 2008 was our second-ranked story. A related story, the shrinkage in property/casualty (P/C) insurer surplus due to investments and catastrophe losses, was ranked fourth based on a survey question noting the decrease in the first half of the year. Through nine months of 2008, P/C insurer surplus declined $39 billion, or 7.6%.

The sentencing of Ron Ferguson to two years in prison was news story number three based on our weighting system. Ron Ferguson, a name known by virtually every actuary as the co-creator of the widely used Bornheutter-Ferguson loss reserving technique, and Christopher Garand, another CAS member, were found guilty of conspiracy, fraud, and mail fraud as well as making false statements to the Securities and Exchange Commission (SEC) related to an arrangement between General Re and AIG. In remarks about this story, respondents expressed the continued need for professional standards and commented that the actions of a few can have a lasting effect on the whole. As actuaries move into management roles, they may be presented with ethical dilemmas not envisioned in typical actuarial roles.

The failure of regulation to prevent the current financial crisis was story number five. Respondents cited the lack of regulation of credit default swaps that led to AIG's solvency crunch and the SEC's apparent lax regulation of Bernie Madoff's funds as prime examples of the regulatory system's failure.

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How the Stories Ranked and Why

Rank	News Story	Actuarial Significance	Score	Votes: #1 or #2	Votes: Total
1	Hell Freezes Over—The Collapse of AIG	While the $143 billion government loan to the world's largest insurer was driven by credit default swaps that were not regulated insurance products, actuarial involvement in the underwriting of these products has been questioned.	853	46	61
2	Dow Loses a Third of Its Value from January 1 Level of 13,000+	Actuaries must contemplate the impact on claim frequency and severity, investment returns, pricing, capital requirements, and new product offerings.	614	27	48
3	Ron Ferguson Sentenced to Two Years in Prison	As actuaries move into management roles, they may be presented with ethical dilemmas not envisioned by typical actuarial roles.	558	13	49
4	P/C Insurer Surplus Shrinks $13 Billion during the First Half of 2008, Prediction of 5-10% Decline by the End of the Year	As insurers' financial cushions shrink, actuarial expertise in pricing, reserving, regulation, and capital allocation is critical.	540	8	47
5	Failure of Regulation in Preventing the Current Economic Crisis	Lack of regulation of credit default swaps, which led to AIG's solvency crunch, and lack of SEC regulation of Bernie Madoff's business may spark more regulation in other areas such as insurance. Actuaries are the key players in working within the confines of state regulation.	437	11	39
6	Could the Current Economic Crisis Have Been Averted with Better Models?	Actuaries have an opportunity to take a leadership position in ERM as the current processes have failed to reflect changing economic conditions and the tail correlation. Recent experience has highlighted that risks, once considered uncorrelated or with low correlation, must be revisited by actuaries.	434	12	39
7	The Pressure to Move to International Financial Reporting Standards Intensifies	Actuaries must stay abreast of financial reporting changes, including actions by FASB, IASB, and the SEC.	372	1	38
8	Obama 2008: How Will the New President's Actions Affect the Financial Services Industry?	With the expected growth in regulations, standards, and disclosures, actuarial involvement will increase. Given the large economic stimulus expected, there may also be a need for more or different insurance products.	368	1	38
9	Hurricane Ike Doesn't Fit the Model	Since the industry was surprised by the magnitude of losses from Hurricane Ike, a Category 2 hurricane with low wind speed and high storm surge, modelers must revisit geographic diversification assumptions and insurers and reinsurers must reconsider their catastrophe risk management plans.	342	3	36
10	Same Story, Different Year: Property Casualty Rates Decline for Fourth Year	Despite all the bad economic news, the market continued to soften for most of 2008 although property seems to be hardening and casualty seems to be stabilizing. Actuaries must use their influence in pricing discipline.	321	2	33

Speculation on whether better models could have averted the financial crisis was the sixth-ranked story. As mentioned above, actuaries have the opportunity to influence what should be considered in the models, e.g., the correlation of risks that were considered to have little or no correlation and extreme event scenarios. Additionally, all modelers need to ensure that assumptions based on historical data sets have predictive value.

Coming in at number seven again this year is the topic of accounting. Last fall, the U.S. Financial Accounting Standards Board (FASB) announced it was joining the International Accounting Standards Board (IASB)'s Insurance Project. If the project comes to fruition, the treatment of insurance contracts will be largely, if not totally, identical in U.S. GAAP accounting (promulgated by FASB) and International Financial Reporting Standards (IFRS, promulgated by the IASB). The specifics are still being determined, though the IASB has determined that some form of discounted value with risk margins is the preferred loss reserve treatment. Actuaries in the U.S. need to stay abreast of the accounting rule changes.

President Barack Obama's reform of the regulatory process and economic stimulus package was story number eight. Mr. Obama has been quoted as saying, "We have been asleep at the switch. Not just some of the regulatory agencies, but some of the congressional committees. . . ." He also said he might try to consolidate some regulatory agencies. With the expected growth in regulations, standards, and disclosures, actuarial involvement should increase. There will be a need for more or different insurance products if the stimulus package is approved.

With the expected growth in regulations, standards, and disclosures, actuarial involvement should increase. There will be a need for more or different insurance products if the stimulus package is approved.

The ninth-ranked story is the failure of the catastrophe models to accurately predict losses from Hurricane Ike. After making landfall in the Galveston Bay of Texas as a Category 2 storm, Ike continued to move north and caused significant wind and rain damage in ten Midwestern states. ISO's Property Claim Service estimates the insured losses over $10 billion, making it one of the costliest storms in history. The destruction caused by this wide storm with low wind speed and high storm surge is forcing modelers to revisit their model assumptions and insurers/reinsurers to revisit their catastrophe risk management plans.

The continued softening of the P/C market, our number two story from last year, ranked tenth this year. Nearly all lines of business experienced rate declines through most of 2008. Because of the financial crisis and large catastrophe losses, however, there are some signs of rates leveling off in the casualty sector and some hardening in the property arena. Low investment returns and underwriting losses should put upward pressure on rates in the future, but this may be offset by low demand for insurance from a contracting economy. The continuing challenge for actuaries is to exert their influence in pricing discipline, balancing the need for growth with the need for profitability.

The accompanying chart summarizes the results of the survey. As in prior years, the survey was compiled by the authors and sent to members of the CAS Board of Directors and Executive Council, current CAS committee chairs and vice-chairs, Regional Affiliate presidents, and others. Participants were asked to rank the top 10 stories, writing in any stories we missed, and to explain the significance of the stories. Fifteen points are awarded to a story receiving a first place vote, down to six points awarded to a story for a tenth place vote.

Continuing this year are the prizes for the best predictors of the consensus of all participants. Mr./Ms. Anonymous came in first in this process by selecting nine of the top 10 stories as well as selecting rankings most closely aligned with the final rankings of the top 10 stories. Thomas Myers, Ted Wagner, and Clive Keatinge all selected eight out of the top 10 stories and came in second, third, and fourth places, respectively.

Thanks to all of those who participated in this year's survey!

Working with What You Have—Other Considerations on Data Quality

By Yin Lawn

I would like to comment on the Ethical Issues Forum column, "Working with What You Got—A Question of Data Quality" (*AR*, August 2008). Should Kerry complete the analysis with the current data provided? I think the answer should be "yes," after considering the following concepts:

Concept 1. Not able to provide additional data vs. not wanting to provide data. First of all, we do not know for sure if it is due to ethical reasons or technical reasons that Kerry's client did not provide her with the data. We do not know if the client wants to hide something or simply does not have the data. What if the client simply does not have the data? Refusing to work just because the client doesn't have a specific set of data does not seem right. Actuaries who refuse to work simply because they cannot get a specific set of data will have very limited work opportunities outside of North America and Europe.

Concept 2. Needing data to quantify reserves vs. needing data to see if something is wrong. Kerry may require a lot of additional information and time in order to quantify a reserve in a changing environment, but maybe not if she simply wants to know whether something is wrong. Kerry can probably start with financial information (which she can easily obtain from the accounting department and reconcile to the financial statements) and do some testing to see if something "seems unusual."

Since Kerry already has done some testing and it shows no significant changes, she can proceed with the data given. She can adjust her assumptions to reflect the additional uncertainty.

Concept 3. The best way to calculate reserves vs. the only way to calculate reserves. There is usually more than one way to quantify the liability for a block of risks. If the best way of calculating reserves is not practical (or not possible), is there a second best way that is practical? There is always a degree of uncertainty in actuarial estimation, and different methods usually result in different degrees of uncertainty. Can Kerry use an alternative method and data, perhaps more uncertain, but less time-consuming and easier, if the best method and data are not available?

Concept 4. Estimating unpaid liability vs. calculating a result from a mathematical procedure with a specific set of data. Because of the way we were taught, a few actuaries may believe that the definition of "correct answer" is the same here as in the exams: a result from a specific mathematical procedure based on a specific set of data. If Kerry's definition of "right answer" is to make a case reserve adjustment based on a particular exam article, then she will not be able to do so when the set of data required in that article is not available. In real life, the objective of loss reserving is to estimate unpaid losses. This is not necessarily the same as obtaining a number from a mathematical procedure with a specific set of data.

In Kerry's case, it seems that she can still estimate unpaid losses with reasonable credibility even without the additional data.

Concept 5. Estimating reserves correctly vs. estimating reserves that comply with professional standards. Actuaries are expected to get the reserves right. However, our estimates are not always right. The key issues, even in a court of law, are usually whether we have complied with all the professional standards and whether we have made a mistake that shouldn't be made by the average actuary.

Since the current data still allows Kerry to do the analysis that complies with relevant professional standards, she should proceed with the data given.

In conclusion, after considering the above concepts, Kerry should try to proceed with the data given.

Additional Suggestions to Kerry

Actuaries often face tough decisions. The following may help Kerry and other consulting actuaries deal with tough decisions in reserving-related work:

1. Have a walk-away bottom-line. This is not only a professionalism issue but also a commercial issue. Kerry should always have a bottom-line based on minimum billable hours, maximum write-off, minimum data quality, and general feeling about the client. If her client can't meet her bottom-line requirements, she should not be afraid to refuse the work.

