

## From the President: Opportunity and the Risk of Circling the Wagons

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*Dr. Richard Verrall (right) receives the first-ever Variance prize from CAS President John Kollar during the CAS Annual Business Meeting, held last November.*



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# Sponsors Support the 2009 CAS Annual Meeting

The CAS appreciates the support provided by the sponsors of its 2009 Annual Meeting:


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The 2010 CAS Annual Meeting is scheduled for November 7-10 at the JW Marriott in Washington, D.C. Contact Mike Boa at the CAS Office (mboa@casact.org or 703-562-1724) for details on sponsorship opportunities for the 2010 event. 

## CAS Trust Scholarships Open for 2010-2011

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 Committee, 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 3, 2010. Information about the trust scholarship as well as the application are available on the CAS Web Site.

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. 

## FCAS Elected AICT President

Kuei-Hsia Ruth Chu, FCAS, was elected president of the Actuarial Institute of Chinese Taipei (AICT) and took office at the AICT Annual Meeting on December 3, 2009. Issues that Ms. Chu will address as president are continuing education opportunities to help fulfill an increased requirement in CE credits, an expanded annual meeting, and increased interaction with international actuarial organizations.

Ms. Chu is also vice president of the CAS Regional Affiliate Casualty Actuaries of the Far East (CAFE).

# Opportunity and the Risk of Circling the Wagons



**F**riday, 13 November 2009 was an historic date for the actuarial profession worldwide. On that day the CAS joined 13 other actuarial associations in 12 countries in signing a treaty establishing CERA as a credential in enterprise risk management (ERM) to be awarded to actuaries by each of those associations. For the first time, actuaries around the world will share a common designation—one that will allow our principals to be assured of consistent rigorous standards in training, continuing education, and professionalism across multiple nations.

The CAS Centennial Goal calls for the advancement of CAS members in ERM, so our signing of the treaty is quite consistent with our long-term plan. Why would 13 other actuarial organizations abandon their respective historical practice of acting alone and join together in this treaty? Some observations may shed some light.

ERM has at its core the evaluation and assessment of all risks that an enterprise faces. Every day, casualty actuaries deal with risks from a very wide array of hazards, each with its unique characteristics, and most of which have very complex and not often fully understood loss-generating processes. Who better than actuaries to assess all the risks facing an enterprise than these risk professionals accustomed to not only uncertainty in outcomes but, more importantly, uncertainty in the understanding of the underlying loss-generating process?

Actuaries are not alone, however. A number of groups, many with a global reach, are trying to position their members to become THE necessary risk professionals. With this background, it is not difficult to see at least one incentive for the 14 treaty signatories to set aside their individual paths and join together.

Stepping back, though, we see that this is only the most recent of a number of risks we have recognized. Statisticians using data mining and predictive modeling methods have taken over some jobs previously filled by casualty actuaries. Mathematicians, physicists, and other quantitative scientists have made their mark on the investment community. Products that they have developed look very much like insurance, again a traditional domain of actuaries.

The CAS Board has recognized this risk to our profession in establishing an initiative on technical excellence. The board realizes that, unless we can assure our principals that casualty

actuaries remain quantitatively competent and, more importantly, up-to-date in the tools that we can bring to bear to assess risks our principals are facing, we will continue to lose ground.


ERM best-practices teach us that the worst way to address a recognized, significant risk is to ignore it. As the profession-wide Image of Actuary campaign says, “Risk is Opportunity.” The best way to address a recognized risk is to turn it into an opportunity.

The technical excellence initiative lets us step back and take a holistic review of our entire educational structure. Significant risks and challenges often require new approaches. Conversely, “circling the wagons”<sup>\*</sup> in the face of these challenges may only forestall inevitable failure.

Quantitative techniques used in predictive modeling and data mining, emerging techniques to assess variability in our forecasts, and sophisticated models used in dynamic financial analysis are all finding their way into the daily tasks of casualty actuaries. If we cannot assure our principals that we are up to these challenges we will continue to lose ground to “quants” who can.

Something else that these techniques have in common is that mastery of them cannot be verified in a traditional timed, short-answer or multiple-choice examination, whether paper and pencil or computer-administered. Because of this we have a dilemma.

We could circle the wagons and insist on only using traditional exams to test mastery. Doing that though may very well mean that we will be doomed to a shrinking and possibly less interesting profession, as outsiders come in to provide services our principals need yet we are unwilling or unable to provide. Alternatively, if we can find more creative and imaginative ways to assure our principals that our members are well-versed in advanced techniques, we can only solidify and expand our position as the leading risk professionals.

We cannot survive in this new and changing world by circling the wagons and refusing to consider alternatives to our traditional examinations. We need to continue to evolve our means of educating our candidates and members, assuring the high quality that our principals have come to rightfully expect from us. 

<sup>\*</sup> In settling the western part of what is now the United States, settlers would set out from the East in groups with a number of wagons. If they perceived they were threatened either from brigands or natives the settlers would form the wagons into a rough circle and take up defensive positions inside. This is one way to address risk but completely stops progress.

## A Quality CAS Designation

### Dear Editor:

I'm so glad to see the article "Sustaining the Quality of the CAS Designation" ("In My Opinion," *Actuarial Review*, November 2009). I totally agree and support the author's opinion. There are lots of discussions on the actuarial forum, but it's kind of informal.

We already saw what happened on the SOA side. Please keep the quality of the CAS designation!

—April Liu, FCAS

### Dear Editor:

Mr. Lacko is right on the money with this article. He should most certainly NOT change his opinion back. Students who take college coursework in actuarial science should have a significant advantage over students who have not had such coursework but they should still have to pass the exams like everyone else.

—Eric Clymer, FCAS, MAAA

## Kudos for Witcraft

### Dear Editor:

In scanning the Volunteer Honor Roll that appeared in the November 2009 *AR*, I was disappointed to find that Susan Witcraft's name did not appear. She was the CAS representative to the working group that coordinated the development of the IAA's new monograph on stochastic modeling. Although the monograph was actually written by Milliman under contract to the IAA, the working group reviewed all of the material in every detail and had frequent teleconferences. Without Susan's input, the working group would have had very little non-life input and would have lacked a critical viewpoint. Susan was an active participant and made sure that the CAS' financial support for the project resulted in a monograph that was also useful to our members.

So, thank you, Susan! And to all *AR* readers: Look for the

publication of the IAA monograph. (It may even be out by the time this letter is published.) It is an excellent resource for those interested in stochastic modeling.

—Amy S. Bouska, FCAS, MAAA

## Proposed CE Policy Changes Questioned

### Dear Editor:

As a CAS member I am deeply concerned about the second exposure draft of the CAS Continuing Education (CE) policy.

It is unclear as to why a policy initiative on this scale is necessary when we already have in place clearly defined qualification standards, well established in the actuarial profession. The CAS should encourage voluntary continuing education, as it has always done, and not change its policy to one of compulsory continuing education. The development of the CAS and the professionalism of its members in its remarkable nearly 100-year history has always stemmed from the voluntary, not coerced, efforts of its membership.

The various units on the Draft seem extremely arbitrary. Some examples from the table on p. 10 of the Draft [include]: "75% of credits minimum;" "10% of credits maximum," "6 units maximum," "at least 7.5 units of structured credit must be from a source other than the employer."

Given the magnitude of the change from voluntary to compulsory compliance with audit procedures, the board should take further measure of its members' opinions. With the extent of computer access available to the CAS membership, a straw vote should be easy to implement.

I believe my sentiments are shared by the vast majority of the CAS membership. Nearly 50 CAS members agreed on very short notice to sign a more extensive petition letter, expressing effectively these same points, which were forwarded to the CAS Board in December.

—Charles Gruber, FCAS, MAAA 

## Editor's Note:

With this issue we welcome a new editor in chief, Grover Edie, to the *AR* family. Grover's background includes several years work on the Joint CAS/CIA/SOA Committee on Academic Relations, five of which he served as chair. He has also been involved with CAS general business skills education and is currently a University Liaison.

Grover is stepping in to fill some pretty big wingtips. Said wingtips belong to Paul Lacko, the *AR* editor in chief for the past seven years.

Paul honed his skills as an *AR* copyeditor under Walter Wright

and Stan Khury. He had a knack for dissecting a sentence to get to the heart of its meaning. Merciless with the superfluous, Paul favored a frugal economy of wording.

Paul's love of language and good writing is evident in the pages of *AR* and in his own "In My Opinion" columns. Although geared to our members, some of Paul's columns could have easily been understood and appreciated by a lay person.

People who volunteer to work on the *AR* tend to be long timers. Like Paul, they love language and clarity. In the 12 plus

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# Treaty Launches New Risk Management Credential Globally

The Casualty Actuarial Society (CAS) announced the launch of a global risk management credential, the CERA (chartered enterprise risk analyst), to address the urgent need for highly qualified risk professionals globally, especially in the financial sector. The launch was marked by the CAS signing of a multilateral treaty in Hyderabad, India, during the meetings of the International Actuarial Association (IAA). The treaty was signed by 14 IAA member associations based in 12 countries around the world, including many of the major world economies.

The credential will be awarded through qualified participating associations and will incorporate and adopt the name CERA, currently issued by the Society of Actuaries (SOA). It will identify actuaries who meet stringent education requirements in enterprise risk management (ERM) and are governed by a strong code of professional conduct.

Fred Rowley, chairman of the Global CERA Steering Group said, "The demand for highly qualified professionals in this field is growing rapidly as management and boards recognize the need for substantially improved risk management. Markets and regulators are demanding better and more informed decision making and risk controls."

"The SOA CERA qualification has confirmed a strong demand for the qualification and provides a firm foundation of insights and experience for the new global credential," Mr. Rowley said. "The signing of this treaty builds strongly on this demand through the adoption of an updated syllabus and agreements on the recognition of the participants' education systems."

CAS President John Kollar said, "The global ERM designation, CERA, will recognize actuaries as experts in the evaluation of enterprise risks and provide actuaries with broad opportunities to apply their skills in risk analysis. The CAS is delighted to join the global actuarial community in offering this designation."

SOA President S. Michael McLaughlin, said "The technical standards of the qualification establish a benchmark for

rigor and quality assurance. The syllabus is comprehensive and addresses the important challenges posed by the current financial pressures, across all major sectors. We are confident that it will satisfy the risk management needs of enterprises and the public they serve, around the world."

Speaking at the launch, IAA President Mr. Katsumi Hikasa commented, "The IAA is pleased to see this initiative on the part of 14 of its full member associations. This combination of technical skills and professional governance will ensure that all actuaries awarded the credential are fully equipped to face current real-world challenges."

Participating associations include:

The Institute of Actuaries of Australia (Australia)

Canadian Institute of Actuaries (Canada)

Institut des Actuaire (France)

Deutsche Aktuarvereinigung e.V. (Germany)

Israel Association of Actuaries (Israel)

Institute of Actuaries of Japan (Japan)

Colegio Nacional de Actuarios A.C. (Mexico)

Het Actuariel Genootschap (Netherlands)

Actuarial Society of South Africa (South Africa)

Svenska Aktuarieföreningen (Sweden)

Faculty of Actuaries (U.K.)

Institute of Actuaries (U.K.)

Casualty Actuarial Society (USA)

Society of Actuaries (USA)

The CAS ERM Committee was formed in late 2009 in part to help implement and administer the new global ERM designation for the CAS. The committee, chaired by David Terne, has been busy developing the process CAS members will follow to earn the credential. Details will be posted on the CAS Web Site as soon as they are available. 

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## Editor's Note, From page 5

years that I have worked for the CAS, I could not ask for a better group of volunteers than the ones who create the *AR*. Working on this newsletter is one of *the* best aspects of my job, mostly because of people like Paul.

I am happy to say that Paul and I will continue to work together on CAS publications, this time with him chairing the

Publications Management Board. As we enter this new decade, Grover and the *AR* editorial team will continue to make the *AR* the best news source for all things CAS. We look forward to serving you.

