The Actuarial Review

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Ms. Zora Wing Fong Law
Fellow, Institute and Faculty of Actuaries (U.K.)
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Mr. David Third
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The 2012 CLRS is scheduled for September 6-7, 2012, at the Sheraton Denver Downtown Hotel in Denver, Colorado. Contact Mike Boa at the CAS Office (mboa@casact.org or 703-562-1724) for details on sponsorship opportunities.

Looking Backward

"The future ain't what it used to be."

—Yogi Berra

Several years ago, I was browsing through some old magazines at a relative's house and came across a 1976 article from a group of futurists. Each contributor was giving their view of what the world would look like in the future. By the time I read the article, that "future" was at least partly in the past.[1]

I obtained two valuable lessons from that retrospective look at the futurists' predictions. The first was that being a futurist is a difficult profession, as many (most?) of the predictions made in the article were very wrong.[2] There was a clear tendency to view the world through the filter of what the futurist had previously experienced. There was no recognizable ability to anticipate how the world would change. For example, one of the authors appeared to believe that by around the year 2000 "we will be living in the post-petroleum era."

The second lesson came from what some of the futurists got right. A few, not all, made note of major new developments that were happening in their time. The authors' noted correctly that these developments were going to have a major impact on the future—they weren't necessarily correct on what that impact might be, but they noted that it was probably going to be major and was worth paying attention to. For example, Isaac Asimov predicted that we will live in a "world or global village, tied together electronically, with every citizen able to communicate instantly with each other," although he didn't seem to anticipate the growth of the "virtual office."[3]

What does this have to do with the CAS? I believe it provides a useful lesson in our planning for the future. We need to identify and focus on what is changing in our world and be ready to adjust to those influences. We also need to acknowledge that the world is always changing and that we need to change or adapt along with it, even if we don't know exactly how it will change. This does not mean change for change's sake, "throwing out the baby with the bath water," but it does mean that standing still is not an option.

So what are some of the changes in our world that will affect our future in a significant but yet unknowable way? The following is a humble attempt to identify some.

1. **Tremendous increase in the volume of data captured.** When I first started my career, computer storage was expensive. There was an active attempt to reduce electronic file sizes and nearly all the data captured was captured manually. In contrast, memory is now cheap and more and more data is captured electronically. This expansion is opening up new avenues for analysis that were previously inconceivable. What kind of analyses might this lead to? For what uses?
2. **Tremendous increase in the accessibility of data.** This is a function of both the construction of databases that allow such access, and new hardware and software to bring that data to your fingertips. This includes the ability to access the data almost anywhere in the world. How will this change the profession? Will the impact be bigger for outsourcing or for the virtual office?
3. **GLMs, data mining, predictive modeling.** These are the new tools that continue to evolve and allow us to leverage the items above. Where will this lead us? What lessons are there from the recent financial crisis, with the heavy usage of data-intensive modeling by hedge funds and the like?

On a related note (linking the first three observations), given that much of the data of property/casualty companies is proprietary, will these models significantly split the market into two categories—those with the data and those without? Will the data needed to run these models become more proprietary or less proprietary in the future, and how will this affect the market?

4. **The rise of "analytics."** You don't have to be an actuary to apply the new tools mentioned above. In fact, the training of some folks may be more tailored toward the use of these tools than the actuarial profession (e.g., those with advanced degrees in statistics). My personal belief is that understanding the data and the environment where data are used still counts

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[1] For those interested, the article was "Five Noted Thinkers Explore the Future" from the July 1976 issue of *National Geographic*. A similar example of the perils of being a futurist is also evident from the book *Looking Backward* by Edward Bellamy in 1988, from whom the title of this article was taken.

[2] Nearly all would be viewed as wrong, except for the open-endedness of some of the predictions. Those predictions wisely didn't give a firm date for their future, leaving open the possibility that they might eventually be right.

[3] To his credit, Isaac Asimov also said, "None of the conclusions we arrive at [in their attempt at predicting the future] may have any meaning whatsoever 25 years from now."

A Bold Suggestion for Examination Syllabus

Dear Editor:

I passed my exams in nine sittings spanning four and a half years, so my suggestions here are not motivated by whining about how unfair the present system is. Rather, it is motivated by what I wish I would have learnt while getting my FCAS. Many articles have already discussed some altering of the syllabus. My proposal is to rip up the current syllabus, and instead require all actuaries to get the following:

1. CPCU
2. CFA
3. MBA
4. One 4-hour exam covering basic actuarial techniques

This would get rid of the useless math-only prelims and obscure actuarial techniques rarely used in practice. It would make actuaries more able to convey their methodologies, assumptions, and, most importantly, the value they add to the people signing their paychecks (whether they be clients or board-members). And it would increase the respect given to the designation.

I'm less sure how to differentiate between ACAS and FCAS. Maybe an FCAS requires the above, plus an experience requirement, plus an original contribution to the literature.

—*Michael Solomon, FCAS, MAAA, ARM*

CAS Election 2012—An ACAS Volunteer Weighs In

Dear Editor:

I was admitted to the CAS in 1999. Like many actuaries before and since, I began my volunteer activities with the Society almost immediately upon gaining membership. My current volunteer activities as of September 19, 2011, were serving as a member of the Economic Capital Model Working Party and—for the second year—chairing the Joint CAS/SOA Program Committee for the Enterprise Risk Management Symposium, in addition to serving on the ERM Task Force of the Actuarial Standards Board (ASB). (Those interested in the full history of my volunteer activities within the CAS are directed to my entry in the on-line membership database. It isn't unusual or extraordinary. Lots of us volunteer our time to the CAS.)

The results of the most recent CAS election have caused me to re-evaluate my volunteer commitments, in particular, the result on the proposed amendments to the CAS Constitution and Bylaws that would allow me and my fellow career Associates the right to have a say in how our beloved Society is run—in other words, to be treated as full members. I have no desire to continue to dedicate my time and efforts to an organization whose membership clearly does not value contributions from those of us who decided to forgo passing a few exams on our paths to successful actuarial careers. Furthermore, it irks me that I (or my employer) am expected to pay the same dues as those who are allowed to vote.

As such, on September 20, 2011, I formally resigned from the Economic Capital Model Working Party, and it is highly unlikely that I will serve on any CAS committees until I am at least allowed to vote in CAS elections. I will continue to be an active volunteer, but will focus my efforts with the organizations that value me as a full member—the Academy, the ASB, and the Joint Risk Management Society (strange that I can vote in JRMS elections, but not CAS elections). To that end, I have already offered my services to one AAA committee, in addition to continuing to serve on the ASB task force mentioned above. I will serve out my term as chair of the Joint CAS/SOA Program Committee for the Enterprise Risk Management Symposium, especially since it is a joint effort of the CAS and JRMS (among others) and at least one of the sponsoring organizations of which I am a member does not discriminate against those of us whose personal lives and career success got in the way of completing the Fellowship exams.

It was my decision to become a career Associate, and when that decision was made I understood that it meant that I would be denied the right to vote. I made this decision with full knowledge and take full responsibility for it. I will continue to cherish membership in the Society and benefit from it, but until I and my fellow career Associates are given the right to vote on the issues facing the Society I will no longer volunteer my time and efforts on its behalf. I encourage all career Associates to make the same, or similar, decisions regarding their volunteer activities.

—*Kevin M. Madigan, Ph.D., ACAS, MAAA, ARIAS-U.S. Certified Arbitrator*

Excusez Moi

Dear Editor:

I have two concerns with Gary Venter's "adds" ("It's a Puzzlement: The First Odd Number," *AR*, May 2011).

The French word for two is "deux," not "du," which is the familiar form of "vous" (you).

Five is "cinq," which comes before deux alphabetically.

101 is "cent un" comes before cinq.

103 is "cent trois."

107 is "cent sept."

109 is "cent neuf."

151 is "cent cinquante et un."

I don't know if I can go back further.

Would CDI (401) be the first alphabetic prime number in Roman numerals? Or is it CCCCI?

—*Richard Kollmar, ACAS*

Academic Position Available at Illinois State University

The Mathematics Department at Illinois State University is seeking applications for a tenure-track faculty position at the assistant professor level in actuarial science, beginning August 16, 2012. Applicants should have Ph.D. in mathematics, actuarial science, statistics, or an actuarial-science-related area. Actuarial credentials from the Casualty Actuarial Society or the Society of Actuaries are desirable, but not required. Pursuit of such a credential is expected. The person selected will be expected to work with the Actuarial Program (Center of Actuarial Excellence) in the administration and service areas, teach courses, pursue research and professional involvement in actuarial science, and otherwise contribute to the life of the department. Refereed research publications, quality teaching, and professional service are required for tenure. Send an application, vitae, transcripts, and three letters of recommendation to: ISU: Actuarial Science Position, Ms. Dianne Brewer, Department of Mathematics, Campus Box 4520, Normal, IL 61790-4520, dianne@ilstu.edu. For additional information visit www.IllinoisState.edu/actuary/. Deadline is December 20, 2011. AA/EO Employer.

From the President, From page 3

for a lot in the business world, and that actuaries need to maintain their current advantage in this area. How will this competitive pressure change the actuarial profession?

5. **Cloud computing.** This further reduces the infrastructure requirements for data analysis. But what will the impact be on certain operational risks? Will it increase them or decrease them?
6. **Social networking.** This development is starting to have profound impacts on certain segments of society, including an increased ability of popular revolts to overthrow authoritarian regimes, revolutionizing the possibilities for disaster relief, and introducing new levers to the enhancement or destruction of franchise value.[4] How will it change the business model for our employers? What new risks will it add? How might it change the CAS?
7. **Interconnectedness of the world economy.** This interconnectedness has been described as a boon to the prospects of many national economies but also as an increase in risk concentration and volatility, increasing the future risk of a worldwide depression while it increases overall world prosperity.
8. **Climate change and fossil fuel scarcity concerns.** I read a book that said that the biggest problem wasn't possible climate change but the coming scarcity of fossil fuels.[5] How will these concerns change the risk profiles we face? How will they change future business models?