2. Trust your instincts. This is not a precise science. Our brains are much more complicated and sophisticated than our computer models. When Kerry feels something is wrong, even if she cannot explain why, then something is usually wrong.

Opinion, page 27

MARTY ADLER

Fanatic Volunteer

How strong is your passion for the football fortunes of your alma mater, or for any team for that matter? For Kelly McKeethan the passion is so great that it could not be contained—he had to write about it and let the world know. Kelly grew up in Oak Ridge, Tennessee, about 25 miles west of Knoxville, home of the University of Tennessee Volunteers. There are baby pictures of him in his bassinet wearing orange and white. One of his earliest memories is of the Gator Bowl game Tennessee lost to Texas Tech when he was three. The first specific play he remembers is from a game when he was five. His dad and he came home early from a family wedding to listen to Tennessee beat Auburn on the radio.

In his sophomore year at UT he skipped his cousin's wedding to go to the Tennessee-Alabama game, only to see them lose 47-30. It was a long ride home from Birmingham to Knoxville. The next year he had planned to go to the big game at Auburn but couldn't due to a church retreat. They listened to the game on the radio. When Auburn came back to tie the game at 26, everyone on the retreat started cussing, including the minister!

His most memorable game was at Alabama in 1995. Tennessee had not beaten their most bitter rival in ten years. Kelly actually bought an Alabama season ticket just for this one game. He took a friend from Chattanooga, an Alabama grad. During the summer he had started dating a young lady from Birmingham. She had made it clear on the first date that despite being from a family of Alabama fans, she didn't care about football. He and his friend stayed at her mom's house in Birmingham after the 41-14 Vols victory. He married the Birmingham belle the next June, and in 2009 they will celebrate their lucky 13th anniversary. He still holds the two ticket stubs in his wallet since that glorious night and expects to carry them to the grave.

Kelly started writing in a small way in the late '90s. After each University of Tennessee football game he sent an e-mail analyzing the game to his three former roommates. Over the years the group has increased to include over 30 friends, co-workers, and relatives. Several of them had encouraged him to write a book about the Vols.

That fit right in with Kelly's inclinations. He had always enjoyed writing. In high school he knew math and writing were his strongest academic loves. He decided to make a career out of math and enjoy writing as a hobby. Although the exams were grueling, he has no regrets. He had always planned to write "the book" after retiring, but after the emotional roller coaster of the 2007 season he decided now was the time.

Kelly started writing after Tennessee's stirring 27-24 win over South Carolina in late October 2007. He wrote a chapter a week and finished in the spring. He considers his writing schedule to have been roughly parallel to that of a spring exam, spending only a couple of hours a week writing, as over 95% of the book is written from memory. He did have to look up a few obscure statistics and team rankings. (I am impressed. I had to devote more than a couple of hours a week to studying.)

The book, *Orange Blooded: The Veins of My Life*, is written in chronological order of each football season of his lifetime. As he obviously cannot remember much from when he was small, several of the early years are packed into one chapter. With each passing year, Kelly has more vivid memories. The Southeastern Conference Championship season of 1985 and the National Championship season of 1998 get chapters all to themselves. All told, there are 20 chapters. At the end of each chapter, he honors the player who wore the number of the chapter. The book covers game details, specific plays, statistics—imagine that from an actuary—and his emotional reactions. He also includes some autobiographical details so the reader can see him develop from a small child to a married father of two. Among these he explains the rigors of the actuarial exams and laments having had to miss a few games along the way due to out-of-town seminars.

Finding a publisher was not easy, of course. Over the Internet he discovered Authorhouse, located in Bloomington, Indiana, where two of his cousins attended Indiana University. He and his initial contact person, a huge Hoosiers fan, hit it off right away with the college sports connection. His primary marketing contact is a big Notre Dame fan, who said that Tennessee fans were the only ones he had ever seen take over the stadium in South Bend. The book was published in June 2008. It is available at www.52699.authorworld.com.

Not surprisingly, the hardest part has been marketing—imagine that for an actuary. Kelly has had some success publishing newspaper articles in his hometown of Oak Ridge and has been on television in Chattanooga, where he currently lives, but other media outlets have not responded to the publisher's press release.

Kelly says that even though writing is a nonactuarial pursuit, in penning his work he used the actuarial skill of memorizing information that 99% of the world considers useless and reproducing it in a legible form.

Kelly McKeethan is vice president and senior pricing actuary at Bank of America.

MICHAEL D. ERSEVIM

Your Actuarial Horoscope for the New Year

ARIES (March 21–April 19)
You have more than one fresh start ahead of you—don't be afraid to reboot Vista often. Your lucky numbers for today are: 3.428, 1.417, 1.155, 1.096, and 1.043.

TAURUS (April 20–May 20)
There is harmony in the universal machinery that regulates the heavens. Get that filing in now!

GEMINI (May 21–June 21)
You learn that your coworkers are more or less of one mind—that you need to get the team moving and on to new projects. Focus them on personal hygiene.

CANCER (June 22–July 22)
CFOs are reawakening their chakras. Channel this energy to strengthen reserves.

LEO (July 23–August 22)
Your negative energy is blocking your ability to utilize MS Office fully. Look to leverage pre-existing analyses and presentations. Don't forget to update those headers and footers!

VIRGO (August 23–September 22)
Triangles are aligning with the 5th moon of Neptune. Multiplicative methods beware! Cape Cod is more than a summer vacation destination!

LIBRA (September 23–October 22)
Signs are strong for you this year. There are signs everywhere in your journey—dangerous signs abound! Oh, and take extra care before you sign that Actuarial Opinion.

SCORPIO (October 23–November 21)
Self-realization peaks for you this year. You will figure out who the sucker in the room is, and it is you. Repeat this self-affirmation after every meeting: "Mom still loves me."

SAGITTARIUS (November 22–December 21)
Karma will play a big role for you this year. Befriend a Life Actuary. This act of charity will come back to you 52.329-fold (on an actuarial NPV basis).

CAPRICORN (December 22–January 19)
You have finally found it—tranquility, solitude, inner peace, and enlightenment. However, you do need to get out of the library every once in a while.

AQUARIUS (January 20–February 18)
Berquist is in the house of Sherman—take care when adjusting your losses!

PISCES (February 19–March 20)
You need to relax today, no matter the insanity going on around you. Your mantra: "Remember, they're only underwriters."

DAVID CUMMINGS

Value of Lift— A Net Present Value Framework

In the May 2008 issue of the *Actuarial Review,* Glenn Meyers outlined a concept called "The Value of Lift." This concept provides a tool to estimate the value of more accurate estimates of loss in a competitive marketplace environment. In a nutshell, the Value of Lift is calculated by determining the profit that would be lost if a competitor "cherry picked" the best risks out of a company's book of business by using their more refined estimates of cost to offer them a lower premium. In this article, we extend the Value of Lift logic to a multi-year view. Our example helps to illustrate the impact of marketplace dynamics on an insurer who fails to adopt more refined rate segmentation. This illustration helps to introduce a framework for a traditional net present value analysis to evaluate whether to implement this segmentation strategy.

Review of Value of Lift

To refresh this topic, we use a portion of the example provided in the May 2008 *Actuarial Review*'s "Brainstorms" column. Table 1 represents a book of business with only three policies. The insurer currently considers these policies to all be part of the same rate classification, thus they all have the same expected loss costs and are charged the same premium. The insurer has set its premium in order to achieve an expected loss ratio of 50% (30/60). A loss ratio below 60% (36/60) will result in a profit to the company.

Based on new predictive information, however, it is possible for a company to implement more refined pricing segmentation that identifies that each of these policies has a different expected loss. A competitor could use this information to identify that Policy 1 is lower cost and could be offered a lower premium. If the policyholder accepts the lower premium, the insurer will be adversely selected against and will lose the profit of that policy. For the purposes of this article, we will assume that whenever the more accurate loss estimate is lower than the insurer's less refined estimate, the insurer will lose the profit from that policy. This is the idea of Value of Lift as described in the prior article. (See table 1)

Multi-Year Dynamics

However, the insurer's exposure to adverse selection is not over yet. With Policy 1 removed from the insurer's book, the average expected loss of the remaining policies will increase to 35. In order to maintain an expected loss ratio of 50%, the insurer will have to raise premiums to 70, which will place Policy 2 at risk. (See table 2)

With Policy 2 removed from the book, the average expected loss for the book increases yet again. At this point, the average expected loss has converged to 40—the expected loss that the competitor identified for Policy 3. As a result, the insurer is assumed to retain this policy while meeting its expected loss ratio target. (See table 3)

This illustration highlights in a simplistic way how the dynamics of a competitive marketplace favor the company that implements refined rate segmentation, and how the marketplace punishes the company that retains less precise estimates when better information is available. We should acknowledge that there are many complicating factors in the real world that make this a simplistic depiction of marketplace dynamics. Most glaring is that there is no assumption of price elasticity or other retention effects that would temper the insurer's policy losses. Also, there is no consideration of how the writing of new business would affect the insurer's book.

Still, this simple example provides insights that can help the actuary articulate the hidden cost of not adopting more refined ratemaking. This cost is one of dwindling market share and a gradual degradation of the book of business to eventually contain only the highest cost risks. The insurer may still remain profitable, as illustrated in this example, but there will be significantly reduced revenue and cash flow.

A Net Present Value Framework

This example helps to frame an approach for performing a sort of "cost-benefit analysis" to help decide whether to implement refined rate segmentation. The key insight is to recognize that without refined segmentation, cash flow will dwindle. This scenario then should become the baseline to compare to the costs and benefits of refined segmentation. Even if the refined segmentation will be implemented in a "revenue neutral" manner, it will result in higher revenue than the alternative of doing nothing.