—Elizabeth Smith, *AR* Managing Editor 

# Now What?

**A**s I went to pick up a cup of coffee before sitting down to write this piece, I walked by darkened offices and empty cubicles where people used to work. The recent economic crisis has hit home, or rather office. Many of my friends and colleagues are no longer here, like so many other offices across the country. Some of us have escaped the downsizing, others of us have not.

As I wrote this column, the *CPCU News*, the underwriting society's counterpart to this publication, came across my desk. The lead article was "Discount Offered to Unemployed Members, New CPCU's." Apparently, ours is not the only profession in the insurance industry affected by the recent downturn in the economy. Many of us have said "goodbye" to colleagues at work in recent months.

Michael Ersevimi's "Humor Me" submission provides 10 whimsical things to do after being laid off. I would like to start another list—a serious one—of what to do after being laid off.

## 1. Maintain your sense of humor.

For many of us, whose identity is so tightly bound to our job, our title, even our credentials, the loss of employment is a serious blow. Humor can help soften the blow and help us gain perspective. It is also a great stress reliever. (You don't have to be laid off to need stress-relief.)

## 2. Remember: You are NOT your job.

Your job was how you paid the bills, not who you are. Reflect on what is important—family, health, perhaps an early morning walk.

Besides income, you face some new challenges. What will you tell prospective employers, recruiters, friends, and family that you are doing while searching for a job (or in your newly found retirement)? How do you keep your actuarial skills sharp and up-to-date? And how do you maintain your continuing education requirements, cheaply or at no cost at all? There is a simple answer.

## 3. Write it down.

Recall all the times you wanted to write an article or paper, research a topic, or in some other manner pass along what you

know or would like to learn. Most likely, you did not do it because you did not have the time. Now you do.

Consider the *AR* for short articles (technical and otherwise) and opinion pieces, and the *E-Forum* for longer papers that are not refereed. If you have a theory or idea you've always wanted to explore, try writing for the CAS Working Paper site, which is dedicated to early stage research and authors looking for feedback. You may even have a well-developed piece you could submit to *Variance*. If you're not sure which publication to select, send your submission to [ar@casact.org](mailto:ar@casact.org) for advice.

Research in today's Web-enabled world can be done from home or at a local Internet "hot spot." (I assume if you don't have access to the Internet, you are reading the paper edition of this publication. If so, you can also use it for insulation, per Michael's item seven, but only after you have read it in its entirety.)


Writing for publishing will also help you with rule four.

## 4. Keep in touch.

Just because you are not working doesn't mean you should disappear. In fact, maintaining communications with others, i.e., networking, is likely more important than ever. And if you are working with others on an article or research, it can give you cause for more frequent communications.

## 5. I leave this fifth suggestion blank for you to complete.

Finally, I want you to network and write. Drop me a note and give me YOUR opinion.

Postscript: Walk by my office now and you will also find it dark. My personal effects have been removed, as has my name from the door. My last day at GMAC was December 30, my wife's birthday. We "celebrated" by leaving town to visit our sons and their families. I want you to know that when I initially wrote this article, I knew full well how many of you feel who no longer have the position you worked so hard to attain. I also know that this is a temporary condition, and people with our skills are not out of work for long. 

# CAS Honors Outstanding Volunteers

**C**elebrating the spirit of volunteerism, five outstanding CAS volunteers were recognized during the 2009 Annual Meeting in Boston. Jacqueline Friedland, Gary Dean, and John Gleba were announced as winners of the Above and Beyond Achievement Award, and Gary Patrik and David Hafling were honored as recipients of the Matthew Rodermund Service Award.

## Going Above and Beyond

Each year more than a third of CAS members participate as volunteers, and among them 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.

Ms. Friedland was recognized for going “above and beyond” with her contributions to the Quinquennial Membership Survey Task Force, which was formed to conduct the CAS membership survey in 2008. She authored a section of the report on the survey results prepared for the CAS Board of Directors and edited the entire report. She also found a creative way to transform thousands of written comments into meaningful information, and she did this while contributing as a volunteer in other areas of the CAS, such as the Syllabus Committee, and Education Policy Committee.

Mr. Dean was recognized for his work on the CAS’s refereed journal, *Variance*. During his three-year term as editor in chief of the journal, he overcame many challenges involved in launching a major new journal, while also chairing the Investment Committee.

Mr. Gleba has had a major impact on the professionalism education of CAS members and his efforts internationally reflect a commitment to helping the CAS achieve its Centennial Goal. After his tenure as chair of the Committee on Professionalism Education, he stayed on the committee to continue working on international offerings of the professionalism courses.

## A Career of Volunteer Service

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.

The CAS Nominating Committee selected Mr. Patrik for the Rodermund Award in part because of the breadth of his volunteer contributions to the CAS. Over a 20-year volunteer career, Gary served on the Examination committee as well as publications and research committees. He chaired the Committee on Theory of Risk from 1982 to 1988, and chaired the Dynamic Financial Analysis Task Force in the mid 90s, leading the CAS efforts in a growing area at the time. He also served as a Regional Affiliate president, among his many contributions.

“This may sound obvious and trite, but remember that your profession largely defines who you are,” commented Mr. Patrik. He implored his fellow CAS members to “Volunteer. Do something good for your profession—not only for the larger society but for yourself.”

Like Mr. Patrik, Mr. Hafling’s contributions spanned the organization. He chaired six different committees for the CAS, had a 12-year run on the Examination Committee, and served six years on the Long Range Planning Committee, along with many other volunteer activities.

Mr. Hafling expressed his appreciation for those who supported his volunteer work. He commented, “I thank the CAS for recognizing my service. Because I benefited from my volunteer work as much as the CAS did, I also thank the CAS for providing opportunities to serve. I also thank Bob Anker, who was my boss for many years. Bob encouraged and supported the volunteer work performed by the many actuaries for whom he was responsible. I ask that members who are responsible for managing and directing the work of other CAS members follow Bob’s example and encourage and support their volunteer service to the CAS. Finally, as I accept this award, I remember my wife, Ann, who sadly has passed away and cannot hear the words of thanks that she deserves. I would never have been able to serve the CAS without Ann’s support and understanding.”

Help the CAS recognize outstanding volunteers by nominating a worthy member for the 2010 Above & Beyond Achievement Award or Matthew Rodermund Service Award when the call for nominations is announced this spring. **AR**

# Course On Professionalism Expands Into Asia

By John Gleba, Committee on Professionalism Education

Over the past few years, the CAS has undertaken significant efforts to expand the Course on Professionalism to accommodate candidates outside of North America. The CAS has focused on Asia, and China in particular, as a major source of potential CAS members. The insurance industry has been booming for about 15 years in South and East Asia, and the potential growth of the market is still immense due to the incredibly fast development of the Chinese and Indian economies. The actuarial profession has become one of the most admired occupations in Asia, and the CAS has received an overwhelming demand for the Course on Professionalism from Asian students. This effort has been undertaken as part of the CAS's global initiative to be a worldwide leader in casualty actuarial science, and members of the Committee on Professionalism Education have been working hard to pursue this goal.

The first real effort to hold the Course on Professionalism outside North America happened in November 2005, when the CAS hosted its own course in Hong Kong, SAR. This course was a carbon copy of the U.S. course in terms of scope and content and was attended by 22 CAS candidates from eight different countries, including Hong Kong, Singapore, Taiwan, China, and Pakistan.

I served as the course coordinator for the Hong Kong course, with assistance from four other Asian-based CAS Fellows: Jenny Lai, Yuhong Yang, Bruce Moore, and Scott Yen. Also assisting at the course were local Hong Kong actuaries Bruce Howe and Peter Luk. The CAS course received an overwhelmingly positive

response, based on survey results, and succeeded in helping 22 candidates further their goal of becoming CAS members.

In early 2008, the CAS again pursued an opportunity to hold a professionalism course in Asia. This time, the CAS partnered with the United Kingdom Actuarial Profession (UKAP) to hold a joint UKAP/CAS professionalism course in Shanghai in March 2008. I, along with Chris Daykin, an Institute of Actuaries Fellow, oversaw the development and coordination of the overall course, which was held at the Shanghai University of Finance and Economics (SUFE). Also providing assistance were CAS Fellow Alex Zhu and Institute of Actuaries Fellow Nick Dumbreck. Twenty-five actuarial candidates, 12 of whom were seeking CAS credit, attended this course.

This course was also very well-received and led to another opportunity to partner with the UKAP by holding a second joint professionalism course in Singapore in August 2008. This time, the course was jointly sponsored by the CAS, the UKAP, the Singapore Actuarial Society (SAS), and the Institute of Actuaries in Australia (IAAust). As before, Chris Daykin and I teamed up to manage the course's development and overall coordination. Other actuaries who provided assistance with the course were local CAS Fellows Kah Shin Leow and Jeremy Lian. CAS Fellow Ron Kozlowski also assisted during the course. A total of 15 actuarial candidates registered for the Singapore course, of which five received credit from the CAS.

The success of this course led to a second Singapore course, held in August 2009, again jointly sponsored by the CAS, UKAP, SAS, and the IAAust. This course was moderated by CAS Fellow Jenny Lai and Institute of Actuaries Fellow Neil Hillary. A total of 19 actuarial candidates attended this second Singapore course, with four receiving credit from the CAS.

Each of these courses provided the CAS with valuable insight into how the field of actuarial science is evolving throughout Asia, and particularly in China. Beginning in December 2009, the CAS was the sole sponsor of a professionalism course in Beijing (see related sidebar).

Going forward, the Committee on Professionalism Education will continue to look for opportunities to hold more professionalism courses throughout Asia, whether that includes joint sponsorship with other actuarial societies or providing



*Hong Kong Left to right: Jenny Lai, John Gleba, Pat Kum, Yuhong Yang, Scott Yen.*

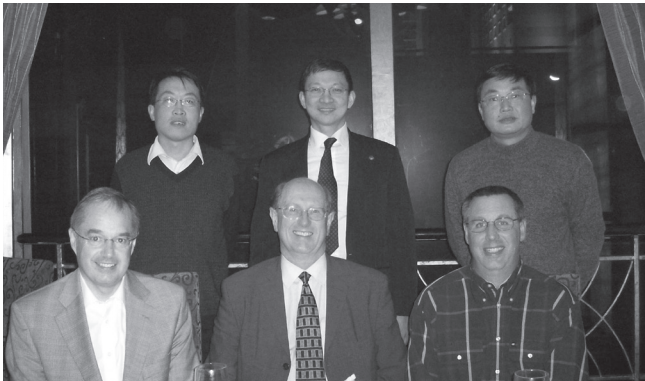


# Beijing COP a Success

By Jenny Lai and Scott Yen

stand-alone CAS courses.

Lastly, the Committee wishes to thank the following volunteers (in no particular order) for their invaluable assistance and guidance in promoting the creation and implementation of CAS professionalism courses in Asia: Ina Becraft, Ruth Chu, Jenny Lai, Yin Lawn, Bruce Moore, Yuhong Yang, Scott Yen, Alex Zhu, Jeremy Lian, Kah Shin Leow, Zhang Lang, Ron Kozlowski, Kevin Dyke, Andy Kudera, Ralph Blanchard, Bob Conger, and Xi Zhu. Special thanks to Chris Daykin and Neil Hillary of the UKAP, Mark Birch, Andrew Linfoot, and Frank McNerny of SAS, Dr. Zhigang Xie of SUFE, and Professor Meng of Ren Min University in Beijing. 



**Shanghai** Front Row, left to right: Nick Dumbreck, Chris Daykin, John Gleba. Back row, left to right: Lu Wanchun, Alex Zhu, Dr. Zhigang Xie (SUFE).



**Singapore** Front row, left to right: Adrian Wong, Phyllis Chan, Sebastian Tan. Back row, left to right: Jeremy Lian, John Gleba, Chris Daykin, Ben Liang, Ron Kozlowski, Kah Shin Leow.

On December 5-6, 2009, the CAS hosted a Course on Professionalism (COP) in Beijing, marking the first time that a COP contained additional material created specifically for candidates practicing in China and the surrounding area.