So what kind of "Brave New World" will these influences lead us to? As stated earlier, I've learned that predicting the answer to this is dangerous ground, but we need to be ready to move quickly with the flow and continually adjust how we do things. I have no ready answers, but hopefully I've started raising some valuable questions.

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Now on to a different topic.

This article is due to be published in November, a time when many of us think of giving and thanksgiving. At this time, I would like to encourage CAS members from North America to think of the contributions provided by the Actuarial Foundations in the U.S. and Canada. These two organizations help spread the influence of the actuarial profession in those countries and help us to better those societies. Their works include educational material to teach financial literacy to young people, consumer education materials regarding financial security, and the sponsorship of actuarial research projects to directly enhance the profession. Please consider these organizations when deciding where to direct your charitable contributions, both for this year and for future years. Thank you.

Editors Note: Visit www.afc-fac.ca and www.theactuarialfoundation.org for more information.

[4] The revolutions in North Africa were partly made possible by the use of social networks. Regarding disaster relief, recovery efforts after tornados in Springfield, Massachusetts were made easier by the use of such networks to better match post-disaster needs with volunteer efforts and supplies. Regarding franchise value, some firms are monitoring these networks to gauge consumer reactions to their products and to head off bad publicity.

[5] *Plows, Plagues, and Petroleum: How Humans Took Control of Climate* by William F. Ruddiman

The Fresh New Face of BeAnActuary.org!

The CAS and SOA Joint Committees on Career Encouragement and Actuarial Diversity are pleased to announce the launch of the new BeAnActuary.org Web Site. The committee members and staff worked with an outside consultant to bring a fresh new look and approach to the Web site, which was last redesigned in 2003. The site was originally launched in 1999.

Be An Actuary.org has been enhanced with many new features including:

- An interactive home page feature called "How Actuaries See the World."
- The use of video, including a video featured right on the home page.
- An elegant, clean, modern, and attractive design.
- User-friendly navigation, with drop-down menus for quick access to important content.
- Updated tool-kits for both educators and actuaries giving presentations about the career.
- Links to new BeAnActuary social media pages.

These features are in addition to the wealth of information already available on the site such as an overview of the examination process and guidance for finding an entry-level actuarial job. During the redesign process, all of the content was subjected to a comprehensive review—every Web page was examined and updated or completely rewritten as needed.

Please visit and explore the new Web site at www.BeAnActuary.org, and forward the address to anyone you know who may be interested in an actuarial career. Comments or questions on the site may be sent to webmaster@BeAnActuary.org. AR

Kailan Shang Wins CAS Emerging Issues Prize

Author Kailan Shang has been named the 2011 Emerging Issues Prize winner for his paper "Loss Simulation Model Testing and Enhancement." Mr. Shang received a prize of $5,000 and was awarded a plaque and prize money at the 2011 Casualty Loss Reserve Seminar held in Las Vegas September 15-16, 2011. Mr. Shang's paper is posted in the CAS *E-Forum* on the CAS Web Site (http://www.casact.org/pubs/forum/11sumforum/Shang.pdf).

In 2010, the CAS Dynamic Risk Modeling Committee and the Committee on Reserves issued a call for papers titled "Testing Loss Reserving Methods, Models and Data Using the Loss Simulation Model." In this call, participants worked with the Loss Simulation Model to develop enhancements to the model, perform additional testing, and apply the model to test alternative loss reserving methods and models. Authors were asked to describe the issue to be addressed (e.g., which of several loss reserving methods or models works best in a given loss reserving situation) and their approach to using the Loss Simulation Model, as well as any model enhancements or testing performed on the model. The Loss Simulation Model and manual are available on the CAS Loss Simulation Model Working Party Web Site (http://www.casact.org/research/lsmwp).

The Emerging Issues Prize is awarded to the best call paper to come out of a new, but not necessarily repeating, call paper program. This Emerging Issues Prize is not necessarily an annual prize and can be sponsored by a different committee each time. AR

Contrasting Dreams of CAS Founders

By Walter Wright

The November 1986 issue of the AR reported on Fred Kilbourne's participation at an SOA meeting, in which he discussed contrasting dreams for the CAS by its first two presidents. This is especially interesting as we approach the 100th Anniversary of the CAS in 2014 and as the U.S. Congress struggles with budget issues.

Fred [Kilbourne] reported that Isaac M. Rubinow, the founder and first president of the CAS, had been born in czarist Russia, had come to New York City as a teenager, and had earned an M.D. degree from NYU. He was a passionate advocate of social insurance. In 1915, Dr. Rubinow wrote, "I was gratified to read the new draft of our Constitution in which the field was enlarged to cover both casualty and social insurance. Throughout the country a powerful program for sickness insurance, maternity insurance, old age pensions, unemployment insurance and mothers' pensions is rising." Kilbourne stated it would be unfair and inaccurate to characterize Rubinow as a conservative.

Craig Not Optimistic

James D. Craig, the second president, was with the Metropolitan Life Insurance Company for 44 years. He was a Fellow both the Actuarial Society of America and the American Institute of Actuaries. He was considered an authority on social insurance, as well as on pensions and group health. Kilbourne quoted Craig in a 1917 statement about social insurance: "Reform administrations do not last long for the simple reason that the campaign promises and expectations created cannot be fulfilled. If social insurance is coming, let us not be too optimistic in our expectations." Kilbourne said it would be unfair and inaccurate to characterize Craig as a liberal.

"Social Insurance Inevitable"

Rubinow, in 1916, said, "This country stands committed to a policy of social insurance…one must be blind to the whole tone of American life to fail to see what is coming…a certain encroachment of social upon private insurance is possible—but not inevitable."

Craig was less an opponent of social insurance than he was an actuary with professional concern that any insurance scheme be soundly financed. In 1917 he said, "Let us not advocate a system under which, in a year or two, state funds…or other carriers will be in financial difficulties…no greater catastrophe could happen."

Kilbourne pointed out that some of Rubinow's dreams for the CAS were not realized. His list of social insurance lines has been fairly well split up between the life actuaries and the politicians, leaving little for the casualty actuaries. The first 30 volumes of the *Proceedings* had 34 papers on social insurance, the next 30 volumes had four, and the dozen since then just one.

Would Applaud Current Concepts

However, although casualty actuaries have not been involved, Kilbourne said Rubinow clearly would applaud the concepts of social insurance that have been implemented over the past two generations: Social Security, unemployment compensation, Medicare, Aid to Families with Dependent Children. But Kilbourne has little doubt that Rubinow would join Craig in deploring the unsound financing that has affected most of our social security programs.

Finally, Kilbourne noted the conflict that must have accompanied the contrasting dreams among the founders of the CAS. Dr. Rubinow was not an actuary, he was a statistician. He probably was not especially happy at the tenth anniversary dinner, since it was held at the National Republican Club, and the organization he founded, the Casualty Actuarial and Statistical Society of America, had been renamed the Casualty Actuarial Society. Rubinow's remarks at that dinner ended with the sentence: "May I…conclude with a plea for the preservation of statistics as such, if not in the name, at least in the spirit of the Casualty Actuarial Society?"

[Fred] Kilbourne thinks Rubinow would probably have demurred at Craig's terse characterization of a statistician in an earlier presidential address: "one skilled in the science of counting."

CAS Recognized as CERA Award Signatory

ZAGREB—With unanimous support from the CERA Treaty Board, the CAS has been recognized as an award signatory and may begin to award the new Chartered Enterprise Risk Analyst (CERA) credential. The Treaty Board met on October 1 in conjunction with the IAA Council and Committee meetings in Zagreb, Croatia.

The CAS requirements to qualify for the CERA designation include CAS Associateship requirements plus credit for CAS Exams 7 and 9, or attainment of the CAS Fellowship designation, plus participation in a rigorous three-day seminar and successful completion of the U.K. ST-9 Enterprise Risk Management Specialist Technical Exam (ST-9 exam).

The three-day seminar will cover the ERM learning objectives tested in the ST-9 exam, and is intended to prepare candidates for successful completion of the exam. The CAS expects to offer the seminar for the first time in March 2012, in advance of the April 2012 ST-9 exam sitting.

In addition to the exam/seminar pathway, the CAS will continue to develop a second path, called the Experienced Practitioners Pathway (EPP), that will allow the CAS to award the CERA designation to existing members who are leading practitioners and who are considered, by virtue of their experience, to have demonstrated a level of knowledge and understanding of ERM comparable to that achieved by other designees. The CAS is seeking approval of this a program now that it has been granted CERA award signatory status.

Additional details on the new ERM Seminar and the EPP program will be announced as soon as they are available.

The CAS's recognition to award the CERA designation and the eventual credentialing of CAS members will help strengthen the standing of qualified CAS members in the field of risk management.

More information about the CERA credential can be found on the global CERA Web Site (www.ceraglobal.org/).

Michael Steel Appointed To CAS Board

ARLINGTON, Va.—The Casualty Actuarial Society (CAS) announced the appointment of Michael Steel, executive vice president and chief risk officer of AXIS Capital Holdings Limited, to its Board of Directors for a one-year term beginning in November 2011.

Ralph S. Blanchard III, current CAS president and incoming chair of the CAS Board of Directors said, "Michael Steel's extensive experience in risk and capital management and focus on determining and implementing enterprise risk management concepts, methods, and tools for a global firm further broadens the expertise of the CAS Board. The perspective provided by non-actuaries on issues that come before the Board adds great value to our deliberations."