To help see this point, consider two scenarios based on our earlier example. Scenario 1 is the "do nothing" case. It starts from Year 0, when the book has all three policies. At each year increment, a policy is lost, along with its premium and expected profit until year 3 when only Policy 3 remains. Thus the expected profit declines from 18 to 8. Scenario 2 implements enhanced segmentation in a revenue neutral manner. In this scenario, all three policies are assumed to be retained. There are, however, some marginal costs to implement this segmentation approach, including larger initial implementation costs in Year 0 with smaller recurring costs in subsequent years. (See Table 4)

With the projection of future profits in each scenario, we can calculate a Net Present Value (NPV) to determine which scenario provides the greater return over this period. The table shows the NPV values calculated using an assumed 10% rate of return. Scenario 2 has a significantly higher NPV than Scenario 1, even after considering the marginal implementation costs and no projection of increasing revenue. Therefore the insurer would prefer to implement enhanced segmentation.

Table 1

Policy #	Current Premium	Insurer's Expected Loss	Break-Even Loss Amt.	Accurate Expected Loss	Insurer's Expected Profit	Profit Lost Due to Adverse Selection
1	60	30	36	20	16	16
2	60	30	36	30	6	
3	60	30	36	40	-4	

Table 2

Policy #	Current Premium	Insurer's Expected Loss	Break-Even Loss Amt.	Accurate Expected Loss	Insurer's Expected Profit	Profit Lost Due to Adverse Selection
2	70	35	42	30	6	12
3	70	35	42	40	-4	

Table 3

Policy #	Current Premium	Insurer's Expected Loss	Break-Even Loss Amt.	Accurate Expected Loss	Insurer's Expected Profit	Profit Lost Due to Adverse Selection
3	80	40	48	40	8	

Table 4

Scenario 1 No Enhanced Segmentation		
Year	Premium	Expected Profit
0	180	18
1	120	2
2	70	-4
3	80	8
	NPV	20

Scenario 2 Enhanced Segmentation			
Premium	Expected Profit	Marginal Costs	Profit less Marginal Costs
180	18	10	8
180	18	3	15
180	18	3	15
180	18	3	15
		NPV	41

Property & Casualty Insurance Accounting in Asia—From the Eyes of an FCAS

By Xinxin (Alex) Xu

In Casualty Actuarial Society exams, the accounting material emphasizes U.S. GAAP and Statutory accounting and many CAS actuaries are familiar only with those accounting frameworks. Given the fast development of the property and casualty insurance (P&C) industry, and the large number of countries currently involved, Asia presents a unique opportunity for P&C actuaries to see things differently regarding insurance accounting.

As an FCAS with a U.S. background who works with more than 40 property and casualty insurance companies in Asia, looking into the differences among various accounting frameworks has been a routine task. It comes as no surprise that P&C insurance accounting varies by country and each country's accounting is different from U.S. GAAP to some degree. Although a few countries have both GAAP and statutory accounting requirements for insurance companies and differences exist between them, many countries have adopted statutory accounting principles for insurance contracts in their local GAAP accounting framework. As the P&C insurance industry developed in Asia over the last decade, accounting evolved in tandem. Insurance contract concepts have been adopted and efforts have been undertaken to align local GAAP more closely with International Financial Reporting Standards (IFRS).

As an FCAS with a U.S. background who works with more than 40 property and casualty insurance companies in Asia, looking into the differences among various accounting frameworks has been a routine task.

IFRS has a much greater impact than U.S. GAAP in this region and forms the basis of GAAP in several countries. Some countries, such as Singapore and Hong Kong, have already adopted IFRS 4 and localized its principles and concepts. IFRS 4 now exists, with only minor changes, as FRS 104 and HKFRS4, respectively. Unfortunately, since IFRS 4 is a work in progress, it does not yet address the critical concept of measuring technical provisions (in particular, risk margins and discounting) and so national practice still prevails. Singapore regulation requires a risk margin, often at the 75th percentile. When it comes to discounting, P&C insurers have made their own decisions. Some of them discount the whole provision including the risk margin; some discount the risk margin portion only; and some of them do not discount at all. In Hong Kong, there is no general requirement to maintain a risk margin. P&C insurance companies domiciled there can still use the undiscounted best estimate in their financial reporting. The deferral acquisition cost (which IFRS 4 neither requires nor forbids) is allowed in both systems. When Phase II of the IASB Insurance Contracts project is complete, greater consistency can be expected.

Though a formula-based incurred but not reported (IBNR) reserve calculation is still being used in some countries (Japan, South Korea), there is a trend towards switching to an actuarial approach. Countries like Vietnam and Thailand have offered options of either an actuarial approach or a formula-based approach. Efforts have been made in these countries to encourage P&C insurance companies to adopt an actuarial approach, but many companies are still using a formula-based approach because of its simplicity. For some countries where there is no indication of such regulatory change, IFRS conversion has been forced onto the agenda of P&C insurance companies' senior management because of acquisition or IPO activities.

While the terms "catastrophe reserves" and "equalization reserves" look unfamiliar to many new members of the CAS, a P&C actuary can run into these two terms quite often in Asia. Countries like Japan, India, the Philippines, Jordan, Vietnam, and others still require reserves of this type. They are basically set by using a certain formula and are required in statutory reporting due to the catastrophe exposure of those countries. However, a company in these countries preparing accounts under IFRS must exclude such reserves from its technical provisions.

An actuary can easily find the earned premium and unearned premium reserves (UPR) in the financial balance sheet; the calculation of earned premium is common practice in the U.S. This may not be the case in Asia, where different countries have used different rules to calculate the UPR. Many countries have adopted the "365th method," although the "8th" and "24th" methods are still common. There are several methods to calculate UPR, for policies less than a year in duration, for risks such as cargo. These methods range from a mandatory percentage of the contract premium to a method based on actual voyage days. Some countries like Japan have set a minimum for the UPR calculated, while others require liability adequacy testing of the UPR. In these cases, a premium deficiency reserve may be necessary.

In both U.S. GAAP and IFRS, a red flag should be raised when a reinsurance deal has suspicious features. Financial reinsurance must be treated differently than other types of insurance in the balance sheet. In some Asian countries, the perception seems to be different and reinsurance recoveries from financial reinsurance may be given credit. The type of the reinsurance contract has less substance in terms of the "insurance risk" in some Asian countries' accounting, compared to U.S. GAAP or IFRS.

It may surprise some CAS members that property and casualty insurance products with investment or saving features can be seen on the books of many Asian P&C insurers. For example, Japan and China have developed such products. For a time, when the investment market was doing well, those products provided strong growth for some P&C insurance companies that offered them. Methods have to be borrowed from life actuaries in order to assess the reserve adequacy for those products. This has the potential to be a joint CAS/SOA exam topic!

An actuary may spend his or her whole career observing the evolution of insurance accounting in only one country. Working in Asia has given me a chance to observe many different insurance accounting frameworks at once. And it is an exciting time because the IASB plans to release IFRS4 phase II in November 2009. A great amount of work will be required to address the upcoming accounting issues in Asian countries, just like everywhere else in the world.

Alex Xu works in a member firm of the Ernst & Young network and is based in Beijing. All views expressed are those of the author and not of any Ernst & Young firm. AR

25 Years Ago in the *Actuarial Review*

Megatrends

By Walter Wright

The February 1984 issue of the Actuarial Review *reported on a speech that Carl Honebein, CAS President, had given to the Canadian Institute of Actuaries.* Megatrends, *a book by John Naisbitt, was a 1984 bestseller that discussed ten significant trends that would have a worldwide impact in the coming years. Mr. Honebein talked about how some of these megatrends related to our profession and then discussed several "actuarial megatrends" that he had observed, highlighting changes to our profession that were getting underway 25 years ago.*

"From a club to a profession." He said that actuarial societies have grown from the period when they would hardly talk to each other to today's situation, where the society collectively are seeking governmental recognition and recognizing that to attain it involves strict attention to professional standards, codes of conduct, and discipline of members. "Licensing is going to happen," Honebein promised, "and it will be enforced..."

"From separateness to togetherness." Honebein pointed to the joint CAS/CIA meeting he was addressing, the development of joint examinations, a Council of Presidents of the five North American societies, and the cooperative efforts of the Canadian Institute of Actuaries and the American Academy of Actuaries.

"From insurance clerks (clarks) to business people." Because of the developments of the computer, the actuary has moved from a narrow world of tabulating and calculating, in work only a step above that of a statistician, to the world of reinsurance, brokerage, risk management, marketing, and management consulting. The growing number of actuaries who are now members of senior management also testifies to the trend.

Honebein urged actuaries to cultivate a sense of vision (they "have a long way to go to be truly effective in this regard") and thereby make sure that the need for their services will be overwhelmingly large. AR

The Actuarial Profession in Canada

By Steve Gapp

The Canadian Institute of Actuaries' (CIA) 2008 annual report offers a June 2008 membership count of 3,862, of which 3,064 members are fully qualified Fellows of the Institute. What do we do, where, and in which language?

Canada is officially a bilingual country. This mandates that the federal government conduct its business in both official languages (English and French) and provide government services in both languages. Sixty percent of the population speak English as their first language and 24% speak French.

Each province establishes its own language policy. Only New Brunswick is officially bilingual and Québec is officially unilingual (French). Inuktitut is also an official language in the territory of Nunavut, and nine aboriginal languages have official status in the Northwest Territories.

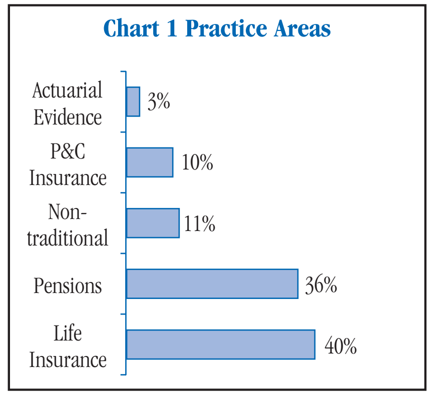
It follows that language is a consideration at the CIA's June annual gatherings and November general meetings. Most sessions are presented in English and simultaneous translation is available at all sessions. The CIA Web Site offers an English/French option.