Twenty-two candidates registered and attended the course, and it was very well-received. Candidates were very impressive, discussing their in-depth and insightful ideas during the case-study presentations. Some of them were able to relate these case studies to real-life challenges they might face and carefully analyzed the possible approaches they might take.

Attendees were very interested in the case studies and “snapper” or quick-thinking role-play sections. Candidate feedback reflected that some snappers, like “Financial Crisis” and “Subordinate’s Dilemma,” were very well written, and that similar cases did take place in the local market. Candidates enjoyed these case studies and fired back very sharp questions to the facilitators. These sessions inspired the students to think more.

The invited speakers (Ms. Zhang Lang, FCAS, chief reserving actuary of People’s Insurance Company of China, and Mr. Alex Zhu, FCAS, chief actuary of Ping An) relayed presentations combining the principles of professionalism with the current local market environment. Many interesting real-life stories spiced up the presentations. Candidates provided very positive feedback on these invited speeches and appreciated the precious opportunity to have direct conversations with these two seasoned actuaries, who are well-known in the local market.

The candidates also appreciated that the course was conducted in Chinese, enabling them to ask questions and make presentations in their native tongue. Language has been a challenge for non-native English speakers, and the participants felt that conducting the COP in their own language provided them with a better learning opportunity and allowed them to express their opinions with more freedom.

We acknowledge the assistance of Professor Meng of Ren Min University. He and his two facilitating students worked very diligently. Without their hard work, we simply could not have run such a smooth course.

Overall, this course went very well and the students were shining stars; their performance greatly surpassed all expectations. 


# ERM Symposium Offers the Latest on ERM Thinking and Practices

The eighth annual Enterprise Risk Management (ERM) Symposium continues its tradition as the premier global conference on ERM on April 12-14, 2010, at the Sheraton Chicago Hotel and Towers in Chicago, IL. The ERM Symposium will build a strong cross-disciplinary framework for senior management to create systematic value and competitive advantage by effectively managing of risk and capital.

Over 30 different concurrent sessions will be offered with multiple sessions within tracks covering decision making, risk governance, identification, quantification, research, and an expert roundtable. Three general sessions will also be offered, including an "Ask the Experts" session on April 14. 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 sessions are "Regulatory Reform—Systemic Risk, Risk Governance, Transparency and Capital Changes," and "Chief Risk Officers—ERM Challenges, Successes, Communication, and Evolution in the Wake of the Financial Crisis."

Attendees can choose to come early for a full day of optional seminars on April 12 that will cater to specific areas of interest. Topics will include ERM fundamentals and practices, the complexity of the ERM model, and the interconnected path of banks and insurers. A separate registration fee is required to attend these seminars.

Take advantage of the early registration fee by registering before March 19. Learn more and register online at [www.ERM-Symposium.org](http://www.ERM-Symposium.org). Don't miss the opportunity to attend the ERM 2010 Symposium, the premiere ERM conference. 

# Don't Miss the 2010 CAS Spring Meeting in Sunny San Diego

Join the CAS in San Diego for big waves, sandy beaches and fun at the 2010 Spring Meeting! Enjoy all that this city has to offer, from the international flair of its downtown neighborhoods to the beauty and culture of its many museums and attractions, and of course, over 70 miles of pristine beaches. Continuing its tradition, the Spring Meeting will present a dynamic program with a variety of educational opportunities. With location combined with education, this meeting will have something for everyone.


The Spring Meeting will be held May 23-26 at the beautiful Hotel del Coronado. Built in 1888, this classic hotel has long been heralded as one of America's most beautiful beach resorts. Offering guests a unique combination of modern luxury and old world charm, this hotel boasts a stunning beachfront locale. Attendees will enjoy a variety of dining and shopping options as well as a state-of-the-art spa.

This year's featured speaker will be internationally recognized authority on business ethics Patrick Kuhse. A self-admitted greedy stock broker on Wall Street in the 1980s, Mr. Kuhse became more interested in making money and being successful than in ethical behavior, which led him to white-collar crime. After serving time in federal and international prison, Mr. Kuhse decided to make things right by lecturing on the importance of

ethical behavior. He shares techniques on dealing with moral and ethical dilemmas and is uniquely qualified to recognize key warning signs and the critical thinking errors that lead to all forms of unethical behavior and criminal activity.

The Spring Meeting's four general sessions—"NAIC Credit Hearings," "Earthquake Update," "The Hitchhiker's Guide to ASOPs," and "CRO Roundtable—ERM Post Recession"—will feature traditional panels on current events in the insurance industry, humorous skits with actuaries facing professional challenges, and a roundtable discussion on the future of enterprise risk management.

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 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 on the CAS Web Site in the near future. 

# Register for the 2010 RPM Seminar in Chicago!

Registration is open for the second annual Ratemaking and Product Management (RPM) Seminar, scheduled for March 15-17 at The Fairmont Chicago, Millennium Park. The RPM Seminar offers a wide range of continuing education opportunities for actuaries, underwriters, and other insurance professionals. Don't miss out on great hands-on sessions for attendees of all experience levels!


Five-time, best-selling author Ronald Baker will deliver this year's keynote address. Baker began his career in accounting in 1984 with KPMG Peat Marwick's Private Business Advisory Services in San Francisco. He went on to found the VeraSage Institute, a think tank dedicated to teaching value pricing. He has toured the world, spreading his message to over 90,000 professionals. Baker states his mission as, "To, once and for all, bury the billable hour and timesheets in the professions."

The seminar offers over 50 different concurrent sessions with multiple sessions on the following tracks: regulatory, personal lines, predictive modeling, implementation issues, workers compensation, product management, data management, underwriting, commercial lines, professionalism, and rate of return.

Sessions have been designed for both the novice and the experienced. For example, three sessions on generalized linear

models (GLMs) offer a range of learning opportunities guaranteed to demystify GLMs. From the first session, introducing GLMs to those new to the topic, through the final session, covering GLM refinements, attendees can progress from beginner to advanced knowledge.


Attendees can choose to come early for a full day of workshops on March 15. Select from one of three workshops offered: catastrophe modeling, product development, or basic ratemaking. These 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 2010 RPM Seminar to acquire the knowledge and tools to help your company grow in difficult economic times. Register before February 15 for a \$100 registration discount! Visit the CAS Web Site for more program information and to register. 

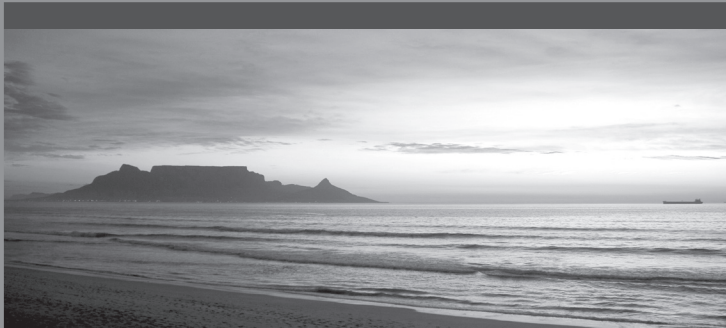
**Exhibitors**—Don't miss the chance to showcase your products and services at the RPM Seminar. Space is limited, so act today! Contact Mike Boa at [mboa@casact.org](mailto:mboa@casact.org) for more information.



## Save the Date for 2010 Reinsurance Seminar

The 2010 CAS Seminar on Reinsurance will be held May 6-7 at the Crowne Plaza Times Square in New York City. Registration for the Seminar will open in March. Additional details will be available on the Cas Web Site as soon as they are available. 





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# CAS Basic Ratemaking and Reserving Texts to be Translated into Russian

**T**he CAS Centennial Goal envisions the Society as a leading global resource in educating casualty actuaries, and the organization took another step in that direction with an agreement to have the CAS texts covering P&C ratemaking and loss reserving translated into Russian.

Dina Urzhumova, the chairperson of the Qualifying Committee of the Actuarial Society of Kazakhstan, contacted the CAS to request permission to translate “Basic Ratemaking” and “Estimating Unpaid Claims Using Basic Techniques.”

In response to receiving permission to translate the texts, Ms. Urzhumova wrote:

Thank you very much for the permission to translate the two study notes. We highly appreciate your kind attitude to our developing society and your warm regards.


The materials will help us to improve the content of P&C study courses in Kazakhstan, Azerbaijan, and Kyrgyzstan.

The CAS released “Basic Ratemaking” in September 2009 as a comprehensive resource for practicing actuaries and actuarial candidates. Geoff Werner and Claudine Modlin of EMB America, LLC were the principal authors of the text, which is used on the 2010 CAS Exam 5 syllabus. According to the authors, “This text introduces fundamental ratemaking principles supported by consistent terminology and straightforward examples.

We focused on quantitative analysis as well as practical considerations in the ratemaking process.”

In June 2009, the CAS released “Estimating Unpaid Claims Using Basic Techniques.” Authored by Jacqueline Frank Friedland of KPMG LLP, the text consolidates numerous papers that addressed estimating unpaid claims on the CAS basic education syllabus. As Ms. Friedland notes, “Two major benefits of one educational publication are (1) consistent definitions of terms and (2) examples that are used with multiple estimation techniques.” The text was introduced for use on the CAS Exam 6 syllabus in 2009.

The CAS Board of Directors initiated the project to provide consolidated texts on the topics of reserving and ratemaking and approved the engagement of consultants to prepare the material. In light of the Centennial Goal, the texts were written to be useful to general insurance actuaries internationally, and the CAS offers the publications available free of charge on its Web Site.

CAS Fellow Peter Murdza introduced the texts to the Kazakh actuaries. He had been one of three actuaries to teach a property-casualty seminar in Almaty, Kazakhstan in 2004, and more recently volunteered to teach a course on property-casualty ratemaking and reserving in Azerbaijan. Since the two CAS texts were available without cost and were on the current CAS syllabus, he recommended that they be used in the course. 


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## 2009 DRM Call Paper Prize Awarded

The DRM committee has awarded a \$2,500 prize award to authors John Burkett, FCAS, Ph.D.; Timothy Pratt, FCAS; Gerald Kirschner, FCAS; Jennifer Cheslawski, ACAS; and Diana Rangelova for their paper “Holistic Approach to Setting Risk Limits.”

This paper uses a hypothetical medium-sized, multi-line, mutual insurer and the Public Access DFA Dynamo 4 Model (Dynamo 4) to holistically evaluate a company’s current risk limits. Historically, the company’s risk limits were set in isolation with an eye towards capital preservation. The risk limits reviewed

include those pertaining to growth rates, retentions within the company’s reinsurance program, and investment policy statement limits.

The Dynamo 4 model is used to test and suggest improvements to the current risk limits from an enterprise-wide capital preservation perspective. The paper concludes that certain risk limits that were set in isolation and originally appeared to mitigate risk were actually negatively affecting the company’s long-term solvency goals. 

# Best-Fitting Development Factors

**A**ctuaries are hired for many reasons. Generally, client concerns focus more on premiums and reserves than intermediate steps like development factors. In a sense, development factors are a step in an actuarial journey, not a destination.

The purpose of this brainstorm (or perhaps we should write “brainbreeze”) article is to present an approach to the derivation of development factors that focuses more on the fit-to-dollar amounts than the development pattern as such.

By way of example, suppose we have the following triangle of observed amounts:

Period	Maturity				
	<u>a</u>	<u>b</u>	<u>c</u>	<u>...</u>	<u>n</u>
1	$a_1$	$b_1$	$c_1$	...	$n_n$
2	$a_2$	$b_2$	$c_2$	...	--
3	$a_3$	$b_3$	$c_3$	...	--
--	--	--	--	--	--
n-1	$a_{n-1}$	$b_{n-1}$	--	--	--
n	$a_n$	--	--	--	--

First we pick a metric by which we will measure fit. For purposes of illustration we will minimize the sum of squared deviations in predicted values produced by age-to-age factors. Depending on the risk-bearing situation being analyzed by an actuary, other metrics are possible and may be preferable. Examples include assigning weights to measured deviations by period, minimizing absolute deviations, and so forth.