Steel joined AXIS Capital in 2008 following 12 years at Benfield. He had been a director with Benfield Ltd. and Benfield Advisory where he was head of the Capital Market Group, chairman of the ReMetrics team, and head of Structured Products.

Michael Steel

Previously, Steel had been a leading member of Instrat, Sedgwick Group's Analytics and Structured Products team. He holds a BSc in statistics and mathematics from Brunel University.

AXIS Capital, the Bermuda-based holding company of the AXIS group of companies, provides specialty insurance and treaty reinsurance on a worldwide basis through operating subsidiaries and branch networks based in Bermuda, the U.S., Canada, the United Kingdom, Ireland, Switzerland, Australia, and Singapore.

GROVER EDIE

The Human Element

At a CPCU meeting in 1990, I attended a session on the state of the insurance industry. One of the speakers suggested that the insurance underwriting cycle was due to a faulty feedback loop. Information about the true state of insurance costs was slow, and the corrections that were made were too much and too late—like an out-of-control missile or thermostat. Since I have an undergraduate degree in physics, that description really clicked with me.

You can liken it to a video game where the player reacts too slowly and overcorrects. It reminds me of watching a youngster drive one of those cars at an amusement park that has a rail in the center of the course to keep you from getting too far off course. The driver cranks the wheel too far one way, only to be stopped by the center rail, and then cranks it too far the other way. The car travels in a zigzag along the otherwise smooth course. So I wonder: is our underwriting cycle due to a faulty information feedback loop, or possibly due to the actions of the persons in control—its "drivers?"

Our industry experiences years of improved operating results, followed by years of deterioration.

One might conclude that insurance cycles are caused by reacting too late to changes in the basic activities of insurance (underwriting, claims, markets, investments, and so on) or that the correction is too great, causing an over-reaction and over-correction. So let's think about that a bit and see what has happened to help our feedback loop (i.e., our supply of information) and determine if there have been changes in the underwriting cycle that would correspond with changes in our information—how fast we get it and how fast we can react to it.

I have watched the industry change from mainframe computers with reel-to-reel tapes that spit out green bar paper, to personal computing devices that are many times faster, hold much more data, and use software that is both more powerful and more user-friendly. Along with that, the amount of data we are now able to collect is enormous compared to what was collected 20 or 30 years ago. Coupled with our computing power, we are able to perform analysis at such speeds, at such levels, like never before.

There are some things that are new on the scene—regulations that affect how we can price and market our products, laws and court decisions that revise our contract language and the nature of what we insure, general economic woes, and so on. But we have dealt with legal changes before.

Our industry is not the only one to be plagued by performance cycles. You may recall the savings and loan debacle of the 1980s, Long Term Capital Management's failure in the 1990s, Enron, WorldCom, Tyco, and others that failed in 2001. More recent financial woes include the mortgage-backed securities debacle that we are still cleaning up, the Lehman Brothers bankruptcy of September 2008, amongst others. The investment community also had access to the improvements in technology we have seen, and they also have seen market cycles as well.

We now have much faster analytic processing, far more data, and much better and faster communications and data transfer and storage mechanisms. In other words, there are many things that speed up the feedback loop, and would make that feedback more accurate. If the speed and accuracy of the feedback loop is the only thing causing market cycles, either in insurance or investing, we should see much shorter cycles with shorter peaks and shallower valleys. But we do not.

So what is the cause of market cycles? I have a theory: perhaps it is not the information but the people and their responses to stimulus that causes the cycles. The human element is the one thing that has not changed over recent cycles.

Consider mortgage-backed securities. The players didn't want to be the first one off the gravy train, even though they knew that the whole financial party was headed for a wreck. It was a big game of chicken, and I think the players got so enamored with where they were at the time, they forgot to look at where they were headed. The present value of a near certain return today looks a whole lot more attractive than the present value of a larger but uncertain gain years from now.

But insurance is different; or is it? You decide. Are property insurance markets softer after a year or two of diminished weather losses?

When an insurance company's results are bad, underwriters might tighten up their selection and limit discretionary credits—when times are good, they might be likely to do the opposite. Claims might be more carefully looked at during times of operating losses, a bit more lax when the company is making money. The actuary raises rates based on experience, but might not be able to incorporate these two changes in the activities at the underwriters' desk and claims adjusters' levels. Even with insurance programs that have minimal underwriting, claims handling will have an impact. And so maybe, just maybe, boom and bust cycles are simply due to human nature.

Anyway, that's my theory.

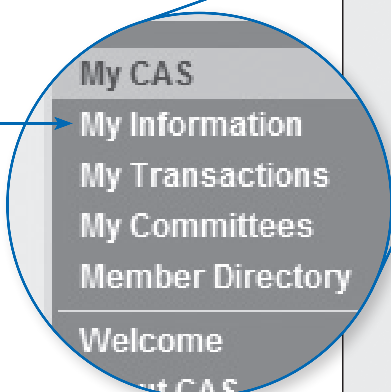
Certify Compliance with the CAS Continuing Education Policy

Members Can Use the CAS Web Site to Record CE Activity

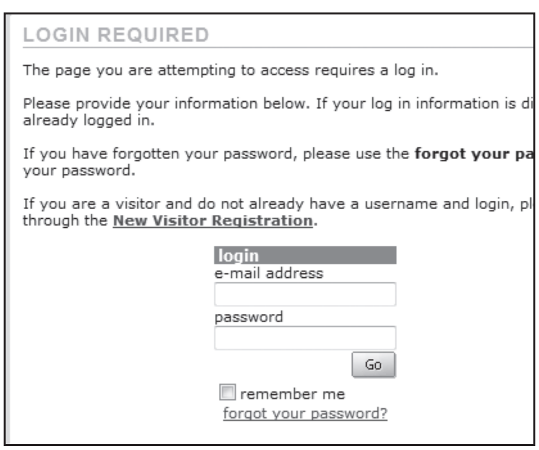
The CAS Continuing Education Policy (CE) will first apply to Actuarial Services rendered on or after January 1, 2012. Fellows and Associates will need to certify their compliance with the policy's CE requirements as of December 31, 2011, in order to provide Actuarial Services during 2012.

CAS members may now certify their compliance with the policy in just a few easy steps

1. Go to the CAS Web Site home page (www.casact.org) and click My Information, which is the second menu item from the top in the left-hand navigation menu.

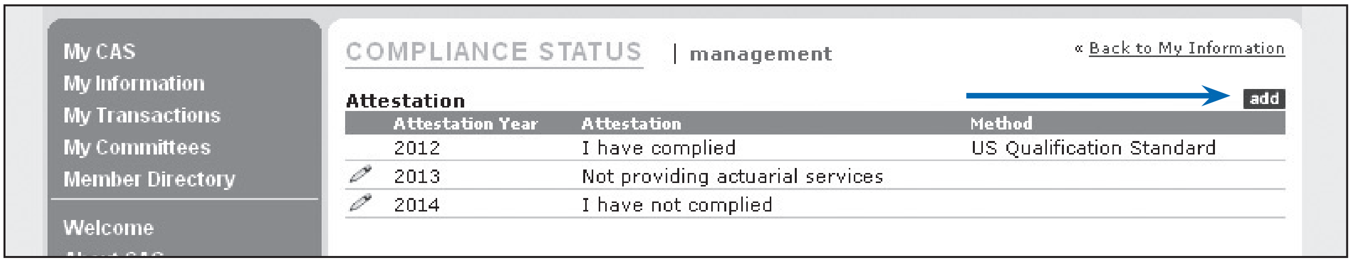


2. Log in (if you are already logged in you will jump to the next step).



3. On the next page, beside the heading CE Compliance Attestation (midway down the page), click Edit.

4. On the next page, click the small Add button at the top right.



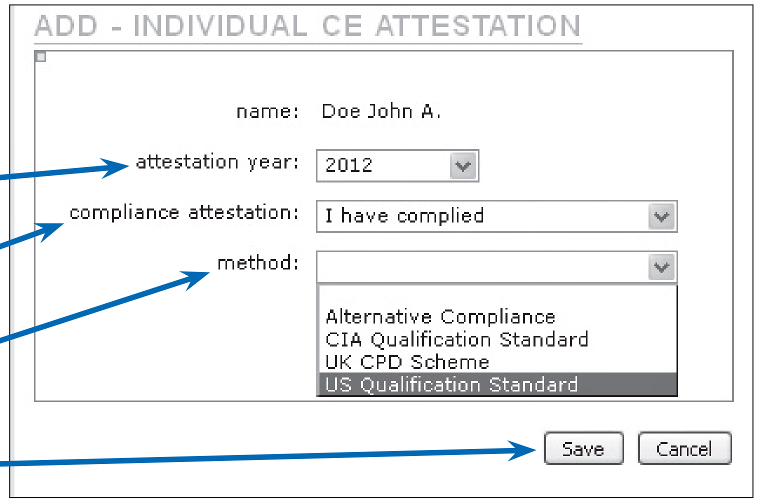
5. In the new pop-up window, you will see three drop down menus. Select:

   a. The year for which you are certifying (2012)

   b. Whether or not you have complied with the Policy, or if you are not providing actuarial services.

   c. Your method of compliance.

6. Click Save, and you are finished.



Note that since members can certify compliance for up to two years out, you may certify for future years by completing the same process for 2013.

CAS members should certify compliance with the CE Policy by December 31, 2011, and maintain a log of their CE activity to document that they have met the continuing education requirements. The CAS plans to randomly audit 1% of the continuing education logs for members who have attested their compliance with the Policy. In addition, the CAS Board of Directors agreed that 100% of the Board and Executive Council members (excluding appointed directors and the Executive Director) will be subject to the annual audit regarding compliance with the CAS CE Policy.

CAS members who do not provide Actuarial Services are exempt from meeting the continuing education requirement of the CAS Continuing Education Policy. However, those members are still required to attest to their compliance by indicating that they are "Not providing actuarial services," following the same steps described above.