The CIA was established as an Act of the federal parliament in 1965. The stated purpose of the CIA is to advance and develop actuarial science; to promote the application of actuarial science to human affairs; and to establish, promote and maintain high standards of competence and conduct within the actuarial profession. To my surprise, the CIA participates in the national election. In September it sent a questionnaire to the main national parties and in October circulated to members the responses it received from those parties.

The CIA is Canada's actuarial disciplinary body. Being that most CIA members are also members of U.S.-based organizations—AAA, CAS, American Society of Pension Professionals, and the Conference of Consulting Actuaries—a question could arise as to which organization has disciplinary jurisdiction. With that concern in mind, the CIA and "the U.S.-based organizations" in 2006 entered into a cross-border discipline agreement that assigns jurisdiction based on the location of practice; i.e., the country whose legal standards the actuarial work must satisfy.

The CIA's bylaws on qualification requirements for the conventional route to Fellowship specify that a person must either:

- successfully complete the examinations of the Society of Actuaries including the Fellowship Admission Course and the Canadian Institute of Actuaries' Practice Education Course (PEC), or



- successfully complete the examinations of the Casualty Actuarial Society, including the Part 7C exam and also the CIA Professionalism Workshop.

A person may also enroll with the CIA as an Affiliate or a Correspondent.

An actuary practicing in Canada can seek professional guidance from one of the CIA's committees. If, for example, the issue is P&C pricing, one is advised to contact the CIA's Committee on P&C Insurance Pricing. Seeking guidance from the CIA rather than the CAS or American Academy of Actuaries makes sense, of course, given that the CIA would be the arbiter of accepted actuarial practice in Canada should a complaint arise.

Continuing education requirements for CIA members are as follows. Members are required to complete 100 hours of combined structured and unstructured relevant activities, which includes at least 24 hours of structured activities, over the last two complete calendar years. Furthermore, these hours must include (1) at least 12 hours of structured activities related to the member's technical skills and (2) a combination of four structured or unstructured hours related to professionalism. Members are required to retain personal records of their CPD activities for a period of five years. The recently revised AAA standards are 30 hours per year, including at least three hours on professionalism and six hours of organized activity.

The ratio of CAS members (4,600) to combined CAS and SOA members (22,600) is one in five, but in Canada only one in ten actuaries works in P&C insurance. Chart 1 displays actuarial activity by practice (*CIA Web Site*). The "nontraditional" segment includes nonactuarial work.

Like the U.S., Canada has insurance regulation at the federal and state/provincial level. However, insurers have the option of federal regulation (90% of the Canadian insurance market—measured by assets—is under federal regulation). The actuarial practice in Canada is strongly influenced by the Office of the

Superintendent of Financial Institutions (OSFI), a federal agency established in 1987 whose mandate includes supervision of all federally regulated financial institutions, including insurance companies.

OSFI's Actuarial Division ensures that appropriate knowledge, advice, and standards are applied to OSFI's regulatory and supervisory functions. OSFI's Capital Division, which contains a number of actuaries, is responsible for developing capital standards for domestic financial institutions and contributing to the development of international capital standards.

OSFI works closely with the CIA to ensure that the CIA standards are appropriate and lead to acceptable valuations. OSFI sits on various actuarial practice committees and OSFI and CIA executive groups meet several times each year. In 2005-2006 OSFI and the CIA developed qualification standards for the Appointed Actuary (AA) in Canada.

Each insurer must appoint an actuary of the company, who shall be a Fellow of the CIA. The AA is required to prepare an annual valuation of the loss reserves and prepare a report on the insurer's future financial condition, which consists of stress-testing the most significant risks faced by the company. The AA is also required to meet directly with the board to present the results of those reports.

Automobile insurance is the largest single class of P&C insurance in Canada and the only line of insurance subject to rate regulation. A large portion of Canadian P&C actuaries are involved in the pricing of auto insurance. Workers compensation in Canada is run by government agencies and most actuaries practicing in this area are life actuaries. British Columbia, Manitoba, and Saskatchewan have monopolistic, government-run insurers for mandatory basic auto coverages. The provincial governments regulate these auto rates and desire that rates be calculated in accordance with accepted actuarial practice with allowance for social goals (rate stability, affordability) and operational limitations of the insurer.

Chart 2 shows that consulting holds highest appeal to actuaries practicing in Canada. The "other" segment includes university/college (1%) and financial institutions (2%).

Chart 3 displays employment by location and suggests that perhaps as many as one in four actuaries practices in French.

There are at least a dozen actuarial clubs, conferences and associations in Canada. Although they are listed on the CIA Web Site, they have no official connection with the Institute.

Two of these organizations are CAS Affiliates: the Ontario Conference of Casualty Actuaries (OCCA) and the Association des Actuaires IARD (IARD abbreviates "incendie accident et risques divers," meaning "fire, accident, and other risks"). The stated purposes of the OCCA and the AAIARD are identical: to advance the knowledge of actuarial science to problems of insurance other than life insurance; foster the education of actuarial students; promote high standards of conduct; and promote good fellowship among members.

Chart 2 FCIA Employer Type

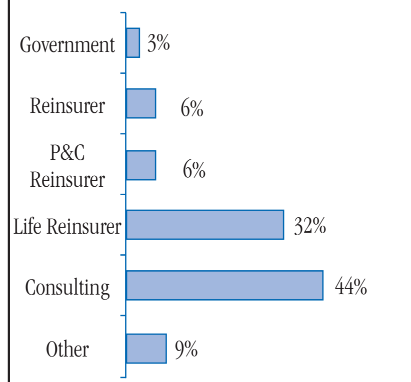
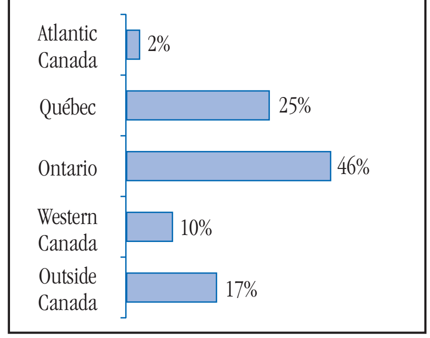


Chart 3 Where We Practice



Le Club des actuaires de Montréal estimates its membership at 700 and Le Club des actuaires de Québec at 315. All actuaries in the greater Toronto area are automatically members of The Actuarial Club of Toronto. Of its 1,000 members, 50 to 75 may be in attendance at any given event. Fifty-eight miles west of Toronto, the Waterloo Actuarial Club reports 175 members. Clubs in Winnipeg, Alberta, and Vancouver serve far fewer members than Québec and Ontario, with 100, 150, and 100 members, respectively.

Universities in Canada support the actuarial profession through programs designed to help the student learn the subject matter of actuarial exams. In 1989, the students at Université Laval (Québec) created the Actuarial Students' National Organization, ANEA/ASNA. Per the group's Web site, students created this association to unite the actuarial students from various universities. Today, ANEA/ASNA represents almost all actuarial students across Canada with its 13 member universities: Concordia, Laval, Manitoba, Montréal, York, Simon Fraser, Toronto, Université du Québec à Montréal (UQAM), Waterloo, Calgary, Western Ontario, Regina, and Alberta. ASNA publishes an annual magazine, which also appears on the Internet.

To learn more about the actuarial profession in Canada, or to practice a second language, the Institute's address is www.actuaries.ca.

It Is a Small (Actuarial) World After All

By Thomas A. Ryan, Member, CAS Task Force on Reserving Survey

It has often been said that the United States, United Kingdom, and Australia are three great countries separated by a common language. That may be true, but we are bound by common problems and proposed solutions for estimating unpaid claim liabilities. This was one of the messages from a general session of the 2008 CAS Annual Meeting in Seattle that compared the results of three recent surveys of actuaries in the U.S., U.K., and Australia regarding their approaches and observations related to loss reserving.

The session was moderated by CAS President-Elect Roger Hayne, who also provided a summary of the results of the 2008 U.S. survey on reserving methods initiated by the CAS Committee on Reserves (CASCOR). Jefferson Gibbs, a Fellow of the Institute of Australian Actuaries and Chair of the General Practice Council, and Derek Newton, a Fellow of the Institute of Actuaries from London and a member of the Institute's Council, also participated in the session to discuss the results of recent surveys regarding reserving methods from their native lands.

The first of the three surveys was launched in the U.K. in 2004. The Australian survey followed in 2006 and relied to some extent on the U.K. survey. The U.S. survey was completed in 2008 and built upon both the U.K. and Australian surveys in terms of scope and content. The similarities in the surveys allow for a unique opportunity to directly compare responses from all three countries. As you would likely suspect, there were a number of similarities in these responses, and a few notable differences.

- Methodology: While there are a variety of reserving methods in use, standard loss development/chain ladder methods are still by far the most popular in all three regions. Stochastic reserving techniques have not gained wide-spread use in any of the regions.
- Analysis Results: Respondents in all three regions believe company management or clients have a reasonable amount or high level of confidence in the results of the respondents' liability analyses. However, actuaries in all three regions are anticipating greater pressure from these audiences as we continue into the current soft market characterized by decreasing rates and profitability.
- Uncertainty of Results: When asked whether there is sufficient understanding by audiences of the uncertainty in any unpaid claim projection, 47% of respondents in the U.S. answered yes compared to only 14% of respondents in Australia. These results seem to indicate that either actuaries in the U.S. are doing a better job of communicating the concepts of uncertainty to their audiences or else doing a poorer job of understanding their audiences.

Other interesting items presented from the U.S. survey included comments related to the pressures felt by actuaries and how results of reserve analyses are used by their companies or clients. Many actuaries stated that the pressure on them for a faster turnaround has increased. Alternatively, some believe pressure on actuaries may have been reduced by Sarbanes Oxley regulations that require greater documentation and transparency of assumptions and selections. In regards to the use of the results of unpaid claim analyses, nearly 80% of respondents answered that their results were used either to establish booked reserves or to review carried reserve adequacy. Less than 25% of respondents stated their results were used in economic capital modeling or any type of enterprise risk management exercise.

Full details regarding the U.S. survey will be included in a white paper scheduled for release in June 2009 and will be presented at the 2009 Casualty Loss Reserve Seminar. The results should provide a useful benchmark for similar surveys in the future.