For development from maturity a to maturity b, the goal is to identify a development factor  $D$  that minimizes:

$$\sum_{i=1}^{n-1} (b_i - D \cdot a_i)^2.$$

Taking the derivative with respect to  $D$  and equating to zero determines the value of  $D$  to be:

$$D = \frac{\sum_{i=1}^{n-1} a_i \cdot b_i}{\sum_{i=1}^{n-1} a_i^2}.$$

Except by coincidence, the algorithm for this best-fitting development factor does not generate a simple function of age-to-age factors such as an average, a mode, or a median.

Although not a common formula, this estimator can be related to other development models. For example, let's now try to relate this estimator to one of the more recently developed

stochastic models, the overdispersed Poisson model. In our notation, this model assumes that:

$$b_i / \phi \sim \text{Poisson} (D \cdot a_i / \phi).$$

$\phi$  is known as a dispersion parameter. When  $\phi = 1$  we get the ordinary Poisson distribution.

The log-likelihood of the data  $\{b_i\}_{i=1}^{n-1}$  is given by:

$$\sum_{i=1}^{n-1} -D \cdot a_i / \phi + \sum_{i=1}^{n-1} b_i / \phi \cdot \log (D \cdot a_i / \phi) + \text{constant}.$$

Taking the derivative with respect to  $D$  and equating to zero determines the value of  $D$  to be:

$$D = \frac{\sum_{i=1}^{n-1} b_i}{\sum_{i=1}^{n-1} a_i} \quad (1)$$

This derivation shows us the well-known fact that the maximum likelihood estimate of a loss development factor in an overdispersed Poisson model is the familiar chain ladder estimate.

Let's now generalize our goodness-of-fit criteria to include weights and solve for  $D$ .


$$\sum_{i=1}^{n-1} w_i \cdot (b_i - D \cdot a_i)^2 \Rightarrow D = \frac{\sum_{i=1}^{n-1} w_i \cdot a_i \cdot b_i}{\sum_{i=1}^{n-1} w_i \cdot a_i^2} \quad (2)$$

It is a property of the Poisson distribution that

$$\text{Var}[b_i / \phi] = D \cdot a_i / \phi \Rightarrow \text{Var}[b_i] = D \cdot a_i \cdot \phi \Rightarrow \text{Var}[b_i] \propto a_i.$$

It is well-known that the minimum variance estimate of  $D$  occurs when we choose our weights to be inversely proportional to the  $\text{Var}[b_i]$ , i.e.,  $w_i = 1/a_i$ . Inserting these weights into Equation 2 above gives us another derivation of Equation 1. This shows us that we can view the chain ladder estimate as a weighted best-fitting development factor.

In situations where an actuary wants to demonstrate a fit to empirical data, a best-fitting algorithm can be a useful tool. Likewise, when a smoothed development pattern is used to estimate interim values or to adjust from, say, year-end values to reinsurance renewal date values, being able to address the fit to underlying data can enhance the credibility of the actuarial estimates presented.

The value of actuaries to their principals will continue to derive from the ability to analyze business situations, integrate indications from multiple sources, and determine appropriate solutions. This discussion of best-fitting development factors adds one more tool to the actuarial toolbox. 

# New Fellows Admitted November 2009



**Row 1, (left to right):** Mei-Hsuan Chao, Melanie R. Allred, Jennifer Kowall, Kimberly Ellen Lacker, **CAS President John Kollar**, Nina Vladimirovna Gau, Legaré Westfall Gresbam, Jia Liao, Lan See Lam, Baobui Ning.

**Row 2, (left to right):** Juan de la Cruz Espadas, Donna C. Chung, Johnny Chen, Jarrett Durand Cabell, Jason Benjamin Kurtz, Joshua Matthew Grode, Jennifer Yunqi Mo, Miriam Elizabeth Fisk, Fengru Liu, Chuan Cao.

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**Row 4, (left to right):** William Allen Meers, Li Zhang, Nicholas Anthony Papacoda, Michael Robert Sadowski, Denny Tei Tuan, Brant Hugo Wiperman, Jay W. Cooke.



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**Row 3, (left to right):** Arthur Zarembo, Llewellyn Smith, James Weiss, Anton Zalesky, Adam Trefford, Jin Zhang, Glen Leibowitz.

**New Fellows not pictured:** Melissa Jean Appenzeller, Ishmealine Merley Boye, Kevin S. Burke, Edward Daniel Chiang, Joseph Carl Christopherson, Robert C. Davies, Stephen Michael Harter, Keith Edward Henseler, Brady Lee Hermans, Scott David Hornyak, Min Jiang, YongWoon Kang, Stephen A. Knobloch, John M. Koch, David C. Korb, Ashley Aron Lambeth, Seung-Won (Sam) Lee, Long Li, Jia Liao, Christine Lin, Megan Elizabeth Link, Zachary James Martin, Frederic Matte, Kelli Rae McGinty, Isaac Merchant Jr., Douglas Robert Nation, Nurul Syubada Nurazmi, Damon W. Paisley, Jason Pessel, Stephane Renaud, Bruce Allen Ritter, Gregory A. Ryslik, Daniel Silverstein, Moffett A. Stephen, Michael Bryant Stienstra, Mick Arthur Vassilev, Anping Wang, Chong Wang, Xiaomin Wang, Yuan-Hung (David) Yu, Ruth Zea, Qimman Zhang.



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**Row 3, (left to right):** Dane Grand-Maison, Kristen M. Goodrich, Dennis Dar You Huang, Eugene Shevchuk, Thomas Hartl, Benjamin Ellis Crabtree, Edward Green Bradford II, Ray Michael Saatboff, Vinu Kuriakose.

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# Experts Tackle Systemic Risks in ERM-II Workshop

By Louise Francis

**B**ankers, financiers, life and P&C insurers, regulators, and academics met on August 18-19, 2009, for a special workshop on the topic of systemic risk, sponsored by the Enterprise Risk Management Institute International (ERM-II) in conjunction with Georgia State University. Workshop participants brainstormed on developing proposals for systemic risk regulation that will reduce the probability of future global crises. Shaun Wang, professor at Georgia State University in Atlanta and the workshop's principal organizer, drew attendees from a wide range of companies and organizations. CAS members were well-represented.

The workshop was a manifestation of the desire of many actuaries to apply their risk management expertise to critical global issues. The global financial crisis provides a good opportunity to influence the direction of key public policy issues intended to mitigate and prevent financial crises.

One motive for the workshop was the widespread understanding of the key role systemic risk played in the current global financial crisis. For instance, in fall 2008, nearly all asset classes, except U.S. treasuries, declined significantly in value and exhibited extreme tail correlation. A potential run on the supposedly ultra-safe money market funds almost led to the collapse of the banking system. The disruptions reflected structural problems in the financial system as well as the generally poor performance of ERM procedures and models at affected institutions. Mechanisms that are used to detect and respond to business and economic problems, such as transparent accounting, free flow of information, and prudent regulation to address moral hazards created by explicit and implicit government guarantees, did not function during the run-up to the crisis. In a statement issued on the workshop, ERM-II said that such structural issues must be addressed in order to move forward. "We cannot simply go back to where we were," the statement read. "There are also major forces (international competition, technology developments, etc.) that call for changes in American businesses. Now is an opportunistic time to take a hard look at these structural issues and make positive adjustments."

It is widely believed that one preventative tool needed is a systemic risk regulator (or systemic risk council). Though it is unclear what the systemic risk regulator would do, many believe

the regulator would be tasked with monitoring quantitative and qualitative measures of systemic risk and intervening to prevent potential disasters. As an example, Dr. Stephen Hiemstra provided graphical support that certain measures of widespread risk in the mortgage market, such as the average price of houses to average income, signaled a problem (i.e., a housing bubble) long before the mortgage crisis first broke in 2007. Various workshop presenters described other data and statistics that would be needed for systemic risk regulation.

The luncheon speaker, Allan Mendelowitz, provided a captivating view of system failure from the perspective of someone at a regulatory agency whose warnings about the problems were ignored. "The systemic failure in this crisis began when virtually all of the critical components in the system that make a market economy work ceased to function as expected," he said. Dr. Mendelowitz also alerted participants to a relatively new non-profit organization, the National Institute of Finance, which is attempting to develop the data and analytical information that a systemic risk regulator will need (see [www.ce-nif.org](http://www.ce-nif.org) for more information).

On the first day of the workshop, an introduction to the problem and survey of approaches and considerations for its solution were provided. During the second day, participants broke out into groups that worked independently on solutions to the systemic risk problem.

Among the conclusions were:

- Each company will need an ERM expert (i.e., a chief risk officer) who develops a structure, implements procedures and gathers risk-related information. This would be a significant position (C-Level) and report to the board.
- A risk intelligence framework will be needed (i.e., the risk measurement tools).
- Regulators will need a suite of tools (data, analytics, etc.).
- Regulators should encourage transparency and accountability, with compensation aligned with long-term performance and prudent stewardship.

ERM-II Workshop, page 31

# The Top Ten Casualty Actuarial Stories of 2009

By Michael Christian and Annie Chang Cloud

**T**his year's annual survey of CAS thought leaders shows that there was no strong agreement as to the number one casualty actuarial story for 2009. Unlike past years where a single story dominated the news (September 11th, collapse of AIG, etc.), we have the tightest voting scores from story one to story ten in history; a difference of 118 points. The difference between last year's top story (collapse of AIG) and the second ranked story (35% decrease in Dow) was 239 points; the difference was 532 points between story one and story ten.

Included in the top 10 are stories related to the collapse of AIG, namely the sale and rebranding of entities and the many attempts to legislate tighter regulation.

A second theme that touches several stories is the Obama administration's initiatives. Three top stories related to this theme are healthcare reform, inflation worries, and the recession's impact on losses.

Here are the top 10 stories of 2009:

## 10 **Widespread Appeal of Predictive Modeling in Personal Lines Pricing Expands into Commercial Lines**

With the exception of 2008, predictive modeling has consistently appeared on our top 10 listing since 2005. Guided by the success insurers have enjoyed with the application of predictive modeling techniques in personal lines pricing, actuaries have begun to develop predictive models in areas such as reinsurance and catastrophe management, as well as in the development of marketing strategies and claims.

## 9 **Recession Leads to Decreases in Insured Exposures and Insurers' Top Lines; Impact on Losses is Less Clear**

The decline in employment rate, reduction in travel spending, and diminished retail activities are just a few examples of the impact recessions have on exposure units such as payroll, gas mileage, and sales that are critical in the pricing of several property and casualty lines of business. The impact on overall insured losses is less clear and actuaries must be involved in assessing how changes in economic conditions can affect the profitability of certain lines of business.

## 8 **Will the Nation's Increased Level of Spending and Higher Deficits Lead to Inflation?**

As part of the effort to bring the nation out of the worst recession since the Great Depression, the U.S. government has committed significant funds to boost consumer spending with incentives such as the popular Cash for Clunkers auto program, as well as tax credits for first-time homebuyers and small businesses. The American Recovery and Reinvestment Act (ARRA) of 2009 is injecting \$787 billion into the economy. Further, the President's 2009 base budget for the Department of Defense was approximately \$515 billion, nearly a 74% increase over that of 2001. The national deficit was at a record \$1.4 trillion for fiscal year 2009. As the large amount of spending could lead to inflation, actuaries will need to be mindful of its possible impact on insurance costs.

## 7 **What Hard Market? Casualty Rates Continue to Decline**

Despite all the bad economic news, with the exception of financial institution D&O and E&O coverage, the market continued to soften for most of 2009. While some casualty segments are showing signs of stabilization, actuaries must maintain rigorous discipline in their pricing practice.

## 6 **Formal Adoption of Solvency II in Europe**

With the approval of the new solvency regulations by the European Parliament, the insurance industry moved one big step closer to the implementation of Solvency II, scheduled to be in force by October 2012. Current Solvency I framework calls for a less sophisticated estimation of capital requirements, while Solvency II introduces an economic risk-based solvency requirement measure. The new solvency legislation also adopts a total balance sheet approach, as opposed to focusing on only the liability side of the financial statement. Other improvements upon the current regime include the introduction of the Own Risk and Solvency Assessment (ORSA) and the Supervisory Review Process (SRP), both designed to enhance risk management of the European insurance industry. There will be many opportunities for actuaries to be involved with assisting companies in meeting compliance of Solvency II.