Beginning in January 2012, the general public will be able to search a limited portion of the CAS online membership directory for information on member compliance with the CE requirements. The limited directory will display member names, membership designations, and the current year's compliance status (compliant, not compliant, not providing actuarial services).

Members are encouraged to review the complete CE Policy for all of the details on the CE requirements. The policy, a list of frequently asked questions and responses, audit procedures, and links to other resources are available on the CAS Web Site.

If you have any questions, please contact David Core, CAS Director of Professional Education and Research (dcore@casact.org).

Earn CE Credits By 12/31 Without Leaving Your Office

If you are a few units shy of the required units of CE credit that you must have by December 31, 2011, to comply with the CAS Continuing Education Policy, there are solutions to this dilemma. Here are two to consider:

1. Attend CAS Webinars being conducted in November and December
2. Purchase access to hundreds of recordings of sessions of past CAS meetings, seminars, and Webinars.

These Webinars and recordings are usually 90 minutes long and may qualify for up to 1.8 units of CE credit each.

Go to http://www.casact.org/education/webinar/ for upcoming Webinars and http://www.softconference.com/cas/ for all session recordings available for purchase, and certify compliance by the end of the year.

Results of the Constitution and Bylaws Amendments Vote

Proposals to Expand Associates' Participation in CAS Governance Fail

ARLINGTON, Va.—Proposals that would allow Associates of the Casualty Actuarial Society to vote in CAS elections and serve as directors failed to garner the necessary support of the Fellows, and were defeated in balloting conducted in conjunction with the 2011 CAS elections.

The CAS Constitution and Bylaws may be amended by an affirmative vote of 10 percent of the Fellows or two-thirds of the Fellows voting, whichever is greater. Voting results on the two initiatives related to the rights of Associates were as follows:

Do you approve the Constitution and Bylaws changes allowing Associates to vote (i.e., to become Voting Members of the CAS) five years after they are recognized as Associates, if they have not yet attained Fellowship?

	Ballots	Percentage
Yes	523	39.2%
No	812	60.8%

On the condition that the first question passes, do you approve the Constitution and Bylaws changes making all Voting Members eligible to be elected members of the Board?

	Ballots	Percentage
Yes	456	35.9%
No	816	64.2%

While the Constitution and Bylaws changes related to Associates failed, two other proposals were approved.

One set of changes was designed to allow the CAS to participate in the joint disciplinary process that was proposed by the Council of U.S. Presidents (CUSP), which is comprised of the Presidents and Presidents-Elect of the U.S.-based actuarial organizations. CUSP developed a proposal for joint discipline intended to increase the efficiency of the discipline process and create greater consistency among discipline outcomes.

The amendments, which were approved with 81 percent of the Fellows voting in favor, enable the CAS Board of Directors to enter into an agreement for joint discipline with other participating organizations, while retaining control of the discipline of CAS members. As articulated in the changes to the CAS Constitution and Bylaws, the CAS Board, if approved by a two-thirds majority vote of the CAS Board members voting, would be granted the authority to enter into a joint disciplinary agreement, provided that:

a. No CAS member will be disciplined unless a majority of the panel judging that CAS member is composed of CAS members and a majority of those CAS members concur with the discipline.

b. The authority to impose penalties of expulsion or suspension for more than two years for any CAS member will remain with the CAS.

Finally, the Fellows approved a proposal to eliminate antiquated language from the Constitution and Bylaws related to Affiliate members, with 91 percent voting in favor of the amendment.

A total of 1,375 Fellows voted (35.5%), as compared to 1,166 Fellows last year (31.9%).

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 2011. This brings the total contribution by D.W. Simpson to the Trust to $150,000 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.

Teufel to Become CAS President; Josephson Voted President-Elect

ARLINGTON, Va.—Patricia A. Teufel, who was voted in as president-elect in 2010, will become CAS president at the close of the 2011 CAS Annual Meeting. Gary Josephson has been elected CAS president-elect.

Balloting for the 2011 CAS election closed on August 31, 2011. A total of 1,375 Fellows voted (35.5%), as compared to 1,166 Fellows last year (31.9%). CAS Fellows elected Shawna S. Ackerman, Steven D. Armstrong, Annette J. Goodreau, and James R. Merz to the CAS Board of Directors. Immediate Past President Ralph Blanchard will chair the CAS Board of Directors. The following members were elected or reelected by the CAS Board to serve as vice presidents:

- Leslie R. Marlo, Vice President-Administration
- Virginia R. Prevosto, Vice President-Admissions
- Barry A. Franklin, Vice President-ERM
- Kris D. DeFrain, Vice President-International
- Nancy A. Braithwaite, Vice President-Marketing and Communications
- Chester John Szczepanski, Vice President-Professional Education
- Alice M. Underwood, Vice President-Research and Development

These Fellows will assume their positions at the close of the 2011 Annual Meeting in Chicago.

According to the election procedures approved by the Board, all vote counts are released to the membership. These follow in the table.

Patricia A. Teufel

Gary Josephson

	Votes
President-Elect	
Gary Josephson	1,064
Director	
Steven D. Armstrong	646
Shawna S. Ackerman	609
Annette J. Goodreau	605
James R. Merz	605
Deborah M. Rosenberg	523
Kevin S. Burke	498
Nasser Hadidi	439
Richard D. Easton	382

ASTIN 2011 Delivers Powerful Content on Research and Ethics

By Louise Francis, Vice President-Research & Development

In June 2011, I attended the 2011 ASTIN (Actuarial Studies in Non-Life insurance) Colloquium in Madrid, Spain. An added bonus was that the AFIR (Actuaries in Finance) Colloquium was held jointly with the ASTIN Colloquium. I learned about a wide range of topics, including reserving, reserve variability, credibility, probability distribution applications, simulation modeling, and microinsurance. Many non-life delegates found some of the AFIR sessions to be very informative. ERM topics, such as Dave Ingram's plenary session, "Choices and Choosing, ERM and Rational Adaptability," were also covered in the AFIR portion of the colloquium.

All in all it was a greatly informative meeting. Following is a sampling of papers and presentations that I found quite interesting.

Pitselic and Piraeus presented a hierarchical credibility model for quantiles. Their method allows for different relationships at different percentiles of a distribution of the target variable.

Maria Martinez Miranda co-authored two papers on the double chain ladder. The double chain ladder utilizes two triangles, a paid and a count. Building on double chain ladder research, Martinez Miranda, Neilson, and Verrall presented a paper on adding underwriting year trend estimate from the incurred triangle.

Michael Fackler's presentation, "The Financial Crisis: Risk Transfer, Insurance Layers and (no) Reinsurance Culture," suggests that those pricing the mortgage derivitives that drove the financial crisis could have learned useful lessons from the pricing of nonproportional reinsurance. Some commonalities between the two include risk transfer pooling, layering, and data sparseness. In addition, the risks can be difficult to assess. Another commonality is risk transfer chains, along with the risk posed if someone in the chain defaults.

Savelli and Clementi presented a reserve variability model based on the collective risk model, which provides an alternative to the Mack and Bootstrap methods. The authors maintain that the technique is particularly relevant when the Fisher-Lange method, which is popular in Italy, is used for reserving.

Glen Meyers and Peng Shi's presentation, "The Retrospective Testing of Stochastic Loss Reserve Models," uses data from Schedule P, which was generously provided by the National Association Insurance Commissioners (NAIC). This date is available on the CAS Web Site (http://www.casact.org/research/index.cfm?fa=loss_reserves_data).

David Wilke presented a plenary session on "Real World Economic Scenario Generators." Wilke is well-known for his asset return and economic scenario models, which rely on time series models fit to empirical asset return data. This is a different approach than is used in many investment models.

In the Enterprise Risk Management plenary session, "Choices and Choosing: Plural Rationalities and ERM," David Ingram discussed ERM within the context of differing attitudes toward risk.

Lastly, I'll touch on ethics, a long overlooked topic. In the Professionalism Plenary session, "Finance: To be Ethical or Not To Be," Jean Berthon asked if there is a need for ethics in finance and whether "ethics" and "finance" are contradictory terms. Berthon believes that greed has become one of the five pillars of finance today (the others are globalization, diversification, disintermediation, and deregulation). According to Berthon, these factors are responsible for the current global financial crisis. Further, he believes that now there is a mistrust of financial institutions and capitalism.

To remedy this mistrust, Berthon says we need ethics in finance. He characterizes ethics as an "imperious necessity" and crucial for a well-ordered financial system. This subject is very important to me personally and I highly recommend downloading Berthon's overheads from the ASTIN Web Site.

To view all the program's overheads and papers, visit http://www.actuaries.org/ASTIN/Colloquia/Madrid/programme.htm.

Next year ASTIN and AFIR will again have their colloquia together. The location will be Mexico City (in October), which may be a more accessible site for CAS members than the location of past colloquia. Please consider attending, as the ASTIN colloquia provides one of the few opportunities to catch up on the research being conducted outside of the CAS while meeting actuaries from all over the world.

MARTY ADLER

Connecting Buddha, Jesus, and Solomon

Richard Sherman acquired a deep interest in religious philosophy in ninth grade, when his advanced placement group studied Will Durant's *The Story of Philosophy*. Although raised as a Christian, Rick became an atheist and remained so through graduate school. He returned to the faith of his upbringing around the time he began taking the actuarial exams, but he has always been fascinated by and very respectful of other religions.

Several years ago, friends asked Rick his opinion about claims that the reason for similarities between many of the sayings of Buddha and Jesus was that Jesus journeyed to India when he was a young man. In addition, the Bible makes no reference to any events in Jesus' life between the ages of 12 and 30. Rick's initial reaction was that this was much less likely to have been the case than that both Buddha (circa 525 BCE) and Jesus (circa 30 CE) were influenced by Judaism, since most of these similarities also were present in the Hebrew Bible. Rick researched a broad range of historical and religious literature pertinent to the topic. He noted that the first colony of Jews to settle in India did so around the time Buddha was born.