One of the most important lessons drawn from the session was that the problems faced and approaches used by actuaries in all three areas are similar. It was agreed by all that the key challenges currently facing all non-life actuaries in regards to estimating unpaid claim liabilities are:

1. improving the effectiveness of current reserving methodologies;
2. factoring effects of the underwriting cycle into liability estimates; and
3. effectively communicating with shareholders regarding variability and uncertainty in results.

Given the enormity and importance of these challenges, there is an obvious need to pool our limited resources for research and to share experiences when facing common problems. By providing a perspective on the issues and concerns that we all face in estimating liabilities, the Annual Meeting session should be a step toward further strengthening ties with our fellow actuaries abroad.

Two CAS Members are "Women to Watch" According to *Business Insurance*

Business Insurance's (BI) Women to Watch, an annual feature that highlights women leaders in the insurance industry, has named two CAS members to its 2009 watch list. CAS Fellows Rebecca C. Amoroso of Deloitte LLP and Susan Cross of XL Capital Ltd. were featured in the December 1, 2008, issue.

Rebecca C. Amoroso

Susan Cross

Ms. Amoroso is vice chair-U.S. insurance leader for Deloitte and is responsible for overall strategy and execution across tax, audit, consulting, and financial advisory services. Ms. Amoroso was also named "2008 Woman of the Year" by the Association of Professional Insurance Women, and is a frequent speaker on a variety of topics including emerging trends for the insurance industry, diversity in the workplace, and creating work environments that support different work and learning styles.

In Ms. Amoroso's *BI* profile, she credits her husband with steering her to an insurance career. A math major in college, Amoroso said that her husband "suggested I look into the actuarial profession." She studied for her first exam while still in college and started working as an actuary upon graduating. When asked what her best advice would be for those starting in the industry, she said, "Persevere. Don't give up and don't be afraid to stretch yourself."

As executive vice president and global chief actuary, Susan Cross oversees all actuarial functions for XL Capital worldwide. According to the *BI* article, she has served in many roles at XL, including senior VP and chief actuary of XL America Inc., and senior VP and chief actuarial officer of XL's reinsurance operations. Prior to joining XL, she was a principal and consulting actuary with Tillinghast-Towers Perrin for 15 years. Despite the professional demands, Cross has been an active CAS volunteer. She is currently an editor for *Variance*, the CAS's peer review research journal, and has served on the Committee on Review of Papers and the Examination Committee.

Ms. Cross also traces her desire to be an actuary back to college, where she found that the profession placed "what I love to do with mathematics in a business context." After starting out as an actuary for a consulting firm doing defined benefit pension work, Ms. Cross had the opportunity to move to Bermuda. "It involved changing from pension work to property/casualty insurance, which was an easy shift to make at that early stage in my career," she said. She admits, however, that growing up she really wanted to be a math teacher. "I really valued the good teachers I had, particularly in math where they made it really interesting."

Both candidates were chosen from hundreds of nominations by a panel of senior *BI* editors, composed of women and men. The article, which is featured annually, profiled all 25 of the Women to Watch.

Annual Meeting Attendees Run for Fun and Fitness—CAS 3K Fun/Health Walk Results

Freeway Park, an urban oasis of green space in the heart of Seattle, was the site of the first CAS Annual Meeting 3K Fun Run and Health Walk. Billed as the Catch-Me-If-You-Can Challenge, race participants chased a lead runner given a short head start with the goal of stealing his hat and wearing it proudly while making a run for the finish line.

More than 50 runners set off after Martin King, who donned an Elf costume and a bright green hat as the lead runner. Participants were invited to join in the fun and run in costumes, with a prize award for the best costume.

Congratulations to the race winners:

Open Division	Female	Anna Wetterhus	12:41
Open Division	Male	Justin VanOpdorp	8:43
Masters Division	Female	Roberta Garland	18:46
Masters Division	Male	Gene Connell	12:36

Giuseppe the Plumber, a.k.a. Scott Swanay, was awarded the prize for the best costume.

Prizes were provided by D.W. Simpson and Company. The complete race results as well as additional photos from the race can be found at http://www.casact.org/education/annual/2008/index.cfm?fa=challenge.

Left, Annette Goodreau, a.k.a. Donald Duck, (left) and Martin King, a.k.a. the Catch-Me-If-You-Can Elf, gear up for the first-ever CAS Annual Meeting 3K Fun Run and Health Walk. Ms. Goodreau chairs the CAS Program Planning Committee.

Center, Justin VanOpdorp and Anna Wetterhus won the Open Division.

Right, Scott Swanay, a.k.a. Giuseppe the Plumber, won for the best costume.

New Fellows Admitted November 2008

***Row 1, (left to right)**: Mathieu Gravel, Nora Newman Benanti, Beth Ann Robison, Kexin Li, Wasim Chowdhury, **CAS President Chris Carlson,** Xiaoli Ma, Ian Christopher Asplund, Megan Laurissa Astudillo, Jennifer Lynne Blackmore.*

***Row 2, (left to right):** Jared Gabriel Smollik, Christopher Nicholas Otterman, Eliade Mihai Micu, Kevin Christopher Mahoney, Richard James Mills, Gregory Sergey Babushkin, Leland S. Kraemer, Andrew Loach, Hungchi Andy Chang.*

***Row 3, (left to right):** Moshe C. Pascher, Scott J. Rasmussen, Bradley J. Andrekus, Max Harpo Mindel, Kevin James Christy, Jason Jennings Culp, James Lohman Pearson, Keith Resnick Berman.*

***Row 4, (left to right):** Mark R. Westmoreland, Joshua Adam Taub, William Paige Rudolph, Darryl R. Benjamin, David Michael Andrist, William Maurice Arthur, Jacob C. Fetzer, Jean-Francois Bolduc.*

***Row 1, (left to right):** Dustin J. Loeffler, Stephanie Anne Miller, Paige Marie DeMeter, Randi Margarete Dahl, Kanika Vats, **CAS President Chris Carlson,** William H. Erdman, Steven Lowell Turner, Dana E. Embree, Andrea Wong Cablayan.*

***Row 2, (left to right):** Scott Allen Donoho, Joel M. Smerchek, James Michael Smith, Evan Pearse Mackey, Laura T. Sprouse, Samantha Elizabeth Steiner, Yan Lap Jess Fung, Ricky R. Poulin, Richard Cambran Soulsby.*

***Row 3, (left to right):** Liming Lin, Dawn Marie Thayer, Lucas James Koury, Mathieu Farrier, Vincent Quirion, Cody William Cook, Jeffery Joseph Smith, Jamie Weber, Luyang Fu.*

***Row 1, (left to right):** Yong Jiang, Christina Dione Abbott, Tho D. Ngo, Paul Jeffrey Hurd, Lisa K. Juday, **CAS President Chris Carlson,** Annie-Claude Jutras, Christine Béland, Jeannette Marie Haines, Agnes Ho Sum Cheung.*

***Row 2, (left to right):** Zhijian Xiong, Yanjun Yao, John Richard Emig, Solomon Carlos Feinberg, John Arthur Krause, Joanna M. Solarz, Elena Claudia Iordan, Laura Nicole Cali.*

***Row 3, (left to right):** Vincent Ha, Guowen Zhang, Vikas Pravin Shah, Carl Chang, Yongxing David Li, Ian Philip Sterling, Justin L. Albert, Pierre-Alexandre Jalbert.*

***Row 1, (left to right):** Karine Julien, Hussain Z. Dhalla, Dusan Kozic, Nadiya Rudomino, **CAS President Chris Carlson,** Heidi Marie Garand, Marina Vaninsky, Guillaume Benoit, Wee Keat (Kenny) Tan, Chung Man (Janice) Ching.*

***Row 2, (left to right):** Weina Zhou, Scott Andrew Kaminski, John Michael Jansen, Kan Zhong, Rebecca Ann Polunas, Christian Werden, Thomas Wesley Vasey, John Qiang Su, Steven Michael Wilson.*

***Row 3, (left to right):** Mark Robert Hoffmann, Christopher James Stoll, Kamil Jasinski, Sara Lynn Kleve, Ann Min-Sze Wong, Xueming Grace Wu, Kirt Michael Dooley.*

***Row 4, (left to right):** Wei-Chyin Tan, John Spencer Wideman, Jason Neil Harger, Jacob John Kelly, Eric Vaagen.*

***New Fellows not pictured:** Eve Ingrid Adamson, Hussain Ahmad, Waswate P. Ayana, Aaron J. Beharelle, Steven G. Brenk, Seth Lee Marshall Burstein, Derek Parker Chapman, Zhijian Chen, Jeffrey Neil Farr, Andre Gagnon, Evan Wright Glisson, Amit K. Gupta, Shira Lisa Jacobson, Xiang Ji, Guanjun Jiang, Wen Kong, Yun Ling, Cheuk Kei Liu, Dorothy Lentz Magnuson, Jerrel Harlan Mast, Angela Garrett McGhee, Daniel John Messner, Aran Jee-Yun Paik, Michael William Payne, Zia Rehman, Chad R. Schlippert, Shengbo Tang, Jaya Trivedi, Dehong Xu, Fan Sarah Ye, Bin Yuan, Junya Zhang.*

New Associates Admitted November 2008

Row 1, (left to right): *Jun Zheng, Matthieu Jasmin, Kristen Marie Gilpin, Mark Daniel Komiskey, Thomas Patrick King,* ***CAS President Chris Carlson,*** *Baohui Ning, Wen Hung Leung, Leroy Haile-Selassie Mattic, Xiaomin Wang.*

Row 2, (left to right): *Ryan Andrew McAllister, Sandy Wu, Matthew Jay Westenberg, Feng Ge, Joyce Lee, Ping Wang, Jason Pessel, Loic Grandchamp-Desraux, George Lawrence De Graaf, Katy Jo Cuthbertson.*

Row 3, (left to right): *Clinton Garret Walden, Stephanie Elizabeth Booth, Jennifer Lee Heizer, Stephen John Bruce, Edward Daniel Chiang, Alex Gerald Kranz, Damian Thomas Bailey, Yuan-Hung (David) Yu, Jennifer Janae Jabben, Jiunjen Lim, Andrea Ying Pan.*