**The Top Ten**, page 20



## 5 American Academy of Actuaries (AAA) Ousts President-Elect, Then Settles Lawsuit

During August 2009, the majority of the Academy's board members met to discuss a letter signed by 19 of its past presidents raising concerns about Bruce Schobel, who was elected to serve as president of the AAA starting October 2009. The board subsequently agreed by majority vote to remove Mr. Schobel from his post as president-elect. In response, Mr. Schobel filed a lawsuit seeking an injunction to block the board's decision and an award of \$2 million for damages stemming from the "false and defamatory" information regarding unrelated events that occurred over three decades ago. The lawsuit was subsequently settled out of court by the end of September 2009. The negative publicity may have an impact on the public perception of the actuarial profession.

## 4 American International Group (AIG) Sells Off Pieces of its Empire and Rebrands its Remaining Operations

The collapse of AIG was identified as the top news story affecting casualty actuaries in 2008. Since then, AIG has sold off several of its operating units in an effort to repay its massive federal bailout loan and regain its credibility with the general public. At the same time, AIG found itself again in the center of public criticism during the first quarter of 2009 regarding the retention bonuses paid out to employees of its Financial Products unit. Perhaps the rebranding of its property & casualty insurance operation, now known as "Chartis," has the most direct impact on the members of the CAS. How AIG continues to reshape itself may have a significant impact on the marketplace.

## 3 Healthcare Reform

In light of the Obama administration's focus on healthcare reform, actuaries now have the opportunity to add value in many sectors of the marketplace. They can do this by quantifying the effects of recent legislation and promoting patient safety by fostering alternatives to current medical tort litigation.


## 2 Legislative Fallout from the AIG Crisis

The second-ranked story of 2009 again relates to the collapse of the insurance giant, AIG. Following the AIG crisis, there have been many legislative initiatives—these include a systematic risk regulator to monitor the safety and soundness of the nation's entire financial system, as well as a Federal Charter option. Actuaries will play an important role in assessing the impact of such changes.

## 1 Enterprise Risk Management (ERM) Advanced by the Financial Crisis

For the fifth year in a row, ERM-related topics made it into our top 10 listing, ranking as the top story for 2006 and 2009. More robust ERM practices could have helped to mitigate the 2008 financial crisis. Actuaries should continue to assist organizations in tracking every risk and protecting capital from a wide range of threats, in addition to offering their expertise in improving the depth and quality of disclosures.

The chart on the following page 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.

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



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# How the Stories Ranked and Why

				Votes	
Rank	News Story	Actuarial Significance	Score	#1 or #2	Total
1	Enterprise risk management advanced by the financial crisis	More robust ERM practices could have helped to prevent the 2008 crisis; actuaries continue to assist organizations in tracking every risk and protecting capital from a wide range of threats and aid in the depth and quality of disclosures.	644	18	57
2	Legislative fallout from the AIG crisis	Following the AIG crisis, there have been many legislative initiatives. These initiatives included a systemic risk regulator to monitor the safety and soundness of the nation's entire financial system and a Federal Charter option. Actuaries will play a role in assessing the impact of such changes.	617	21	52
3	Healthcare reform	In light of the Obama administration's focus on healthcare reform, actuaries can add value in many sectors of the marketplace by quantifying effects of recent legislation and promoting patient safety by fostering alternatives to current medical tort litigation.	610	21	51
4	AIG sells off pieces of its empire and re-brands other pieces	How AIG re-shapes itself may have a significant effect on the marketplace.	595	17	51
5	AAA ousts president-elect and then settles lawsuit	Negative press publicity may have an impact on the public perception of the actuarial profession.	582	14	58
6	Formal adoption of Solvency II in Europe	There will be many opportunities for actuaries to be involved with helping companies comply with Solvency II.	575	12	51
7	What hard market? Casualty rates continue to decline	Despite all the bad economic news, the market continued to soften for most of 2009 (excluding financial institution D&O and E&O), although some casualty segments are showing signs of stabilizing. Actuaries must use their influence in pricing discipline.	547	15	48
8	Will the nation's increased level of spending and higher deficits lead to inflation?	One of the key issues actuaries deal with is the effect of inflation on insurance costs. The large amount of spending could lead to inflation and will have to be watched closely by actuaries.	536	14	49
9	Recession leads to decreases in insured exposures and insurer's top lines; impact on losses less clear	Actuaries need to be involved in assessing how changes in economic conditions can affect profitability of certain lines of business.	527	14	45
10	Predictive modeling's widespread appeal in personal lines pricing takes hold in commercial lines also	Actuaries develop predictive models for pricing as well as in areas of reinsurance, CAT management, development of marketing strategy and claims.	526	6	51

# Actuarial Foundation Update



THE ACTUARIAL  
FOUNDATION

## The Actuarial Research Exchange

The Committee on Academic Relations has established an actuarial research matching service that links faculty and business or government actuaries for collaborative work on practical business and societal problems. This service is used to match researchers and research opportunities, taking into consideration details such as the research issue to be addressed and the background, expertise, and interests of the potential researcher.

The Committee on Academic Relations is a joint committee of Casualty Actuarial Society (CAS), Canadian Institute of Actuaries (CIA), and Society of Actuaries (SOA). The focus of the committee is encouraging and facilitating the evolving relationship between the actuarial profession and the academic community in order to achieve partnership on key initiatives.

The Committee on Academic Relations has asked the Actuarial Foundation to host the Actuarial Research Exchange, which can be found at: [http://www.actuarialfoundation.org/programs/actuarial/research\\_exchange.shtml](http://www.actuarialfoundation.org/programs/actuarial/research_exchange.shtml).

## Scholarships Available

Several scholarship applications are now available on The Actuarial Foundation's Web site. Check to see if you or someone you know qualifies for a John Culver Wooddy Scholarship, *Actuary of Tomorrow*—Stuart A. Robertson Memorial Scholarship, Actuarial Diversity Scholarship, or a Caribbean Actuarial Scholarship at [www.actuarialfoundation.org/programs/actuarial/scholarships.shtml](http://www.actuarialfoundation.org/programs/actuarial/scholarships.shtml).

## Nominate Someone Today for the 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. The deadline is March 15, 2010. For more information or to nominate someone for a Wynn Kent Award visit [www.actuarialfoundation.org/research\\_edu/prize\\_award.htm#kent](http://www.actuarialfoundation.org/research_edu/prize_award.htm#kent).

## “Quench The Thirst” Campaign...Interested?


Over 400 schools are looking for actuaries to help! Give students a reservoir of financial knowledge they can draw upon for the rest of their lives through the Foundation's Quench The Thirst campaign. Learn how you can help and see what program materials are being requested at [www.actuarialfoundation.org/donate/quench.shtml](http://www.actuarialfoundation.org/donate/quench.shtml).

## Calling on Actuaries to Return to the Classroom!

The Actuarial Foundation has found that schools implementing Advancing Student Achievement programs with actuaries as mentors are seeing improved attitudes towards math, increases in math scores, more interest in the actuarial field as a career, and many other encouraging results!

To learn more about getting involved in your community, visit [www.actuarialfoundation.org/programs/youth/mentors\\_needed.shtml](http://www.actuarialfoundation.org/programs/youth/mentors_needed.shtml).

## Keep Up With Foundation News!

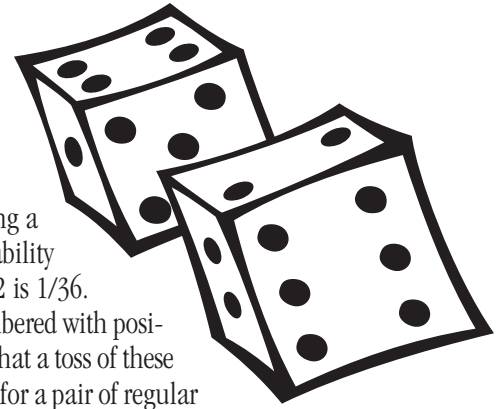
Read the most recent *Actuarial Foundation Newsletter* online at <http://www.actuarialfoundation.org/publications/newsletters.shtml>. 

## Unusual Dice

W

ith a normal pair of six-sided dice, the probability of throwing a 2 is  $1/36$ , the probability of throwing a 3 is  $2/36$ , the probability of throwing a 7 is  $6/36$ , and the probability of throwing a 12 is  $1/36$ .

There is a unique pair of six-sided dice, whose faces are numbered with positive integers, but neither die has faces labeled with 1 through 6, and the probability that a toss of these two dice results in a given sum of the faces is the same as the probability of that sum for a pair of regular dice. Can you figure out how to number these dice?



### Pennies and Dimes

The puzzle was to start with three pennies and two dimes in a line, alternating pennies and dimes. You were to find a way to slide two coins at a time so that you ended up with a line of three pennies and two dimes, in that order. A move consisted of sliding one penny and one dime, which had to be touching. As you slid them, the coins had to continue to touch and the one on the left had to remain the one on the left.

David Uhland provided a nice picture of a four-move solution:



Ed Bouchie, Frank Chang, Walter Fransen, Derek Jones, Joe Kilroy, Damon Raben, Rob Thomas, and Tom Struppeck also submitted solutions. [AR](#)

# Control Frameworks, Responsibilities, Interdependencies, and a Midwestern Cold Snap

*Enterprise Risk Management and COSO: A Guide for Directors, Executives, and Practitioners*  
by Harry Cendrowski and William C. Mair (John Wiley & Sons, Inc., 2009, \$75)

Reviewed by Margaret Tiller Sherwood

**D**o not read this book.

Just kidding. I actually like this book and recommend it. But let me tell you what happened while I was reading it.

When I originally agreed to review this book for the *Actuarial Review* mid-August 2009, the December 31, 2009, deadline seemed perfectly reasonable. I'm sure you all are familiar with sayings such as, "Life is what happens while you're making other plans," and "You plan, God laughs." These are all versions of Murphy's Law: anything that can go wrong will go wrong.

I won't bore you with the details, but I ended up needing a deadline extension, which Elizabeth Smith graciously provided. Then the real trouble started.

The first section of the book focuses on organizational risk management and is a high-level discussion of enterprise risk management (ERM) for directors and executives. I found much in this section that was very good, particularly the definitions of terms to be used in the book and the discussion of common pitfalls in implementing ERM procedures such as "the trap of historical data," "the human element," and "a failure to communicate," all of which should be of particular interest to actuaries.

This section concludes with a contributed chapter by two attorneys on mitigating risks in internal investigations and insurance coverage that should be a "must read" for anyone who may have to deal with an internal investigation.

The second section of the book covers quantitative risk management. The authors give an excellent background of control frameworks, with particular emphasis on those of the Committee of Sponsoring Organizations (COSO).

While I was reading about control frameworks, responsibilities, and interdependencies, the Midwest experienced one of the longest cold spells in recent history. First, the office furnace stopped working. This had happened once before, during the furnace's installation in the winter of 2003. The problem then

was that the water in the condensation drain pipe had frozen solid and backed up the water into the furnace, which stopped working, and through the ceiling of the floor below it, which fortunately was in my garage.

I thought a recurrence of the problem had been prevented by adding insulation to the drain pipe. Wrong. It had been "solved" by adding a catch basin to collect the water under the furnace and installing a trip switch, so that when the water got high enough, the furnace would cut off so it would be fine and the water would be contained in the catch basin. The good news was that this detection/prevention system worked. The bad news was that it had resulted in it being 49 degrees in my office with no prior warning.

The other bad news was that the only way to get the furnace back on was to bail out the water in the catch basin once or twice a day until the outside temperature rose enough for the water in the pipe to thaw. Oh, and the pipe through the garage ceiling had burst, so I could expect ceiling damage and water in my garage when the thaw came.