Rick took an interest in the subject, obtained a copy of Buddha's proverbs from the Internet, and began studying it thoroughly. His interest in Buddhism was increased by the fact that he lives in a town of 20,000, where 3,000 are Buddhists. He knows many of them as neighbors and friends.

Rick was immediately struck by how many of Buddha's proverbs were very similar to those of Solomon (circa 950 BCE). He decided to explore the possible influence of Judaism by completing a thorough comparison of both sets of proverbs, topically arranged according to Buddha's Four Noble Truths and each of the steps of his Eightfold Noble Path. It was a massive project, as it required a review of all 423 of Buddha's proverbs and all 600 of Solomon's.

The range of topics covered by Buddha's and Solomon's sayings spans a very broad spectrum of ethical and philosophical/spiritual issues. There is a concentration in themes many people typically associate with Buddhists, including tolerance, non-violence, peace, meditation, enlightenment, compassion, renunciation, ethics, the pervasive nature of suffering in life, and overcoming ignorance with wisdom. Among the areas of ethics covered are types of speech (e.g., gossip, divisive, conciliatory), the importance of saying a few well-chosen words versus excessive chatter, and abstaining from harming or defrauding others. Surprisingly, even though Buddhism is commonly linked with meditation, there are references to meditative practices in the Hebrew Bible that were virtually as advanced in Solomon's day, 400 years before Buddha lived, as they were when Buddha taught.

As a result of his research, Rick was able to find proverbs, or writings of Solomon, from the Bible that lined up with every one of these key facets of Buddhism. The following are examples of similar sayings:

"If your enemy is hungry, give him bread to eat; and if he is thirsty, give him water to drink."—Solomon

"Let a man overcome anger by love; let him overcome evil by good."—Buddha

"Love your enemies, do good to those who hate you, bless those who curse you, and pray for those who mistreat you."—Jesus

Rick decided to present his observations and conclusions in a book, *Buddha and Jesus: Could Solomon Be the Missing Link?* He developed the book with consideration that what Buddhists say about Buddhism is true and that what Christians say about Christianity is true. He compared and contrasted their assertions, trying always to be respectful and positive whenever possible. In the end, he concluded that each religion has related strengths and weaknesses.

The writing process began in January 2008 and took nearly three years to complete. Rick worked about two hours a day, totaling about 2,000 hours, but considered the work a labor of love. He thoroughly enjoyed being an investigative detective—the book has 1,000 footnotes and is heavily documented. After serving as an expert witness in a dozen major lawsuits, Rick developed a taste for the art of evaluating different types of evidence in support of a hypothesis. That same process was involved in writing this book, and in answering questions such as, "What traces of evidence exist that Solomon influenced Buddha?"

Nonactuarial Pursuits, page 16

NAP Needs Your Input!

Do you have, or know a CAS member who has, an interesting nonactuarial pursuit? If so, we'd like to hear from you. Send an e-mail to ar@casact.org and let us know what you do in your off-hours.

Mary D. Miller Receives Myers Award for Public Service

WASHINGTON , D.C.—The American Academy of Actuaries presented the 2011 Robert J. Myers Award for Public Service to Mary Downey Miller during a ceremony held October 24, 2011. Miller was selected in recognition of her extraordinary contributions to the public good through her 16 years of service as a property and casualty actuary with the Ohio Department of Insurance. She currently serves as the assistant director of the department's product regulation and actuarial services division.

"Having served with her in numerous capacities, I can personally attest to Mary's outstanding character, her commitment to the actuarial profession, and her passion for serving the public interest," said Academy President Mary Frances Miller, who presented the award to Miller.

In addition to her work at the Ohio Department of Insurance, Miller serves at the National Association of Insurance Commissioners (NAIC), where she is the vice chairperson of the NAIC's Casualty Actuarial and Statistical Task Force. She also is a member of the NAIC Health Actuarial Task Force, the Principle-Based Reserves Committee and Corporate Governance Subgroup. She represents Ohio on several other working groups.

Ms. Miller also has served the public interest through various volunteer positions at the American Academy of Actuaries, where she currently serves on its board of directors as a regular director. She was the vice president of the Academy's Casualty Practice Council from 2004 to 2006 and was the co-chairperson of the Financial Soundness and Risk Management Committee from 2002 to 2005.

Mary D. Miller (left) receives her award from Academy President Mary Francis Miller.

The annual award is named for Robert J. Myers, who helped structure and fund the nation's largest social insurance program in history during his tenure as the chief actuary of the Social Security Administration from 1947 to 1970. The award was established in 1994 to honor Mr. Myer's lifelong commitment to public service. The award is bestowed upon an actuary who has distinguished himself or herself through many years of service in the public sector.

Nonactuarial Pursuits, From page 15

Rick loves to solve problems and puzzles. Comparing and contrasting the 423 proverbs of Buddha with the 600 proverbs of Solomon presented a similar kind of challenge. Further adding to this challenge was the fact that Solomon's proverbs are not organized by topic but are random from one to the next. Coming up with unifying observations was a stretch goal. It was this same pursuit that was present when he endeavored to co-author the Berquist-Sherman paper, the subtitle of which is apt: "A Comprehensive, Systematic Approach." Getting his hands around the gist of three major religions, and doing so in a way where every comparison was arranged side-by-side was the mountain he labored to climb. It took a 350-page book to present and summarize his findings.

The book is published by CreateSpace, a publish-on-demand arm of Amazon that has released 6,000 books over the last few years. Now Rick faces the daunting task of marketing the book. He plans to hire a literary publicist savvy in new Internet marketing techniques, as well as to use traditional distribution methods. He will seek book reviews and interviews from a wide range of media sources. Rick's book is also available in a Kindle version via Amazon for purchase internationally.

Richard Sherman is President of Richard E. Sherman & Associates, Inc. His firm was recently acquired by Bickmore Risk Services of Sacramento.

Unusual Golf

Know the answer? Send your solution to ar@casact.org.

The company golf league is under way, so here's a problem that is not likely to actually come up. Suppose you can hit the ball so it always goes in exactly the direction you want, but on each stroke you can only hit one of two distances. So, on any stroke, you might fall short of the hole, drop into the hole, or drive past the hole. Suppose the tee-to-hole distances for nine holes are 300, 250, 200, 325, 275, 350, 225, 375, and 400 yards. What two distances would you want to be able to hit? For example, if you could hit 200 yards and 25 yards, you could score 29 for the nine holes. In this case, for the eighth hole you could score 3 by hitting the ball 200 yards twice, which overshoots the hole, and then hitting a 25-yard shot once to land in the hole.

But you can do better than this! Find a pair of distances that minimizes your total number of strokes for the nine holes.

Encoding Bits for Fun and Profit

This puzzle from Jon Evans involves a giant computer company that has a contract to encode large amounts of binary information on storage media. Statistically, each bit is equally likely to be 0 or 1, independent of the values of any other bits. However, the encoding machine produces a bad imprint for every bit in a sequence of 1s as long as, or longer than, a fixed length L. The client will pay \$1 for every terabit (trillion bits, or 10^{12} bits) imprinted, but the consequence of a single incorrect bit is so catastrophic that the client charges \$1 billion for each such bit.

The computer company can maintain its machine to achieve any value of L, as high as desired, but the cost rises exponentially with the value of L. Specifically, the maintenance cost per bit is $\$(2^{(L-117)})$. For example to set $L = 30$ would only cost $\$(2^{-87})$ per bit or only about \$0.000006 for a billion terabits, but to set $L = 1000$ would cost about $\$6 \times 10^{286}$ for a billion terabits.

The question was, is it possible for the computer company to produce a positive expected profit?

Johnny Chen shows that with $L = 76$, an expected profit is possible, and this is the only such L. His solution is for fixed L, let B be the total number of bits encoded, $e(B)$ be the random variable for the number of bits in error, and P be the random variable denoting profit or loss. Each bit produces a revenue of 10^{-12} and maintenance cost of $2^{(L-117)}$; each bit in error costs 10^9. We show that $\mathrm{E}[e(B)]$ is 0 when $B < L$ and $[B(L+1) - L(L-1)]*2^{(-(L+1))}$ otherwise. This is clear for $B < L$ since $\Pr(e(B) > 0) = 0$. For $B >= L$ we note that when $B = L$, there are only errors when all the bits are 1s; therefore $\mathrm{E}[e(L)] = L*2^{(-L)}$. Now consider $B = k > L$. The expected number of errors in the first $k - 1$ bits is $\mathrm{E}[e(k-1)]$. The last bit adds to the error count in only two cases:

(1) The last $L + 1$ bits are 0, 1, 1, ..., 1: adds L errors.

(2) The last $L + 1$ bits are 1, 1, 1, ..., 1: adds 1 error.

Both cases occur with probability $2^{(-(L+1))}$, so $\mathrm{E}[e(k)] = \mathrm{E}[e(k-1)] + L*2^{(-(L+1))} + 1*2^{(-(L+1))} = \mathrm{E}[e(k-1)] + (L+1)*2^{(-(L+1))}$. Since $\mathrm{E}[e(L)] = L*2^{(-L)}$ and $\mathrm{E}[e(k)] - \mathrm{E}[e(k-1)] = (L+1)*2^{(-(L+1))}$ for $k > L$, $\mathrm{E}[e(k)] = L*2^{(-L)} + (k-L)*(L+1)*2^{(-(L+1))}$; the formula above follows.