Row 4, (left to right): *Jasmin Alibalic, Derek Matthew Holmes, Amit Verma, Elizabeth Janice Brown, Jonathan T. Marshall, Seth Alan Goodchild, Christian Kleven Myers, Joshua Matthew Grode, Jeffrey H. Carter.*

Row 1, (left to right): *Brian Chiarella, Hsing-Pei (Cindy) Chen, Aaron Alexander Wright, Edmund Daniel Douglas,* ***CAS President Chris Carlson,*** *Jennifer Yunqi Mo, Min Huang, Edward Chun Ming Lam, Allen Christopher Long, Jennifer Lynn Cheslawski.*

Row 2, (left to right): *Andrew John Evans, Tei Tuan, Debra Anne Maizys, Flora Po Lam Chan, Jia Liao, Samuel K. Nolley, Luke Ellis Porter, Gregory Andrew Finestine, Frederic Saillant.*

Row 3, (left to right): *Yen-Chieh Tseng, Jason Michael Ramsey, Amber Leigh Bentley, Tracey Ellen Steger, Kimberly Ellen Lacker, Jennifer Kowall, Elizabeth Mary Cashman, Jason E. Abril, Eric Chapleau, Guillaume Langevin.*

Row 4, (left to right): *Daniel James Plasterer, Ryan David Hartman, Brent Michael Petzoldt, Simon Alexandre Séguin, Sebastien Vachon, James Emanual Davidson, Gordon Carl Thompson, Arthur Jerzy Zaremba, Terrence Dawayne Wright.*

Row 1, (left to right): *Sean Michael Bailey, Shane Paul Vadbunker, Erica Lynn Eliashevsky, Jill Andrea Frackenpohl,* ***CAS President Chris Carlson,*** *Kristin Harp Monopolis, Justin Joshua Brenden, Jess Barton Broussard, Michael Bryant Stienstra, Kathleen Suzanne Ores Walsh.*

Row 2, (left to right): *Fritzner Mozoul, Emily Ruth Stoll, Elisa Pagan, Kelly Marie Mattheisz, Anna Zayons, Yu Zhang, Yan (Olivia) Zhang, Miriam Elizabeth Fisk, Kimberly Elaine Yeomans, Eric David Gilham.*

Row 3, (left to right): *Micah Lee Lenderman, Rodney Christopher Kleve, Jason Benjamin Kurtz, Ning Wang, Yuting (Tina) Fan, Josie Lynn Fix, Donna Cin On Chiu, Daria Lynn Thomas, Jenni Elizabeth Prior.*

Row 4, (left to right): *Patrick Arthur Hayden, Nicholas Damien Thoemke, Brian Douglas Bender, Nicholas Anthony Papacoda, Michael Robert Sadowski, Li Zhang, Richard Charles Frese, Timothy Ray Porter.*

Row 1, (left to right): *Kenneth Wayne Doss, Liza Wong, Robert Alan Cole, Maxime-Frederic Brochu-Leclair, Zachary James Martin,* ***CAS President Chris Carlson,*** *Lily Kayen Lam, Natalia S. Dimitrienko, Johnny Chen, Sen Chen, John M. Koch.*

Row 2, (left to right): *Stephen Robert Sten, Erin Ashley Groark, Melanie Rebecca Allred, Ping Yang, Shaun Patrick Cullinane, Chelsea Colline Myers, Nicole Kristine Parrott, Jacob Daniel Roe, Jennifer Margaret Webb, Thomas Patrick Heise, Anthony David Salido, Richard Paul Moore, Yan Zhang.*

Row 3, (left to right): *William Allen Meers, Daniel Steven Silverstein, Jim Lee Flinn, Jordan Paul Comacchio, Todd Richard Rio, Gregory Patrick Larsson, Ryan Nolan Voge, Jed Nathaniel Isaman, Kelly Suzanne Billings, Xiaoyu (Eve) Sheng, Sheng-Fei Huang.*

Row 4, (left to right): *Daniel M. Padilha, George Lawrence De Graaf, Stephen Anthony Knobloch, Gregory Martin Talbot, Chuan Cao, Ryan James Crawford, David Ménard, Simon Careau, Philippe Farrier, Ashley Carver Roya.*

Row 1, (left to right): *Iva Yuan, Jey Siew-Won Loh, Shan Zhuge, Xiaohui (Cindy) Wu,* ***CAS President Chris Carlson,*** *Aleta Jana Stack, Julie Ann Walker, Kathleen Jean Gunnery, Amy Michele Fournier.*

Row 2, (left to right): *Mitra Afshani Sanandajifar, Nadege Bernard-Ahrendts, Roselyn Mansa Abbiw-Jackson, Michael James Hartshorn, Ashley Aron Lambeth, Simon John Lilley, John Stephen Bogaardt, Guanrong You, Jarrett Durand Cabell, Gregory Alexander Ryslik.*

New Associates not pictured: *Kelly Marion Aimers, Elizabeth Ann Buhro, Yung-Chih Chen, Joseph Carl Christopherson, Melissa Chung, Robert C. Davies, Mario DiCaro, Orla P. Donnelly, Gregory Matthew Fanoe, Tricia Devan Floyd, Steven Gregory Gentle, Brian Patrick Gill, Jio Young Goh, Linda Grand, Legare Westfall Gresham, Wei Juan Han, Stephen Michael Harter, Keith Edward Henseler, Christopher Edward Holcomb, Chia-Han Hsieh, Sherry Shih-Yuh Huang, Christine Lin, Lenard Llaguno, Inga Kasatkina, Craig Stuart Kerman, Benjamin Jerome Kimmons, David C. Korb, Jinghua Kuang, Trevor James Leitch, Megan E. Link, Frederic Matte, Kelli Rae McGinty, Simon Matthew Mellor, Dawn Elizabeth Morelli, Kelly Ann Murphy, Douglas Robert Nation, Adam Kevin Niebrugge, Brent Justin Otto, Michael Grant Paczolt, Damon William Paisley, Ming Yan Poon, Andrew David Reid, James Michael Riley, Linda Ling Hwee Sew, Peixi Si, Sergey S. Siderov, Ann Marie Smith, Jessica Ruth Sweets, Ethan Kenneth Triplett, Mick Arthur Vassilev, Michael Thomas Villano, Chong Wang, David Edward Warneke, Anna Marie Wetterhus, Jeffrey H. Xia, Dominique Howard Yarnell, Qinnan Zhang, Xin Zhang, Yuling Zhou, Huina Zhu, Cyril Mas Zormelo.*

Opinion, From page 13

3. Have a plan for the worst scenario. Kerry can work under the assumption that the client has something to hide and prosecutors will probe the company soon. Kerry should document all assumptions and communications. She must be able to demonstrate not only that she has complied with all the relevant professional standards, but also that she has done everything that can be done in the given situation.

Yin Lawn, FCAS, works for Centum Consulting in Taipei City, Taiwan.

Actuarial Foundation Update

THE ACTUARIAL FOUNDATION

Foundation Scholarships Available

The Actuarial Foundation is offering the following scholarships and award:

Diversity Scholarship

Formed in 1977 as a joint effort by the CAS and the SOA, the Actuarial Diversity Scholarship is an annual scholarship that encourages for African American, Hispanic, and Native American students to pursue pursuit of careers as actuaries. Through the years, this scholarship has opened the door to the actuarial profession for hundreds of minority students. In 2008, the Scholarship program transferred to The Actuarial Foundation to further strengthen, increase, and to assure the continuation of a diverse and high-quality actuarial candidate pool. We are pleased to announce that the Foundation will be awarding its first scholarships in 2009.

John Culver Wooddy Scholarship

The Wooddy Scholarship was established in 1996 by the estate of John Culver Wooddy, a distinguished actuary who set aside funds to provide scholarships to actuarial students. Applicants must be receiving their undergraduate degree by August 31, 2010; rank in the top quartile of their class; have successfully completed one actuarial examination; and be recommended by a professor from their school. (Limit one application per school)

Actuary of Tomorrow—Stuart A. Robertson Memorial Scholarship

This scholarship was established in 2006 to honor Stuart Robertson's dedication to excellence and recognize his positive influence on the professional lives of many colleagues. Applicants must be a full-time undergraduate student entering as a sophomore, junior or senior in the fall 2009/2010 term; must have a minimum cumulative GPA of 3.0 (on 4.0 scale); and have successfully completed two actuarial exams.

For more information on these scholarships, visit the Foundation's Web Site at /www.actuarialfoundation.org.

Wynn Kent Public Communication Award

The Wynn Kent Public Communication Award is given out annually to recognize a member of the actuarial profession who has contributed to the public awareness of the value of actuarial science in meeting the financial security of society in the fields of life, health, casualty, pension and other related areas. For more information or to nominate someone, visit www.actuarialfoundation.org. The nomination deadline is March 15. AR

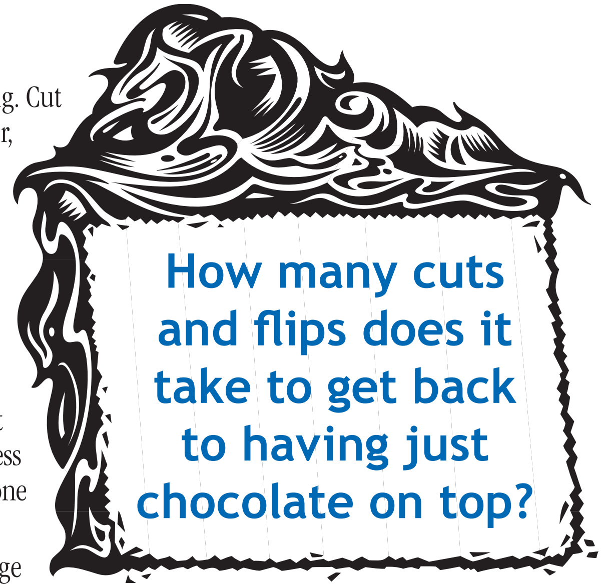
JOHN P. ROBERTSON

Cake Cutting

Consider a normal round white cake with chocolate frosting. Cut a 90-degree slice (one-fourth of the cake) and flip it over, and put it back where it came from. Now the cake has 1/4 of the top white and 3/4 chocolate. Cut another 90-degree slice counterclockwise from, and adjacent to, the first slice and flip it over. Keep going, counterclockwise. After 8 such cuts and flips, the cake is back to having only chocolate on the top. If you used 180-degree cuts, it would be back to having all chocolate on top after four such cuts and flips.