Next, the office toilet stopped working because of a frozen pipe, a prime example of one event with two consequences. I discovered this at an inconvenient moment. Fortunately, I know enough about how toilets work to use my bailing bucket for the catch basin to fill the toilet bowl so that it would flush. I decided not to reuse the catch basin water, though, as it might have something in it that would harm the toilet's innards. Better safe than sorry.

Then our home freezer died. This was not related to the weather but to the freezer's age. It also fulfilled the "trouble comes in threes" saying. The good news is that it was cold enough outside that we just boxed up the freezer contents and put the boxes on the deck. I'm not sure why we have five ice chests, but I'm glad we do. We did end up with two garbage bags of frozen food. I figure if any animals get to these, they deserve them. The question is: will the freezer parts arrive and



the freezer be operational before the outside temperature rises above freezing?

As I read about corrective actions, I pondered the short-term (bailing) and long-term (heat the garage or change the condensation pipe to copper and put a heating jacket on it) fixes for the office furnace. I wondered if heating the garage would also solve the toilet problem. Did I need to have Plan B for the frozen food on my deck, or were the information about the part delivery time, the information about my place in the repairman's schedule, and the weather forecast reliable?

Having finished the chapter on qualitative control concepts, I moved onto the chapter on quantitative control concepts. The authors provide a framework for assessing the complex relationships between internal controls. The resulting formulae can be tested against past events and used to estimate future events. They also can be used to evaluate various options to help identify key controls, consider cost effectiveness of controls, and evaluate alternative control approaches.

The next ten chapters focus on internal controls, primarily from a computer-based point of view. Given the widespread use of computers in all aspects of business, this focus is warranted, although I would have appreciated more discussion of the impact of external events such as long periods of extreme cold on internal controls.

And then the office server went down. While I am a fan of irony, this was a little much even if I was reading the part about what can go wrong in interdependent information technology systems in a book about enterprise risk management at the time. Did this mean I was on the second set of three bad things? Had the new offsite backup system had enough time to back up all the files? Was the point of this that I needed to stay off my work computer and finish reading the book?


Then I remembered the part in the book about responsibilities. I decided to let my computer person handle the server while I finished reading the book. After all, I had somewhat redundant systems: I could use my laptop to write the article, and my Internet card to send it out.

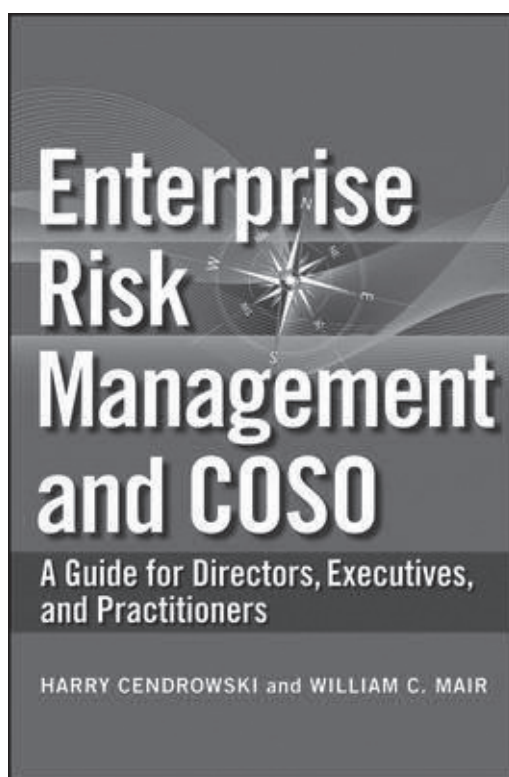
As I revisited parts of the book, I found myself particularly drawn to the chapter that describes a 23-step process for assessing internal control and the discussion of the forthcoming conversion from the rules-based United States ironically named Generally Accepted Accounting Principles (GAAP) to the principles-based International Financial Reporting Standards (IFRS). These are areas with which actuaries should be familiar.

I have a few minor quibbles with the book, such as the treatment of the word "data" as singular and not finding items in the index I expected to be there. And while most actuaries will be tempted to skip over the chapter on Excel usage and problems, they shouldn't. It is a reminder of what can and more often than we would like does happen.

I highly recommend this book but without the accompanying real-life scenario testing. Besides, who can resist a book that:

1. refers to abstention/avoidance by saying, "This is your mother's advice. If it might hurt, don't do it."
2. quotes Confucius on the importance of calling a thing by its correct name?

*Margaret Tiller Sherwood, FCAS, ASA, MAAA, FCA, CPCU, ARM, ERMP, CERA, is president of Tiller Consulting Group, Inc. and executive director of the International Association of Consulting Actuaries. She is a member of the CAS Enterprise Risk Management Committee and co-chairs its Subcommittee on the CERA Transition.* 



# Measuring Reforms

*Editor's Note: This article is part of a series written by members of the CAS Committee on Professionalism Education (COPE). Its intent is to stimulate discussion among CAS members. Therefore, positions are sometimes stated in such a way as to provoke reactions and thoughtful responses on the part of the readers. Responses are welcomed. The opinions expressed by readers and authors are for discussion purposes only and should not be used to prejudge the disposition of any actual case or modify published professional standards as they may apply in real-life situations.*

**Y**ou are a consulting actuary for a client in the State of Bliss. Your client is self-insured for general liability (up to a certain per occurrence limit) and every year you perform a reserve study that includes a projection of estimated costs for the next fiscal year, as required by the state.

Two years ago, the state implemented massive changes to the tort system, including restrictions on legal awards, caps on medical costs, and overall improvements to the regulatory system used to deliver benefits. However, major portions of the reform legislation were either unclear or undefined, and required substantial effort by the state's regulatory body to implement new procedures and guidelines. Even after two years, there are still some parts of the legislation that have yet to take effect or become implemented because of delays caused by the state regulators, who are understaffed and overworked.

At the time the legislation was passed two years ago, the state hired a third-party actuarial consultant to estimate the overall cost savings that would be generated by the reforms. The state's consultant estimated cost savings of approximately 10%, and the state immediately implemented a 10% reduction in the general liability advisory loss costs. Furthermore, the state required all self-insurers to explicitly reflect the impact of the tort reform in their calculation of projected future costs.

You have diligently researched the new legislation and engaged in detailed discussions with your client about how the new reforms will affect your client's cost levels. Despite the fact that the state has implemented a mandatory 10% reduction in loss costs, your analysis over the last two years since the reforms were implemented has not indicated any improvement in your client's overall cost levels. You also have not seen any change in either payment or reporting patterns and your client agrees that the reforms have not affected their book of business in a significant way. Your best estimate of the impact on future costs for your client is 0%. In other words, your analysis indicates that your client should not expect to see any reductions in future cost levels because of the new reforms.

As you prepare for the next reserve analysis, your client informs you that there have been recent staffing changes and the old management has been replaced with a new set of officers and directors. Your new contact at the client, the chief risk manager, is a former underwriter with considerable experience in the general liability market in the State of Bliss. She tells you that based on her experience working with previous self-insurers she believes that, going forward, the new reforms will result in cost savings of 8%. Further, she indicates that she is privy to the inner workings of the state regulatory agency and knows that certain reform guidelines, heretofore unpublished, will be implemented post haste, and that this is further evidence that there will be substantial savings in the coming year. You remind her that you have had lengthy discussions with her predecessors regarding the reforms, and everyone has agreed that due to the unique characteristics of your clients' book, little or no savings would be realized by the reforms. You have also contacted the state regulatory agency directly, which denies that any new guidelines are in the process of being implemented. However, she insists that she is right because she knows the market better than you. In addition, she indicates that other actuarial firms that she had previously dealt with have reflected an adjustment of 8% in their calculation of projected costs, and this must be evidence that she is correct. She strongly suggests that your next analysis include an 8% adjustment for anticipated savings due to the reform.

## Do you include the 8% or not?

### Yes

It is okay to rely on her expertise and include an 8% adjustment in your analysis. She knows the market better than you and has been in contact with a wider circle of professionals with considerable knowledge of the reform legislation. The CAS Statement of Principles Regarding Property and Casualty Loss and Loss Adjustment Expense Reserves lists the following "Consideration."

**Measuring Reforms,** page 27

*External Influences—Due regard should be given to the impact of external influences. External influences include the judicial environment, regulatory and legislative changes, residual or involuntary market mechanisms, and economic variables such as inflation.*

In addition, ASOP #43, Property/Casualty Unpaid Claim Estimates, states the following under Section 3.6.7:

*When determining whether there have been known, significant changes in conditions, the actuary should consider obtaining supporting information from the principal...and may rely upon their representations...*

You should, however, make sure to document this discussion, and indicate in your report that you are relying on management's best estimate with regards to the impact of the reform. In this regard, ASOP #41, Actuarial Communications, contains the following guidance under Section 3.1.8:

*Methods or Assumptions Prescribed by a Principal—If the actuary performs a service using methods or assumptions prescribed by a principal, the actuary should disclose the source of the prescribed methods or assumptions in the actuarial communication.*

## No

You should not make the adjustment simply because your client requests it unless you can reasonably support it with additional information. ASOP #43, Section 3.6.2 states:

*The Actuary should consider the reasonableness of the assumptions underlying each method or model used... The actuary should use assumptions that...have no known significant bias...*

In addition, ASOP #43, Section 3.7.1. states:

*The actuary should assess the reasonableness of the unpaid claim estimate, using appropriate indicators or tests that...provide a validation that the unpaid claim estimate is reasonable...The reasonableness...should be determined based on facts known to...the actuary at the time of estimation.*

In this case, you cannot verify her claim that new guidelines are close to being published, and her assertion that other actuaries are including this adjustment is simply hearsay. Your review of both the client's book of business and historical claims history does not support the type of adjustment she is requesting. **AR**

# Some Insurance Leaders Have Staying Power

By Walter Wright

In 1985 Dorothy A. Zelenko reported on Hank Greenberg's participation as a guest speaker at a CAS meeting. Even 25 years ago he was referred to as a legend.

*Institutional Investor* magazine once called him "the toughest man in Insurance Land," and a *Forbes* article characterized him as "the Vince Lombardi of insurance." At AIG (where this writer worked for eight years) he was a legend in his own time.

Maurice "Hank" Greenberg, Chairman, President, and CEO of American International Group... might have been expected to deliver a fiery sermon on the evils of cash flow underwriting and irresponsible price cutting. He didn't. Instead he stuck pretty much to the assigned topic of deregulation, outlining his, for the most part, moderate view on the subject. For example:

- Regulation costs money, so less is better than more.
- State regulation is preferable to federal regulation.
- Open competition, where it has been tried, has generally produced lower rates for consumers than regulated tariffs.
- Insolvency—with the threat of losses to policyholders as well as shareholders—is the crack in any insurance deregulation scheme.
- As other aspects of insurance regulation become less restrictive (rates, forms, investments, ownership) officials should act more quickly and decisively to prevent or limit insolvencies.

## Favors Insurance in Banks

Mr. Greenberg, who served on a New York State commission on banking and insurance, was particularly interested in that aspect of deregulation. The banks' entry into insurance he considers inevitable and not undesirable with "proper controls." These would include separating banking from insurance operations and insulating the results so that bad loans wouldn't impair an entity's

25 Years Ago, page 28

# New Issue of *Variance* Forthcoming

**T**he new issue of *Variance* presents papers on a variety of areas of interest.

An actuary who makes estimates of claim liabilities must select and apply one or more actuarial projection methods, interpret the results, and apply judgment. In “Claim Reserving Performance Testing and the Control Cycle” by Yi Jing, Joseph Lebens, and Stephen Lowe, the authors examine how performance testing of an actuarial projection method can provide empirical evidence as to the inherent level of estimation error associated with its forecasts. The paper illustrates the application of the techniques via a case study, including some interesting empirical results.