From this, we have $\mathrm{E}[P] = B * 10^{(-12)} - B * 2^{(L-117)} - 10^9 * 2^{(-(L+1))} * [B(L+1) - L(L-1)]$ if $B >= L$ and $\mathrm{E}[P] = B * 10^{(-12)} - B * 2^{(L-117)}$ otherwise. Assuming that we are only interested in B at least 10^{12}, the case where $B < L$ is not relevant (the maintenance cost is too high). For $L = 76$, $\mathrm{E}[P] > 0$ and grows linearly with B.

Bob Conger included a risk analysis in his solution. He observes that while $L = 76$ produces a tidy expected profit per billion terabits, it is an expected value that comes from significantly variable outcomes. He suggests that another way to make a profit is to set $L = 51$, and then only take jobs of length 50 or less. He adds, "Of course, the scale of this business is so small as to be ridiculous, but we can say that there is at least the conceptual profit in this game plan."'

David Atkinson, John Jansen, David Oakden, and David Uhland also submitted solutions.

Staffers Reach 15-Year CAS Milestone

By Elizabeth A. Smith, *AR* Managing Editor

This year three CAS employees will celebrate 15-year anniversaries with the organization. Sue Grossi, Mike Boa, and Tom Downey, who all started working for the CAS in 1996, have witnessed the expansion of the CAS alongside their own growth as professionals.

Sue Grossi began working at the CAS as a part-time receptionist in the afternoon, a job that enabled her to be available for her two teenage daughters. Dubbed "The Voice of the CAS" by former CAS Executive Director Tim Tinsley, Ms. Grossi would greet callers with her rapid-fire salutation, "Good-afternoon-CAS-this-is-Sue-how-may-I-help-you?" Ms. Grossi later became a full-time employee, switching from reception duties to executive assistant to the current CAS Executive Director, Cynthia Ziegler. At the end of this year, Ms. Grossi will retire from CAS and begin a new chapter in her life with her already-retired husband.

Mike Boa began working for CAS as a membership coordinator. One of his first major assignments for the CAS was to implement an electronic bulletin board, the precursor to the CAS Web Site. In the months that followed starting up that first Internet tool, Mr. Boa worked with various CAS volunteers to establish the Society's presence on the Web. He soon moved up the ranks, taking on research and development committees and eventually heading up the CAS marketing and communications division. Well-known throughout the CAS membership, Mr. Boa also serves as a role model to staff on the importance of excellent customer service.

Anyone who sat for exams since 1996 has done so with the tremendous efforts of Tom Downey, the CAS Director of

Left to right: Mike Boa, Sue Grossi, and Tom Downey

Admissions. Mr. Downey has been a tireless CAS employee, whose work is the essence of the organization, preparing candidates to earn their actuarial designations on their way to becoming P&C actuaries. Known by his coworkers as the "hardest working man in the CAS," Mr. Downey is usually the first one in and the last one out of the office. He is also greatly admired for his generosity and kindness. During his tenure, he has managed to get even the busiest of CAS employees to take just a little time out of their day to help with the twice yearly exam sort.

The CAS congratulates these employees on their fine achievements.

Three Tips for Employers and Recruiters to Fill Those Tough Positions

A recent Talent Shortage Survey* from ManpowerGroup found that 52% of U.S. employers today are having difficulty filling jobs. Here are the top three ways to access highly qualified talent to fill your hard-to-fill positions.

1. **Post open positions on niche job boards** like the online CAS Career Center that specifically targets the qualified talent you need.
2. **Search for qualified talent** in the online resume database, with over 1,250 resumes to choose from!
3. **Take advantage of upgrades** that make your job stand out on the job board or that get you added exposure off the job board like making it a "featured job" on other Web pages.

Let the CAS Career Center Be Your Source for Those Hard-to-Fill Positions!

http://careers.casact.org/

*http://us.manpower.com/us/en/research/hardest-jobs-to-fill/default.jsp

CAS Research Enhances the Profession

By Cheri Widoswki, CAS Research Manager, and David Core, CAS Director of Professional Education and Research

One of the purposes of the Casualty Actuarial Society is "to advance the body of knowledge of actuarial science applied to property, casualty and similar risk exposures." An integral component of this purpose is research and development in actuarial science. The CAS is undertaking four Research Call Paper programs and even more funded research projects. Nine Working Parties are also working diligently to complete their work.

Following is a snapshot of what research is now being done:

- The Climate Change Committee is funding development of an index to raise awareness of the potential risks associated with climate change and the risk management implications within North America and the rest of the world.
- The Committee on Ratemaking is in the midst of its 2012-2013 Call Paper Program. Ten papers are in the works and will be divided into one-year and two-year cycles; one-year papers will be published in spring 2012 and presented at the 2012 RPM Seminar.
- The Committee on Reserves just recently launched its 2012 Reserves Call for Papers and introduced a reserving topics e-mail list called RESNET (see story, page 28).
- The Committee on the Theory of Risk has a funded project on "Liquidity & Credit Risk in the Valuation of Assets & Liabilities in a Going Concern" and another to maintain and update the Risk Premium Project 2.
- The Dynamic Risk Modeling Committee recently completed its 2011 Call Paper program for the Loss Simulation Model and awarded the Emerging Issues Prize to Kailan Shang for his paper, "Loss Simulation Model Testing and Enhancement" (see story, page 6).
- The Committee on Health Care Issues will be presenting a session at the upcoming Annual Meeting on "The Painful Truth about Workers Compensation Medical Severity Trends" and is developing a wiki.
- The Valuation, Finance, and Investments Committee is involved in several funded research projects, including one on risk margins, another on contingent capital, and two on credit risk.
- The Committee on Reinsurance Research wrapped up its 2011 Reinsurance Call for Papers, with five papers published in the Spring *E-Forum*. The Reinsurance Prize awarded to authors David Homer and Richard Rosengarten for "A Method for Efficient Simulation of the Collective Risk Model."
- The Committee on Management Data & Information is working with authors of eight papers as part of its 2012 Call Paper program. Papers will be published in early 2012 and presented at the 2012 RPM Seminar.

The following Working Parties are completing their projects:

- The R Working Party is charged with making advanced R-based reserving, ratemaking, and predictive modeling procedures available, accessible, and of practical value to a wider audience.
- The Bornhuetter Ferguson Initial Expected Losses Working Party's goal is to produce a paper regarding the initial expected loss assumption in the Bornhuetter-Ferguson reserving method.
- The Dynamic Risk Modeling Handbook Working Party is in the final stages of completing this important handbook.
- The Economic Capital Working Party's goal is to find recommended changes to risk-based capital and create a model that is more user-friendly.
- The Working Party on Public Access DFA has three papers in the works for its Dynamo Call Paper Program; papers will be published in early 2012 and some may be presented at the 2012 Spring Meeting.
- The Tail Factors Working Party has just finished their report on the methods currently used by actuaries to estimate loss development "tail" or "completion" factors, including analysis of those methods.
- The Health Economics Working Party is just getting started and plans to research the impact of health care costs on casualty insurance coverages.
- The RBC Dependency and Calibration Working Party is preparing an interim report assessing the extent to which the current RBC formula is risk-responsive.
- The RBC Underwriting Risk Working Party is preparing a report on the short-term project that addresses whether the Working Party can suggest improvements to the NAIC's calibration methodology for the RBC reserve and premium risk factors—all while staying within the confines of RBC's current data sources and formula structure.

For more information, read the CAS *Research and Development News*, August issue, at http://www.casact.org/research/newsletters/August2011.pdf.

In Celebration of Volunteers: The CAS 2011 Volunteer Honor Roll

We are an association of people, professionals, and friends.

Since the founding of the CAS in 1914 volunteers have been the main life force sustaining the Society through its various dimensions of growth—in the examination process and in the variety of continuing education activities as well as in supporting the sheer growth in membership. As a result members of the CAS through their numerous volunteer activities essentially direct all phases of CAS operations.

In one particular year, 902 CAS members volunteered to fill 1,359 positions. An effort of this scale, which is quite typical, generates a continuous need for volunteers. Each year about a third of these positions become available through normal rotation. These positions include the entire range of CAS activities: the examination committees, research and development activities, liaison representatives, and various program committees and speakers, who serve as faculty for these programs. We'd also like to thank AAA volunteers, meeting and seminar speakers, and Regional Affiliate program participants not listed here. We recognize that none of these activities can take place without the active participation of the many CAS volunteers and for this we thank you.

Roselyn M. Abbiw-Jackson
Jennifer Lynn Abel
Jason Edward Abril
Yazeed F. Abu-Sa'a
Shawna S. Ackerman
Jeffrey H. Adams
Karen H. Adams
Stacy J. Adams
Jeffrey R. Adcock
Barbara J. Addie
Avraham Adler
Martin Adler
Alex Rudolf R. Agatep
Aadil A. Ahmad
Marcus R. Aikin
Justin L. Albert
Robert P. Aldorisio
Terry J. Alfuth
Jasmin Alibalic
Mark S. Allaben
Craig A. Allen
Ethan D. Allen
Sheen X. Allen
Melanie Allred
John P. Alltop
Rocklyn Tee Altshuler
Fernando Alberto Alvarado
Brian C. Alvers
Athula Alwis
Timothy Paul Aman
Denise M. Ambrogio
Vagif Amstislavskiy
Gwendolyn L. Anderson
Kevin L. Anderson
Kimberly Borgelt Anderson
Mark B. Anderson
Paul D. Anderson
Scott C. Anderson
Bradley J. Andrekus
Desmond D. Andrews
David Michael Andrist
Michael E. Angelina
Robert A. Anker
Jonathan L. Ankney
Matthew L. Antol
John G. Aquino
Deborah Herman Ardern
Amel Arhab
Nancy L. Arico
Rebecca J. Armon
Steven D. Armstrong
Richard T. Arnold
Kelleen D. Arquette
Lawrence J. Artes
Nolan E. Asch
Mohammed Q. Ashab
Carl Xavier Ashenbrenner
Joel E. Atkins
David Steen Atkinson
Yanfei Z. Atwell
Timothy Atwill
Genevieve Aubin
Lewis V. Augustine
Guy A. Avagliano
Craig Victor Avitabile
Waswate Ayana
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The CAS is grateful for the support of employers who encourage their actuaries to volunteer their time and effort to the CAS. Here are two "snapshots" of these employers

Top Ten Employers with the Largest Number of Fellows Volunteering

Towers Watson
Liberty Mutual Group
Milliman, Inc.
The Travelers Companies, Inc.
Allstate Insurance Company
CNA Insurance Companies
The Hartford
Insurance Services Office, Inc.
PricewaterhouseCoopers LLP
Ernst & Young LLP

Large Employers with at Least 50% of Fellows Volunteering

Allstate Insurance Company
Aon Benfield
Chartis Insurance
CNA Insurance Companies
Deloitte Consulting LLP
Ernst & Young LLP
Farmers Insurance Group
Insurance Services Office, Inc
KPMG LLP
Milliman, Inc.
National Council on Compensation Insurance, Inc.
Nationwide Insurance Company
Pinnacle Actuarial Resources, Inc.
PricewaterhouseCoopers LLP
Swiss Re
Towers Watson
United Services Automobile Association
Willis Re, Inc.