Now suppose the cuts are 181 degrees. How many cuts and flips does it take to get back to having just chocolate on top? Here's a hint—it takes less than 10 flips. For extra credit, what happens if the angle for the slices is one radian (pi/180 degrees)?

This puzzle was given as one of Stan Wagon's Macalester College Problems of the Week. Wagon cites *Mathematical Mind-Benders* by Peter Winkler, published by AK Peters.



Make Some Isosceles Triangles

The puzzlement was to place seven points so that no three are on a straight line and any three points are the vertices of an isosceles triangle (an isosceles triangle has two sides that are equal length).

One solution is to start with five points in a plane at the vertices of a regular pentagon. Then place two more points on the line "l" through the center of the pentagon, perpendicular to the plane, so that the points are on opposite sides of the plane and equidistant from the plane.

John Herder gave the above solution and two more, "A second construct begins with the same five points on a plane at the vertices of a regular pentagon and one point 'a' above the plane on line 'l'. Calculate the distance 'z' from any of the five original points to point 'a'. Place the seventh point 'b' on line 'l', 'z' units further from the plane than 'a'.

"A third construct begins with the same five points on a plane at the vertices of a regular pentagon and one point 'a' above the plane on line 'l'. Calculate the distance 'z' from any of the five original points to point 'a'. Place the seventh point 'b' on line 'l', below the plane, 'z' units from 'a'."

David Atkinson gave a solution in one word, "Chrysler." Think about it. Jon Evans provided coordinates in 6-space for the regular 7-simplex. Not only are every three points the vertices of an isosceles triangle, they are the vertices of an equilateral triangle!

In addition to the first solution given above, Eric Savage gave three more solutions, "The six vertices of an equilateral triangular prism, whose height is also equal to the length of the sides of the triangles, plus the midpoint of the segment joining the circumcenters of the triangular faces. (This seventh point is the circumcenter of the prism.)

"The six vertices of a truncated tetrahedron, plus the circumcenter of the truncated tetrahedron. (The tetrahedron is not regular.) The particular truncated tetrahedron is formed by joining three congruent isosceles trapezoids, whose vertices are four of the five vertices of a regular pentagon, along their nonparallel sides.

"An irregular octahedron, plus its circumcenter. The particular octahedron can be visualized by placing an equilateral triangle above and in reversed position above a larger equilateral triangle, with each vertex of one starting triangle connected to the two adjacent vertices of the other starting triangle. The ratio of the sides of the starting triangles must be the golden ratio (1.61803…:1) and the distance between the planes containing them must be such that the triangles formed by two points of the smaller triangle and one point of the larger are also equilateral, thus all of the edges of the octahedron are congruent, except for those that make up the larger triangle."

David Uhland submitted two solutions and suggested as a follow-up to determine whether there can be eight points in 3-space so that any three form an equilateral triangle. Neither David nor I have yet determined whether this is possible. AR

Scenes from the 2008 CAS Annual Meeting

CAS members met in Seattle for the 2008 CAS Annual Meeting. Following is a record of some of the meeting's happenings.

1


1. A proud new member. *New CAS Associate Xiaohui "Cindy" Wu stands with other members of her graduating class. Ms. Wu is one of 230 Associates who were admitted to the CAS in November 2008.*

2. Party on! *Newly minted CAS Fellows and Associates reveled with their colleagues, guests, and family members at the Monday night reception, held November 17. From left to right are Doris Lee (FCAS 07), Megan Poulin, Ricky R. Poulin (FCAS 08), Ryan McAllister (ACAS 08), Beth Brown (ACAS 08), and Lori Kraemer.*

3. Take note. *Don Mango points out the CAS Centennial Goal in the Annual Meeting's onsite program. Mr. Mango was a presenter for the Annual Meeting General Session, "Understanding Capital and When You Really Need It—Lessons Learned or Not Learned from Subprime," which was held November 17.*

4. Getting their propers. *New Associates stand and are recognized during the Annual Business Session. They are (left to right) Daria Lynne Thomas (in background), Shane P. Vadbunker, Sebastien Vachon, and Tei "Denny" Tuan.*

5. Naming names. *Ken Quintilian reads the names of the new Associates admitted at the 2008 CAS Annual Meeting.*

6. Before it begins. *CAS Board members Wayne Fisher, Michael Wacek, and Morton Lane enjoy a moment before the start of the CAS Annual Business Meeting. Mr. Lane was appointed to the CAS Board in November 2008.*

7. A family affair. *CAS President Chris Carlson (left) poses with Mario and Katie DiCaro and their son Jonas. Mr. DiCaro was admitted as a CAS Associate in November 2008.*

8. Words to the wise. *John Kollar, incoming CAS President, gives the presidential address.*

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All photos are courtesy of Paul Dudley Photography.

The Banks Invented ERM and They Blew Up, So Why Should We Bother?

By David Ingram, CERA, FRM, PRM

Seat belts have been widely touted to be highly effective in reducing fatal injuries from auto accidents. Yet, despite requirements that drivers and passengers "buckle up," there are still about 40,000 traffic fatalities every year in the U.S. So one might conclude that seat belts just do not work all that well.

But go past the headline and read the whole story. You'll find that in about 60% of the fatalities the people were not wearing their seat belts. So putting seatbelts in all cars and requiring their use is not sufficient. People must actually use them!

So it is with ERM. A number of people have observed that banks, long the advocates of ERM, have been struggling mightily in the past year and struggling because they have mismanaged their risks. But dig a little deeper into the story and you'll find that, just like seatbelts, ERM must be effectively applied to have the desired result.

This is the conclusion of an excellent report produced in spring 2008 by an international group of banking regulators.[1] The report analyzed the experiences and ERM practices of 11 major banks and securities firms in 2007 through the first part of the current financial market turmoil. The report looks at the differences in ERM practices among the banks that were more successful during 2007 and the practices observed at firms that experienced greater difficulty in 2007.

Four differences in practices emerged:

1. The better banks quickly shared risk and exposure information broadly among business unit, risk management staff, and top management. They started reacting to the emerging issues as much as 12 months earlier than the banks without these practices.
2. The better banks used rigorous internal procedures to evaluate their risk positions. These practices and models were consistent across all businesses.
3. The better banks had a centralized area that coordinated cash planning. They generally tried to avoid or limit activities that created large contingent liquidity needs and set incentives to make that activity unattractive to business unit management.
4. The better banks used multiple risk assessment tools and metrics and generally had very adaptive risk models. They tended to track net and gross positions as well as notional and market values.

So what can insurers take away from this? First and foremost, ERM was not the cause of the banks' problems; lack of effective ERM execution was.

In just the same way that traffic fatalities are not necessarily evidence of ineffective seatbelts, bank subprime losses are not failures of risk management. ERM can look like it is implemented in benign markets, but a half-hearted ERM program will usually not have the desired benefit when times get tough.

Based on the report, insurers should be concerned if they find that:

- Business units are empowered to add significantly to risk concentrations without frequent disclosures to top management
- Business units all have their own risk models
- Risk sign-off sometimes relies totally on the presumption that someone else is doing good analysis
- Contingent risks are not usually identified
- Changes to their risk models need to be planned out a year in advance
- The pervasive attitude in the firm is that "nobody believes those stress tests anyway, so we don't put much time into them"

On the other hand, insurers should be encouraged if their risk management programs include:

- Open communications between business units, risk management staff, and top management
- Enterprise-level decision-making about major risk accumulations
- Systematic internal evaluation of risks
- Low reliance on third-party risk evaluations
- Identification of and plans for contingent risks
- Incentives for business units to minimize contingent risks

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[1] "Observations on Risk Management Practices during the Recent Market Turbulence," March 6, 2008, Senior Supervisors Group.

New Issue of *Variance* Now Available

The fourth issue of *Variance: Advancing the Science of Risk* has been published. The complete text of the articles described below can be accessed online at www.VarianceJournal.org.

All actuaries, especially those working in insurance, are constantly exposed to the results of small samples from skewed distributions. In **"Yep, We're Skewed,"** Kirk G. Fleming discusses the need for actuaries to be on guard and not fall back on easy assumptions that are appropriate for results from symmetrical distributions.

One of the most commonly used data mining techniques is decision trees, also referred to as classification and regression trees, or C&RT. Richard A. Derrig and Louise Francis, in **"Distinguishing the Forest from the TREES: A Comparison of Tree-Based Data Mining Methods,"** introduce some publicly available regression tree approaches and explain how they are used to model four proxies for fraud in insurance claim data.

In **"Parameterizing Payout Lag Time Distributions,"** Rodney Kreps models a claims process as a random time to occurrence followed by a random time to a single payment. Since accident-year payout data available is aggregated by development year rather than by payment lag, those probabilities are calculated and the payout lag time distribution parameterized to maximize the fit to data.

Stijn Desmedt and Jean-François Walhin compare the point of view of the regulator and the investors concerning the required solvency level of an insurance company in **"On the Subadditivity of Tail Value at Risk: An Investigation with Copulas."** The authors assume that the required solvency level is determined using the Tail Value at Risk and analyze the diversification benefit, both on the required capital and on the residual risk, when merging risks.

In **"Modeling Loss Index Triggers for Cat Bonds: A Continuous Approach,"** María José Pérez-Fructuoso proposes a method for the continuous random modeling of loss index triggers for cat bonds. Under the premise that the total incurred loss of the hedged catastrophe consists of the amount of reported losses plus the amount of incurred-but-not-yet-reported losses, the author's basic hypothesis is that the latter decreases in time proportionally to a real-value function named "claim reporting rate."