“NCCI’s 2007 Hazard Group Mapping” by John P. Robertson of the National Council on Compensation Insurance (NCCI) describes the analysis that led to the assignment of classes to NCCI’s new seven-hazard-group system, implemented at the beginning of 2007. Hazard groups are collections of workers compensation classifications that use the same expected excess loss factors (ratios of expected losses excess of a limit to total expected losses). Excess loss factors are used by NCCI in class ratemaking (estimating the expected ratio of losses to payroll for individual workers compensation classifications).

Although numerous tail index estimators have been proposed in the literature, many of them require detailed knowledge of individual losses and are thus inappropriate for insurance data in partitioned form. In “Extreme Value Analysis for Partitioned Insurance Losses,” John B. Henry III and Ping-Hung Hsieh bridge this gap by developing a tail index estimator suitable for partitioned loss data, focusing only on fitting the model in the tail of the distribution where it is believed that the Pareto-type form holds.

“Stochastic Loss Reserving with the Collective Risk Model” by

Glenn Meyers presents a Bayesian stochastic loss reserve model in which (1) the model for expected loss payments depends upon unknown parameters that determine the expected loss ratio for each accident year and the expected payment for each settlement lag; (2) the distribution of outcomes is given by the collective risk model in which the expected claim severity increases with the settlement lag and the claim count distribution is given by a Poisson distribution with its mean determined by dividing the expected loss by the expected claim severity; (3) the parameter sets that describe the posterior distribution of the parameters in (1) above are calculated with the Metropolis-Hastings algorithm; and (4), for each parameter set generated by the Metropolis-Hastings algorithm in (3), the predicted distribution of outcomes is calculated using a Fast Fourier Transform (FFT). The Bayesian predictive distribution of outcomes is a mixture of the distributions of outcomes over all the parameter sets produced by the Metropolis-Hastings algorithm.

Often in non-life insurance, claim reserves are the largest position on the liability side of the balance sheet. Therefore, the estimation of adequate claim reserves for a portfolio consisting of several run-off subportfolios is relevant for every non-life insurance company. In “Combining Chain-Ladder and Additive Loss Reserving Methods for Dependent Lines of Business,” Michael Merz and Mario V. Wüthrich provide a framework in which we unify the multivariate chain-ladder (CL) model and the multivariate additive loss reserving (ALR) model into one model. This model allows for the simultaneous study of individual run-off subportfolios in which they use both the CL method and the ALR method for different subportfolios. They also derive an estimator for the conditional mean square error of prediction (MSEP) for the predictor of the ultimate claims of the total portfolio. [AR](#)

## 25 Years Ago, From page 27

ability to pay insurance claims, or underwriting losses threaten its ability to repay depositors. Proper controls at this time would also mean, he felt, postponing the granting to banks of the authority to

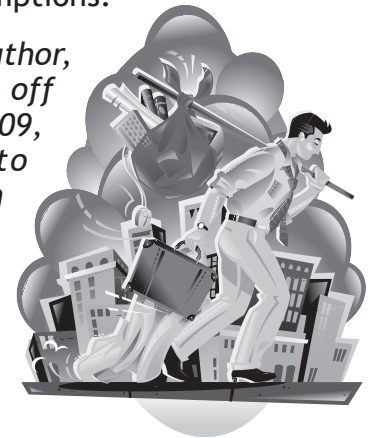
be insurance underwriters. Better to wait until conditions improve in the insurance industry and the banks solve some of their own capital problems. [AR](#)



# Top 10 Things An ACAS Can Do After Getting Laid Off

- 1) Find your center, inner beauty, and purpose in life by studying for Part 9.
- 2) Compile a list of quick retorts when your parents lament the fact that you could have become a doctor. ("Hey, c'mon Mom, actuaries help people too—just look at the efficiency of my last rating plan!")
- 3) Take the CFA exams "just in case."
- 4) Bring in a little extra money by doing some "actuarial modeling" in the red-light districts. ("I thought they said they wanted someone with previous SAS experience.")
- 5) Lobby the CAS Examination Committee for much lower pass rates, like 0%, for example.
- 6) Wonder if your German sports car is safe in the parking lot as you shop at Dollar stores, Big Lots, and Salvation Army consignment shops. ("Hmm, maybe I should've put the top up....")
- 7) Shred your old study notes and stuff them into your jacket and pants for extra warmth on those cold nights under the bridge.
- 8) Troll CAS meetings for potential "Sugar Daddy" or "Sugar Momma."
- 9) Stand at the end of highway exits with a sign that reads, "Will review reserve adequacy for food—God Bless You!"
- 10) Get into a fight with other guy standing at the end of the highway exit because he stole your cardboard box and disparaged your trend assumptions.

*Editor's note: The author, who has been laid off since October 1, 2009, has been trying to find the humor in many of the real-life situations in which he finds himself. [AR](#)*



## D.W. Simpson Makes CAS Trust Donation

The Trustees for the CAS Trust are pleased to announce that D.W. Simpson Global Actuarial Recruitment donated \$10,000 to the Trust in 2009. This brings the total contribution by D.W. Simpson to the Trust to \$140,000 over the past several years. The CAS sincerely thanks D.W. Simpson and its employees for its continued support of the CAS mission to advance actuarial science.

### David W. Simpson Passes

David W. Simpson, founder and owner of D.W. Simpson

Global Actuarial Recruitment, age 50, of Chicago, Illinois, died in his home of cancer on November 30, 2009. He is survived by his wife Patricia Simpson, an active partner and owner of D.W. Simpson, and their three children. Early in his career, Mr. Simpson observed that actuaries are vital to insurance company operations and were growing in numbers. He and Patricia directed their recruiting firm toward this specialization. Today D.W. Simpson has offices in Chicago, Los Angeles, Singapore, Hong Kong, Australia, India, London, Frankfurt and Switzerland. [AR](#)

## MIA Hunter

According to the Department of Defense, there are more than 73,000 American military personnel from World War II still listed as missing in action (MIA). In May 2008, Steve Briggs joined a mission to find MIAs in Papua New Guinea (PNG), where an estimated 300+ American airplanes are still lost in the island's jungles. A college roommate had been on such a mission in 2006. The stories he told upon returning intrigued Steve. When the roommate joined the 2008 mission, Steve decided to go along. Steve's father had served in the Navy in the South Pacific during WWII. He was curious to see that part of the world where his father had spent time. The fact that the former college roommate is Steve's personal doctor also gave him a level of comfort.

The mission director was Bryan Moon, a co-founder of MIA Hunters. He had been a teenager in London during the WWII bombings. His contact with American military personnel created a lasting memory of their war efforts. He is now a Minnesotan, giving back by searching for lost WWII Americans in PNG.

After five flights (Minneapolis to Los Angeles, to Auckland, to Brisbane, to Port Moresby, PNG, and final leg to Madang, PNG), they left by banana boats down the northern coast more than 50 miles to the village of Yeimas. PNG is known for its abundance of languages—they heard about 12 coastal languages on their boat trip. Using Yeimas as base camp, they made daily excursions along with an interpreter. They were told the small children in Yeimas had never seen white people. The jungle villages have no electricity or running water. The women collect firewood and river water to prepare daily meals. Essentially they are subsistence farmers. Their daily excursions were to other coastal villages where they were routinely greeted with much banging of drums, chanting, singing, dancing, and

face painting, just as National Geographic would have one expect. Once the ceremonial greetings were concluded, local villagers led them out to airplane crash sites. They took pictures, determined the location through the Global Positioning System (GPS), and looked for any identifying marks on planes, but removed nothing from the sites. They saw not only American planes, but also came across a Japanese bomber and a Japanese fighter plane. Wings and tails were commonly missing, but the remainders of many planes were amazingly still intact after 65 years. They found human remains at one crash site and returned home with 21 WWII dog tags.

It is probable that deep in the jungle, all remains would be either crash victims or local villagers. However, villagers are very spiritual and it would be very unlikely that they would leave two of their people in the remote location. They do bury their dead—Steve even saw the Yeimas village cemetery during an exploration of the campsite. They concluded that villagers discovered the crash site and remains and they moved the bodies a short distance away to a rocky overhang, a somewhat protected area. It's unlikely that the remains would have been carried back to their village from that distance. Also, villagers

commonly recognize a crash site as a "place of rest" and treat it as such, thus leaving the bodies. It's possible that villagers buried the remains in a shallow grave, but the remains became uncovered and smaller bones were scattered over the years. If and when body parts are identified, the military recovery group of the Defense Department treats the matter privately and reports only to families.

Naturally such a journey involved serious dangers. There were no medical facilities nearby and the ability to communicate from the jungle was extremely limited. Although they had a satellite phone, it was of little value most of the time. Inoculations against malaria and other diseases were needed before leaving the States.




While there are no large cats (lions, tigers, panthers, etc.) on the island, there are crocodiles and pythons. Steve and his party were not nearly so adept in dealing with the terrain as the villagers, who were commonly barefoot. One very long hike up and down a mountain ridge got pulse rates racing and hearts beating excessively. On one stretch they had to rest every few minutes. One member could not get his pulse down and was unable to continue. He had to be carried by porters up the ridge until he was able to catch his breath. The constant heat and humidity, which extends into the night, took its toll. Additionally, some of the elderly villagers really didn't seem to like having strangers in their village—not necessarily a dangerous situation, but still unwelcoming and intimidating.

The dangers apparently did not include cannibalism, which Steve thinks was eliminated from the island in the 1970s. Nevertheless the group was a little worried, because upon entering villages they had orange berries smeared on their faces during the ceremonial activities, and they wondered if it was really a marinade! The natives seemed to be a very happy and content people. By our standards, they had nothing. They are so removed from civilization that no one ever approached to beg. In fact, they gave the mission gifts when they left the Yeimas village. The mission reciprocated in gift giving. People from nearby villages heard there were “white people” in Yeimas and many came over in the evenings to see them. There was not a lot of direct communication from the mission to the villagers, except through the translator. However, Steve did speak quite comfortably with several of the older teenagers and young adults, since the schools do teach English to the children, as PNG had an Australian/English connection. The children in Yeimas have four hours of school each day and walk two hours each way to get there.

Typically, a village has about 100-200 people. Consistent with his observations about its size, after returning home Steve checked Wikipedia and learned that 120 people speak the language of Wab, a village they visited. Huts are bamboo with thatched roofs and are elevated two to four feet off the ground, undoubtedly necessary during the wet season. Chickens and pigs wander freely in the village.

At every village they were asked to “tell a story” to the people. What that meant was to introduce and give a short story about themselves. Several of the Minnesotans grew up on farms and shared stories of their raising chickens or pigs. Steve doesn't know if the villagers even believed their stories. He shared that he didn't grow up on a farm and lived in the city. The translator referred to him as a “city man” in his Australian-type accent. The villagers laughed at “city man.” He suspects that most of them thought he was certainly going to perish and needed to be watched especially closely. While they were hiking the mountain ridge on a particularly treacherous area, each one in their party had a porter directly behind him. Every time anyone's foot slipped, his porter grabbed him, saving the “city man” a long tumble several times. One young man, about 25 years old, asked him, “In America, can you see the sky when you look up?” Steve was quite confused by what he meant, eventually concluding that the young man thought everyone in America lived in, say New York City, and when they looked up they saw nothing but buildings. He suspects that their education about our country depicts pictures of large cities more than those of small towns or rural countryside.

*Steve Briggs is second vice president, actuary of Northland Insurance Companies, a subsidiary of The Travelers Companies. *

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## ERM-II Workshop, From page 18

- Financial engineering, accounting, and actuarial professions should collaborate to promote studies of the financial system as a whole.

Wayne Fisher, executive director of ERM-II, also a current board member of the CAS, states that ERM-II will work with the CAS, SOA, AAA, other risk management organizations and regulators on research to understand systemic risk and support

the needs of a systemic risk regulator. This would include defining elements of a risk intelligence infrastructure.

More specific recommendations will be made for the insurance industry, at least initially, where many of the participants have expertise and responsibilities.

To view the workshop presentations and press release, visit [www.ermii.org/News/SystemicRisksmeeting.html](http://www.ermii.org/News/SystemicRisksmeeting.html). 