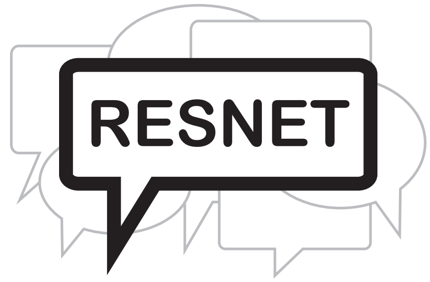
CAS Reserves Committee Launches RESNET

The CAS Committee on Reserves invites you to join RESNET, a new e-mail discussion list for reserving practitioners. Subscribers are free to discuss any topic that might be of interest to those working in the field of reserving.

Possible topics include:

- Methodology
- Ranges
- Principles and practices
- Reserving examination subject matter
- Research issues
- Regulatory concerns
- Loss simulation model
- Surveys (reserving papers, links, and resources)

RESNET offers two delivery options: standard or digest. With standard delivery, subscribers immediately receive each message that is sent to the list. Digest mode sends a single e-mail message every 24 hours that is a compendium of RESNET messages posted the previous day.



To join RESNET, send an e-mail to the CAS Office (office@casact.org) with your request to join. Your request should include:

- your full name
- date of birth
- e-mail address
- subscription mode (standard or digest).

Once your subscription request has been completed, you will be sent an e-mail with further instructions and guidelines for the e-mail discussion list.

The Committee on Reserves looks forward to your participation in RESNET!

2012 CAS Trust Scholarship Program Underway

The CAS Trust Scholarship Committee is now accepting applications for the 2012 school year. The objective of the scholarship is to further students' interest in the property/casualty actuarial profession and to encourage the pursuit of the CAS designations.

Eligibility Requirements

In order to be considered, the following criteria must be met:

- Applicants must be U.S. or Canadian citizens or have permanent resident visas.
- Applicants must currently attend a U.S. or Canadian college or university as a full-time student, and continue as a full-time student at a U.S. or Canadian college or university in the 2012-2013 academic year.
- Applicants must have sat for at least one actuarial exam by March of 2012.
- Applicants should demonstrate high scholastic achievement, strong interest in the casualty actuarial profession, mathematical aptitude, and communication skills.

Preference will be given to applicants who have not yet won the CAS Trust Scholarship.

Applicants must submit the following:

- The four-page CAS Trust Scholarship application and attached essay.
- The two recommendation letters included in this application, preferably completed by internship supervisors, instructors or advisors at your educational institution who know you well. Only two recommendation letters will be considered.
- A current official transcript.

Incomplete applications will be disqualified without any consideration to partial information received.

Completed applications are due by March 1, 2012. Winners will be notified of award decisions by May 25, 2012.

Know a deserving candidate? Scholarship applications for the 2012-2013 school year are now available at www.BeAnActuary.org.

Use and Disclosure of Additional Data

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.

Big Insurance Company (BIC) writes coverage in the Always Disputed Line (ADL) of business, in which they are aggressive in challenging all claims. The coverage for claims can be ambiguous, and subject to interpretations by courts and arbitrators. With extensive supporting documentation, BIC routinely challenges the foundation of ADL claims. This practice often leads to litigation, thus extending the time it takes before claims are finally closed. BIC sets reserves for litigated claims with the expectation that they will win the case or obtain a substantially reduced settlement.

Diligent Actuary (DA) is responsible for providing actuarial reserve estimates of ADL liabilities for BIC. The historic loss and expense development patterns generated from the data triangles are slow and stable; however, unexpected development occasionally occurs in later development periods. When DA questions the claims team, they respond that these unexpected developments are "one-shot events" with plausible circumstances. Based on the claims team's response, DA selects LDFs using an average of the one-shot values, along with assumptions of exponentially declining tail factors. A peer review of DA's work finds the results acceptable.

The claims department's Tough Manager (TM), however, doesn't like surprises from claims professionals. TM understands that management can deal with some uncertainty as long as the process is primarily successful. While claims are reserved on a sound philosophy, TM acknowledges the uncertainty of the outcomes and knows that the claim handling process has to be carefully managed. Therefore, TM has developed a database that tracks every claim in detail, which is used to manage the settlement process. TM understands the importance of certain claim characteristics in forecasting the ultimate outcome and appropriate defenses. Based on his detailed analysis and tracking of claims, TM is rarely surprised at the outcomes. His focus is on managing the business of claims, and assuring BIC that the claims department is vigorously at work settling the claims at the right values.

DA is aware of TM's database, and he is starting to think that it may be a somewhat predictive source, but he has been reluctant to introduce it into his reserving process because it requires additional steps that would slow down the analysis. The triangles seem stable to anyone looking at them. Historically, BIC management has retained an outside actuary to sign an opinion and report to the board. BIC is also undergoing an independent reserve audit through another external actuary. Neither of these external actuaries is aware of the existence of the claims database.

It's now time for the annual discussions with the external actuaries, who are preparing for their analyses. When the external actuaries interview DA, what is DA's responsibility in disclosing the claims database? Is he obligated to use this database in his own internal analysis? What, if any, are the obligations imposed by the ASOPs and Codes of Conduct that govern DA's actions?

Option 1

DA is under no obligation to use the database, or disclose it to the external actuaries. None of the ASOPs or statements of principle require an actuary to look at all available data, as long as he believes the data he is using is sufficient and accurate.

Option 2

DA is obligated to use the additional claims data to supplement his analysis, and to disclose it to the auditors. The auditors must have access to all available information. While not specifically addressed in the ASOPs, not using or disclosing the data violates the code of conduct.

Economic Scenario Generators and Correlation

One of the challenges involved in developing risk-based capital formulas is that of aggregating risks when there are dependencies between risks. Two of the many approaches to this problem are (1) correlation matrices and (2) economic scenario generators. While I personally tend to favor the economic scenario generator approach, we work in an industry that, with at least some justification, changes slowly. And the current favorite approach for standard risk-based capital formulas, such as used in the standard Solvency II formula,[1] uses correlation matrices.[2] The purpose of this column is to connect these two approaches and highlight some properties of correlation matrices that are implied by economic scenario generators, and compare these properties to those of the Solvency II approach.

Risk-based capital formulas involve the aggregation of many risks. Let's consider a simple example with two risks with random variables X_1 and X_2, having means μ_1 and μ_2, and standard deviations σ_1 and σ_2. If X_1 and X_2 are independent, the standard deviation of their sum is $\sqrt{\sigma_1^2+\sigma_2^2}$. If X_1 and X_2 have a nonzero coefficient of correlation, ρ_{12}, then the standard deviation of their sum is $\sqrt{\sigma_1^2+2\cdot\rho_{12}\cdot\sigma_1\sigma_2+\sigma_2^2}$. While I expect that most readers are familiar with these formulas, there is still no actuarial consensus on how to estimate ρ_{12}.

Thinking of inflation as a prime example, economic scenarios can be thought of as events that affect random variables simultaneously. Let Z_1 and Z_2 be independent random variables with means μ_1 and μ_2, and standard deviations σ_1 and σ_2. Think of Z_1 and Z_2 as representing process risk. One way to incorporate an economic scenario generator into our model is to let B be a random variable with mean 1 and standard deviation β. Then let $X_i = B\cdot Z_i$ for i = 1 and 2. Under this model, X_1 and X_2 will be correlated. Calculating:

$$\begin{aligned} Var[X_i] &= Var[B\cdot Z_i] = E_B[Var[B\cdot Z_i]|B] + Var_B[E[B\cdot Z_i]|B] \\ &= E_B[B^2\cdot Var[Z_i]] + Var_B[B\cdot E[Z_i]] \\ &= \sigma_i^2\cdot E_B[B^2] + \mu_i^2\cdot Var_B[B] \\ &= \sigma_i^2\cdot(1+\beta^2) + \mu_i^2\cdot\beta^2; \end{aligned}$$

and for $i \neq j$:

$$\begin{aligned} Cov[X_i, X_j] &= Cov[B\cdot Z_i, B\cdot Z_j] \\ &= E_B[Cov[B\cdot Z_i, B\cdot Z_j]|B] + Cov_B[E[B\cdot Z_i], E[B\cdot Z_j]|B] \\ &= E_B[0] + Cov_B[B\cdot\mu_i, B\cdot\mu_j] \\ &= \beta^2\cdot\mu_i\cdot\mu_j. \end{aligned}$$

Denoting the coefficient of variation for Z_i by CV_i and after some algebra we have:

$$\rho_{12} = \frac{Cov[X_1, X_2]}{\sqrt{Var[X_1]\cdot Var[X_2]}} = \frac{\beta}{\sqrt{CV_1^2\cdot(1+\beta^2)+\beta^2}}\cdot\frac{\beta}{\sqrt{CV_2^2\cdot(1+\beta^2)+\beta^2}}.$$

While there is some literature[3] on estimating CV_i and β, most actuaries have dealt with similar data in other contexts, so we should be able to appeal to past experience to get ballpark ranges for CV_i and β. For the sake of discussion, I suggest the following:

- For a single insurer's line of business, the *CV* will depend on the volume of business. I will suggest a *CV* of 0.01 for a high-volume stable line of business, and a *CV* of 0.25 for a relatively low-volume unstable line of business. On the asset side, a *CV* of 0.01 would be a relatively stable investment.
- Inflation has held fairly steady in recent times, but some of us will recall more volatile times. I suggest that β = 0.01 for a reasonable economic scenario generator, and that β = 0.10 for a very volatile economic scenario generator. Think of a year when the stock market could go up or down 20% (two standard deviations with β = 0.10).