And finally, **"Munich Chain Ladder"** by Gerhard Quarg and Thomas Mack is presented as a reprint in order to give this paper wider visibility within the actuarial community, as the techniques described in the paper should be known to all actuaries doing reserve analysis. It describes a reserving method that reduces the gap between IBNR projections based on paid losses and IBNR projections based on incurred losses. The paper originally appeared in *Blätter der Deutschen Gesellschaft für Versicherungs- und Finanzmathematik* 26:4, 597-630, 2004.

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- Multiple risk management tools and metrics
- Flexible and adaptive risk models
- Aggregation of net and gross exposures in addition to expected losses
- Stress testing that is credible to top management to the degree that it can lead to actions

The report also notes one additional major difference between the banks with better results in 2007 and their less effective peers. The better banks were able to keep their degree of attention to risks in their fastest growing areas proportionate to the level of activity, while the worse banks did not increase risk scrutiny as the business increased. This balancing act is absolutely the most difficult aspect of risk management and requires not just support from the top, but specific direction from top management. Challenging the high growth area of company business can only be done from the top.

While high growth areas do not always become problems, it is true that very many large problems have come from former high growth areas. It is good to have set advance expectations for new activities (actually overseeing the risks of a new high growth area is simultaneously important, disruptive, and highly politically sensitive).

And so, does the subprime situation prove that ERM is ineffective? No. This report reveals that banks who wore their "seat belts" by properly applying ERM benefited by suffering fewer losses.

CAS Honors Outstanding Volunteers

Celebrating the spirit of volunteerism, four outstanding CAS volunteers were honored during the 2008 Annual Meeting in Seattle. David G. Hartman and Thomas E. Hettinger received the Above and Beyond Achievement Award and David J. Grady and Stephen Makgill were presented with the Matthew Rodermund Service Award during the opening Business Session.

Each year more than a third of CAS members participate as volunteers, and among these are individuals who contribute far more than is expected of a typical CAS volunteer. Since such efforts are usually not well-known to the vast majority of CAS members, the Above and Beyond Achievement Award was created.

Over the last two years, Mr. Hartman has been a driving force behind the creation and development of a new special interest section of the CAS, the Seasoned Actuaries Section. He served as the first president of the Section, which is designed to draw upon the expertise of the Society's most experienced members, whether retired or still active.

"What I have enjoyed the most about my volunteer work is the interaction with many great people. I plan to continue volunteering for the CAS for years to come, as I hope many of my fellow seasoned actuaries will do," explained Hartman. "Like campgrounds and hiking trails, I hope I leave the profession better than I found it."

Mr. Hettinger served as chair of the 2008 ERM Symposium Planning Committee. "For those of you who don't know, the ERM Symposium involves seven different organizations, and to say the chair's job is like herding cats is an understatement," declared CAS President Christopher S. Carlson in announcing Mr. Hettinger as an award winner. "The time commitment was substantial, and the Symposium was a huge success."

While Mr. Hettinger was organizing the Symposium, he was also chairing a CAS Task Force, which led to his next contribution. After the 2008 ERM Symposium, he agreed to chair the committee planning the new Ratemaking and Product Management Seminar scheduled for March 2009.

"My early bosses were very influential in my decision to volunteer," said Mr. Hettinger. I have found that volunteer work helps me keep up to date on changes in the actuarial field. Whether it is ERM or predictive modeling, talking to other professionals about these topics is beneficial."

While the Above and Beyond Achievement Award recognizes short-term contributions, the Matthew Rodermund Service Award is intended to recognize two CAS members annually who have made significant volunteer contributions to the actuarial profession over the course of a career. The award was established in 1990 in honor of Mr. Rodermund's years of volunteer service to the CAS.

Tom Hettinger

Dave Hartman

CAS President Chris Carlson presents David Grady with the 2008 Matthew Rodermund Service Award at the 2008 CAS Annual Business Meeting. Mr. Grady is a co-recipient of the award with Stephen Makgill.

Mr. Grady's CAS volunteer service began in 1971 when he became a Fellow. Similar to most new Fellows, he immediately joined the Exam Committee. His volunteerism from there spanned more than 25 years, with contributions to CAS publications through work on editorial committees and to the advancement of CAS research through work with the Committee on Theory of Risk and Committee on Risk Classification. Mr.

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Grady also served as a Regional Affiliate president, among his many contributions.

Mr. Makgill, FCAS 1957, also contributed in a variety of areas, including service on the Committee on Mathematical Theory of Risk, Committee on Continuing Education, and the Publicity Committee. He capped his long tenure of volunteer service to the CAS by serving as the chair of the Long Range Planning Committee from 1986-1988.

In a letter to the CAS Board of Directors written in response to receiving the Rodermund Award, Mr. Makgill explained how volunteerism benefits both the volunteer and the CAS. "The volunteer services I have been able to offer the Society fade in comparison to the benefits realized from being a member of the Society. Of particular note are the meaningful friendships made over the years at regular Society meetings and while participating at committee meetings."

Help the CAS recognize outstanding volunteers by nominating a worthy member for the 2009 Above & Beyond Achievement Award or Matthew Rodermund Service Award when invited to do so in May.

Actuaries Down Under

CAS President Christopher S. Carlson met with an Australian contingent of CAS members and candidates on November 7, 2008, in conjunction with his trip down under to represent the CAS at the Institute of Actuaries of Australia General Insurance Seminar. The group gathered at the Opera Bar, located on the lower concourse level of the Sydney Opera House, which offered beautiful views of the Opera House, the city skyline, and Sydney Harbour Bridge (seen in the background). Pictured from left to right (first row) are Rade Musulin, Ka Chun (Jeff) Yeung, Suruchi Joshi, Kelli McGinty, and Stephen Underhill. In the second row, left to right, are Kelly Cusick, Chris Carlson, Daniel Tess, Shawn McKenzie, and Tony Beirne.

CAS Member Therese Vaughan Named NAIC's CEO

Esteemed Insurance Expert to Serve as Primary Spokesperson in D.C.

KANSAS CITY, Mo.—On January 15, 2009, former Iowa Insurance Commissioner Therese M. (Terri) Vaughan, Ph.D., was named chief executive officer of the National Association of Insurance Commissioners (NAIC), effective February 18, 2009.

Ms. Vaughan replaces Catherine J. Weatherford, who left the NAIC in July 2008. Andrew Beal, who served as acting executive vice president and CEO in the interim, has been promoted to chief operations officer. Mr. Beal also will continue to serve as the NAIC's chief legal officer.

Ms. Vaughan will serve as the Association's primary representative and chief spokesperson in Washington, D.C. In addition, her responsibilities will include outreach to federal governmental entities and state government associations, as well as consumer and insurance industry representatives. She will also oversee the launch of the Association's new Center for Insurance Information, which will make the NAIC information and resources more accessible to members of Congress and other federal agencies.

"Terri knows state insurance regulation and she knows the NAIC," said NAIC President and New Hampshire Insurance Commissioner Roger Sevigny. "As a former regulator, she already understands our membership's needs. We are fortunate to have such a dynamic new leader at this critical time in our nation's history."

Prior to joining the NAIC, Ms Vaughan was the Robb B. Kelley Distinguished Professor of Insurance and Actuarial Science at Drake University, a position she held since January 2005, following 10 years as Iowa Insurance Commissioner. The longest-serving commissioner in Iowa history, Ms. Vaughan also was an active member of the NAIC, completing a term as president in 2002.

The selection was based on the recommendation of a search committee formed last summer, which was chaired by 2008 NAIC President and Kansas Insurance Commissioner Sandy Praeger.

"Terri's depth and breadth of industry knowledge, experience, and expertise will surely be an asset to the NAIC," Ms. Praeger said. "We worked hard to ensure we selected someone who would be good for state insurance regulation, state insurance regulators, and employees of the NAIC."

While the majority of staff members will remain in Kansas City, Ms. Vaughan's office will be housed in the association's Washington, D.C., headquarters. Ms. Vaughan will work alongside staff from the Interstate Insurance Product Regulation Commission (IIPRC). She is widely credited with being the architect of the NAIC's Interstate Insurance Product Regulation Compact.

Ms. Vaughan earned a Ph.D. in risk and insurance from The Wharton School at the University of Pennsylvania and a bachelor's degree in insurance and economics from the University of Iowa. She is an Associate of the Casualty Actuarial Society, a CPCU, an Associate of the Society of Actuaries, and a member of the American Academy of Actuaries. She is the co-author of two college textbooks on insurance, *Essentials of Insurance* and *Fundamentals of Risk and Insurance*, the 10th edition of which was released in December 2007.

Bookmark the online calendar at www.casact.org/calendar

CAS Professional Education Calendar

March 9-11, 2009
CAS Ratemaking and Product Management (RPM) Seminar
The Mirage
Las Vegas, Nevada, U.S.A.

April 29, 2009-May 1, 2009
Enterprise Risk Management Symposium
Sheraton
Chicago, Illinois, U.S.A.

May 3-6, 2009
CAS Spring Meeting
New Orleans Marriott
New Orleans, Louisiana, U.S.A.

May 18-19, 2009
CAS Seminar on Reinsurance
Fairmont Hamilton Princess
Hamilton, Bermuda

June 29-30, 2009
Limited Attendance Seminar on Loss Distributions
The Millenium Knickerbocker Hotel
Chicago, Illinois

August 10-14, 2009
22th International Summer School 2009 of the Swiss Assocation of Actuaries on Monte Carlo Methods and Applications in Finance and Insurance Models
University of Lausanne
Lausanne, Switzerland

September 14-15, 2009
Casualty Loss Reserve Seminar (CLRS)
Chicago Marriott Magnificent Mile
Chicago, Illinois

In Memoriam

Nicholas M. Brown Jr.
(FCAS 1981) 1954-2008

Robert W. Gossrow
(ACAS 1967) 1940-2009

Richard W. Nichols
(FCAS 1984) 1954-2008

The Actuarial Review always welcomes letters and story ideas from our readers. Please specify what department you intend for your item—letters to the editor, news, puzzlement solutions, etc.

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