# Looking Backward and Forward: A Review of the Annual Top 10 Stories For Actuaries

By Debbie Rosenberg

**A**t the onset of this new decade, I thought it appropriate to take a look back at some of the issues we actuaries found to be the most important to us and for our profession.

I first participated in the annual survey of the top 10 stories for actuaries in December 1996. The process was somewhat different in those days. The survey was done in two rounds. The first round was a listing of 57 possible issues grouped by topic area. Fifteen candidate stories were selected as a starting point. From there you could add other stories and then rank your top 10. The survey was faxed to all participants. A second round was then conducted showing the results of the entire group. You then had the opportunity to revise your top 10 selections. Since 1996, the survey has undergone some changes including cutting down to one round, dispensing with faxes, and going totally electronic with the wonders of Zoomerang, an online survey software tool.

While the top-rated stories have changed over the years, the survey results of the past 15 years indicate that actuaries remain focused on issues of reserve adequacy, the underwriting cycle, catastrophes, actuarial credibility, risk management, and mergers and acquisitions. I wonder how well we can predict the top stories for 2010, given the information we already have.

## The Past

The top story for 1996 was “Reinsurers Consolidate-Swiss Re, Munich, Gen Re, ACE.” The actuarial rationale was, “more sophisticated market, less competition or more?” Sound familiar? The story that ranked #4 was “Integrated Risk Management Expands.”

In 1997 the growth of risk securitization took the spotlight. Perhaps we identified this issue too early on.

For the top choice in 1998 we reverted back to the theme of consolidation of the industry, with expansion of risk securitization coming in at #2. Our top 10 also included the concerns Y2K and highlighted the expansion of enterprise risk management (ERM).

For 1999 we selected the repeal of Glass-Steagall as the #1 story. Little did we realize the significant impact of this repeal on the entire economy in the following decade. Unicover made the top 10 list as well as the securitization of catastrophe risks. Mergers continue to appear as a top concern for actuaries, although at a lower level reflecting the decrease in M&A activity.

The start of a new decade was dominated by the issues of insolvencies of major carriers, deteriorating underwriting results, a hardening market for commercial lines, as well as deficient loss reserves. ERM was once again included in the top 10.

Without doubt, the top story for many professions in 2001 was the terrorist attacks on the World Trade Center.

Terrorism ranked second on the 2002 listing, with asbestos claims as the number one story. The underwriting cycle and reserve adequacy also made the top 10.

As the result of a critical article published by S&P, actuarial credibility was the top news story for 2003. Reserve adequacy and Sarbanes-Oxley came in at numbers two and three, respectively.

The lead story of 2004 was the investigation by the then New York State Attorney General Eliot Spitzer of brokers and insurers in relation to contingent commissions and bid rigging. Actuarial credibility came in at number two.

Natural catastrophes, such as Katrina, Rita, and Wilma, made the headline for 2005 due to the unprecedented hurricane and storm activity. At number three was the introduction of the requirement to consider comments on the risk of material adverse deviation in loss reserve opinions. Actuarial credibility came in at number five followed by ERM.


In 2006 ERM moved to the head of the list as the S&P included ERM as a rating requirement.

The top story for 2007 was the introduction of new qualification standards by the American Academy of Actuaries. For the first time climate change was included among the options but did not make it into the top ten.

The financial crisis dominated the news stories in 2008. The top story was the collapse of AIG, followed by the plunge of the value of the Dow. The reputation of casualty actuaries came in at number three.

As for the results for 2009, see page 19 of this issue to see what issue made it to first place.

## The Future

Here's to 2010 with adequate reserves, no catastrophes (natural or otherwise), perfect predictive modeling, sufficient surplus, and the actuarial profession as the number one job! 



# Top Five Actuarial Stories 1996-2008

Year	#1	#2	#3	#4	#5
1996	Reinsurers consolidate-Swiss Re, Munich, Gen Re, ACE	Start up of the California Earthquake Authority	NAIC footnote 24—Disclosure of EIL losses	Emergence of integrated risk management	Barnett Bank decision of the Supreme Court
1997	Growth of risk securitization	Insurers urged by OCC to welcome banks into insurance business	Florida Hurricane Commission approves CAT models	Growth of enterprise risk management	Expanded use of Internet
1998	Continued consolidation of the P/C insurance industry	Expansion of risk securitization	Integration of banks and P/C insurance companies	Growth of new distribution technologies (Internet, phone) and electronic commerce	Escalation of Y2K issues
1999	Federal legislation repeal of Glass-Steagall Act	Various Internet sites launched to sell insurance	Insurer underwriting results deteriorate, some take reserve hits	Insurers securitize more catastrophe risks	State Farm loses class action case on non-original equipment repair parts
2000	Major carriers founder	Underwriting results deteriorate especially for workers compensation	Market hardening—commercial lines and reinsurance	Industry watchdogs pronounce “loss reserves deficient”	Leading corporations move to enterprise-wide integrated view of managing risk
2001	September 11 terrorist attacks	Underwriting market hardens—price and terms	Mold claims give rise to claims and coverage crisis	Reinsurance scarce for terrorism; Feds contemplate role	Reliance and others put into liquidation, rehab, or supervision
2002	Asbestos claims continue to give rise to claims and coverage crisis	Terrorism Risk Insurance Act signed into law	Mold claims continue to give rise to claims and coverage crisis	Corporate scandal—emphasis on transparency and accurate accounting	Medical malpractice crisis—availability and affordability
2003	Actuarial credibility put to the test; S&P criticizes actuaries	Industry reserve adequacy; influx of reserve increases for insurers and reinsurers	Companies employ tighter governance standards in light of Sarbanes-Oxley	Asbestos exposures still plague insurers—no asbestos agreement reached yet	Debate with consumers and regulators; the use of credit scoring as a pricing tool
2004	NY Attorney General Spitzer probes brokers and insurers	Actuarial organizations respond to recent criticism of loss reserving	Complying with Sarbanes-Oxley	NAIC makes significant changes to opinion instructions	Prices drop, market softens
2005	Hurricanes cause billions in damages	Increased scrutiny of finite risk	Actuarial opinions and risk of material adverse deviation	Evolution of catastrophe modeling	CAS Task Force and Academy's CRUSAP campaign to increase credibility of actuaries
2006	Companies continue to sort out what ERM means for them as S&P focuses on ERM for rating evaluation	SEC questions companies on reserve range/variability	Continued pressure on audit firms results in more critical review of underlying actuarial work	P/C CAT models continue to evolve	Use of predictive modeling spreads to mid-sized and regional personal lines carriers, and to commercial lines
2007	American Academy of Actuaries introduces new qualification standards	Softening market: P/C rates decline for third year	Predictive modeling expands beyond personal lines pricing into commercial lines and claims management	Mortgage/credit crisis affects insurance products and insurer investment portfolios	U.S. Supreme Court reviewing credit scores in insurer personal auto pricing
2008	Hell freezes over—the collapse of AIG	Dow loses a third of its value from January 1 level of 13,000+	Ron Ferguson sentenced to two years in prison	P/C insurer surplus shrinks \$13 billion during the first half of 2008, prediction of 5-10% decline by year end	Failure of regulation in preventing the current economic crisis

# Climate Change Risk Is an Emergent Issue

**BOSTON, Ma.**—Managing climate change risk is a growing priority for insurers and actuaries, attendees of the Casualty Actuarial Society (CAS) annual meeting were told during a general session titled, “Climate Risk Reporting and Monitoring,” which was held November 17, 2009.

Joel Ario, commissioner of the Pennsylvania Department of Insurance, observed that there has been a marked shift in recent years in how insurers approach the issue of climate change. “When we talk to insurers about what they are doing in the area of climate change, nobody questions the issue. The discussion about not doing anything is long past. The discussion is now about what to do,” he said.

Mr. Ario cited findings from a 2009 report from Ceres ([www.ceres.org](http://www.ceres.org)) showing that hundreds of climate change initiatives are underway in the insurance industry. Ceres is a national network of investors, environmental organizations and other public interest groups working with companies and investors to address sustainability challenges such as global climate change. Of the 10 categories related to insurer climate change activities in the Ceres report, Mr. Ario noted that by far the largest percentage (22 percent) is dedicated to creating innovative insurance products and services. “That illustrates an important point. Clearly there is risk to the insurance industry around climate change, but as any actuary knows, with every risk there is an opportunity to offer new products to take some of that risk away,” he said.

Mr. Ario said increasing numbers of climate change-related products are being offered by insurers, especially in the area of green buildings and transportation. Another growing area of importance is climate change risk disclosure. In March 2009, the National Association of Insurance Commissioners (NAIC) unanimously voted for a climate risk disclosure survey to be implemented in all 50 states. As a result, starting with the financial reporting year 2009, insurer groups with annual premiums of \$500 million or more will be required to complete the survey by May 1, 2010.

Mr. Ario said the survey consists of a series of eight questions designed to provide regulators, shareholders, and the public with information about the financial risks insurers face from climate change and the actions they are taking to respond to these risks.

“Our objective with the survey is to get information on the public record,” he added. The Securities and Exchange Commission (SEC) is also exploring possible climate risk disclosures for all public companies, including insurers, according to Mr. Ario.

Andrew Logan, director of Ceres, observed that climate change is an issue of critical importance to the insurance industry that brings with it risks as well as tremendous opportunities for companies that position themselves appropriately.

“Insurers have a key role to play in creating solutions to climate change and actuaries have a significant role to play in catalyzing that action into hard facts,” he said.

Mr. Logan noted that climate change has the potential to affect nearly every segment of the insurance industry, including property, health and life, business interruption, pollution liability, and invested assets.

Investors are also increasingly concerned about the potential impact of climate change on their investment portfolios.

Mr. Logan said that when investors look at the issue of climate change they see four main areas of risk: physical risk, regulatory risk, competitiveness risk, and litigation risk.

In response to the growing concern of investors in 2003, Ceres launched its Investor Network on Climate Risk (INCR). “We started with around 10 investors with around \$600 billion in assets. We are now up to 80 investors with \$9 trillion in assets under management,” he said.

The network has also grown in terms of investor type. “Back in 2003 we were working with socially responsible investors. Now we are dealing with mainstream investment funds,” he said. Mr. Logan noted that increasingly investors now view addressing climate change as a matter of fiduciary duty. “It’s not just about doing good, it’s about doing your job as an investor and as a corporate community.”

Climate change also threatens the assets of insurers and some insurers are beginning to examine their investments from this perspective, Mr. Logan said. “Just as investors are concerned about the potential negative impact on their portfolios, insurers should also be concerned.” He cited a recent ClimateWise initiative in which 41 member companies, including a number of insurers, have pledged to incorporate climate change into their investment strategies.

Session moderator Rita Zona, a principal with Deloitte Consulting LLP, gave an overview of the work of a new CAS committee established to address climate change. The goal of the committee is to recommend, support, and perform research on climate change and assess the potential risk management implications for the insurance industry. Ms. Zona noted that the committee has identified several key areas of focus, including

understanding the modeling of future climate scenarios and exploring implications for the actuarial profession. “Those implications might be around insurance products and services. There are also implications for our reserving practices and company strategies,” she said.

The actuarial profession wants to have a significant role in climate change modeling. “Actuaries are at the forefront of climate change modeling, given our expertise and skills. In particular we want to be able to interpret the results of the detailed scientific models and translate them for our company management and our clients,” she said. [AR](#)



*Kevin Dickson, CAS Vice President-ERM, holds a sign directing new CAS Associates to their designated seating area during the 2009 CAS Annual Business Session.*



*CAS President John Kollar (left) shares a moment with Jeff Johnson, President of the International Association of Black Actuaries (IABA). Mr. Johnson spoke about IABA activities during the 2009 CAS Annual Business Session.*



*Incoming CAS President Roger Hayne (left) recognizes outgoing CAS President John Kollar for his service to the association.*



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## IN MEMORIAM

Thomas J. Kozik  
(FCAS 1984) 1949-2009

Daniel McNamara  
(FCAS 1962) 1928-2010

Robert L. Miller  
(FCAS 1994) 1964-2009

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