Table 1 tabulates ρ_{12} for various combinations of β and $CV_1 = CV_2$.

Table 1

		β		
		0.10	0.05	0.01
CV	0.25	0.0381	0.0099	0.0004
	0.10	0.0901	0.0243	0.0010
	0.05	0.1653	0.0475	0.0020
	0.01	0.4975	0.1996	0.0099

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[1] An Internet search on "Solvency II overview" will yield several references. Here is a link to a recent presentation describing Solvency II that was given at the 2011 CLRS. http://www.casact.org/education/clrs/2011/handouts/INTNL2-Payne.pdf

[2] An Internet search on "Solvency II Correlation Matrix" will yield several references. One of the more readable ones is a paper by Tom Herzog at this link: http://www.naic.org/documents/index_smi_solvency_ii_calibration.pdf.

CLRS Call Paper Program Yields Enhanced Loss Simulation Model

By Robert Bear, Chairperson, CAS Dynamic Risk Modeling Committee

The Dynamic Risk Modeling Committee and Committee on Reserves jointly sponsored the 2011 CLRS Call for Papers on "Testing Loss Reserving Methods, Models and Data Using the Loss Simulation Model." The Loss Simulation Model (LSM) was developed by the Dynamic Risk Modeling Committee with CAS Support. It is an open-source simulation model of the processes of loss emergence and settlement, commonly known as loss development, that underlie the loss "triangles" and other statistics used to estimate unpaid claims. Both the run-time version and the source code are available on the CAS Web Site at http://www.casact.org/Research/LSMWP, along with the Loss Simulation Model Working Party paper titled, "Modeling Loss Emergence and Settlement Processes," and complete model instructions and documentation.

Bryan Ware, Joe Marker, Dana Joseph, and Kun Zhang worked together on this call paper program that produced Kailan Shang's excellent paper, "Loss Simulation Model Testing and Enhancement." This paper yielded much needed additional model testing that the volunteers on the Loss Simulation Model Working Party (LSMWP) did not have the time to complete, as well as a valuable potential model enhancement and other useful suggestions for improvements. The Dynamic Risk Modeling Committee and the Committee on Reserves awarded a $5,000 prize to this best paper from the 2011 CLRS Call Paper Program and also named it the 2011 Emerging Issues Prize winner. The Emerging Issues Prize is awarded to the best call paper(s) to come out of a new, but not necessarily repeating, call paper program.

Hai You, Vice President Technology for Goouon Actuarial Solutions, programmed the current version of the LSM and will incorporate these recommendations and enhancements in an upgraded version. The Dynamic Risk Modeling Committee anticipates this work will be completed by the end of 2011.

The Dynamic Risk Modeling Committee has developed a model that we hope will become a valuable tool in researching loss reserving methods and models. We hope that actuaries will use the LSM to:

(1) Better understand the underlying loss development process.

(2) Determine which methods and models work best in different reserving situations, including models for estimating reserve variability.

(3) Reflect this knowledge in evolving loss reserving practices.

Robert Bear is an independent actuarial consultant and reinsurance arbitrator, and may be reached at rabsolutions@gmail.com.

Brainstorms, From page 30

The correlation matrix for general insurance in Solvency II is constant, with coefficients of correlation equal to 0.25, 0.50, or 0.75. This model has implications that run counter to the Solvency II assumptions. I invite debate on the following conclusions.

- When general insurance losses are involved, the coefficient of correlation should vary by the volume of business. In particular for small insurers, process risk dominates and reduces the coefficient of correlation to near zero.
- The coefficients of correlation in the Solvency II matrix are likely to be too large. In Table 1, it takes a rather unusual set of circumstances, volatile scenarios and low process risk, to get coefficients approaching 0.50. All the other coefficients in Table 1, representing less extreme scenarios, are below 0.25.

If this model represents reality, the effect of a standard formula like that in Solvency II will lead to overstated insurer variability in its operating results, and an understated benefit for diversification. It will also lead to a divergence between standard formula and economic scenario-based insurer internal models. Using a correlation matrix similar to that described in this article will bridge the gap between the two approaches.

[3] See, for example, my paper titled "The Common Shock Model for Correlated Insurance Losses" which appears in *Variance* 1:1, 2007, pp. 40-52. http://www.variancejournal.org/issues/?fa=article&abstrID=6373

Seasoned Actuaries—The Exam Committee Wants You!

By Daniel G. Roth, Examination Committee Chairperson

As noted in the December 2010 *Future Fellows* article, "The Evolution of CAS Examination Questions," the CAS Board of Directors has asked the Examination Committee to shift the mix of items on the exams to include greater assessment of complex reasoning. To meet this demand, the Examination Committee is creating new question-writing processes and is seeking experienced subject-matter experts to help develop better synthesis and evaluation questions—bringing together the important concepts of what an actuary must do. Prior Examination Committee experience is a plus, but not required. These positions also will not require any commitment to grade exams.

Although the committee expects that its traditional grading/writing roles will continue to be an attractive volunteer opportunity for both new and experienced members, it wants to specifically encourage our seasoned actuaries to consider these new question-writing roles as an interesting and exciting way to bring to life the Board's vision of the future of our examination process.

If you are interested, please contact Rhonda Walker at rpwalkerbhnj@verizon.net and specify which examination or topic matches your expertise. Please note that the syllabus was revised in 2011 (the revised syllabus can be found online at http://www.casact.org/admissions/syllabus/). Question writing will begin in 2012.

CAS Roundtable Blog Launched

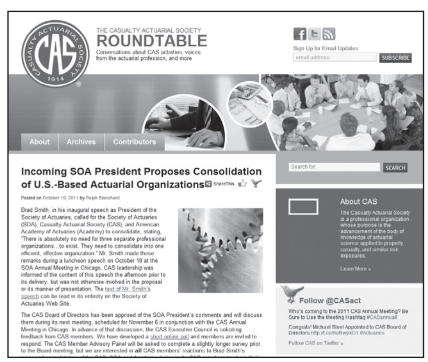
By J. Michael Boa, CAS Director of Communications and Marketing

The CAS unveiled its new blog, The CAS Roundtable, in July 2011. In keeping with the spirit of its name, The CAS Roundtable is intended to serve as an interactive forum for the discussion and exchange of views on important issues within the CAS and casualty actuarial profession.

As CAS President Ralph Blanchard wrote in the inaugural blog post, "We hope that [The CAS Roundtable] will become a regular part of our communications between the CAS leadership and members, allowing for timely feedback in both directions."

To that end, blog posts to date have featured topics such as transparency and the actuarial discipline process, the CAS's proposed CERA certification requirements, statistics in the actuarial skill set, and the NAIC's Own Risk and Solvency Assessment (ORSA) proposal.

Readers of the blog have responded to the invitation for engagement by submitting comments on every blog post. For example, the post about statistics in the actuarial skill set, in which CAS Vice President-Admissions David Menning asked whether the CAS basic education system covered statistics at the appropriate level, resulted in 33 responses from blog readers.



If you haven't yet participated in these discussions and added your comments, I hope you will. The CAS is committed to communicating with members regarding issues under consideration by CAS leadership and encourages member input on those issues. The blog is a new communication vehicle that allows the CAS to do exactly that. Join the conversation at the roundtable today!

The CAS Roundtable is linked directly from the CAS Web Site home page and can be accessed directly at blog.casact.org.

2012 Ratemaking and Product Management Seminar Comes to Philly

Register now for the 2012 Ratemaking and Product Management (RPM) Seminar, scheduled for March 20-21, 2012, in Philadelphia, PA. The 2011 Seminar was well received by the attendees, with over 80% characterizing the overall educational value of the seminar as "Good" or "Excellent," according to the post-seminar survey. The RPM Seminar Planning Committee is reviewing the 2011 seminar feedback to make improvements for next year's event. In 2012, the planning committee will add a new workshop on R and bring back the popular predictive modeling workshop as well as well-received sessions from 2011. As always, the majority of the seminar's session lineup will be made up of new material and topics.

The RPM Seminar offers a wide range of continuing education opportunities for actuaries, underwriters, and other insurance professionals, including practical hands-on sessions for attendees of all experience levels. Sessions have been designed for both the novice and the experienced professional.

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

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

- Regulatory
- Personal Lines
- Predictive Modeling
- Implementation Issues
- Workers Compensation
- Product Management
- Data Management
- Underwriting
- Commercial Lines
- Professionalism
- Rate of Return

Attendees can choose to come early for a full day of workshops on March 19. Select from one of four workshops offered: R, Predictive Modeling, Product Development, or Basic Ratemaking. These four 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.

See you in Philly!

CAS Webinars Offer Cost-Effective CE Credit Options

If you are looking for ways to gain continuing education (CE) credit, CAS Webinars are exceptional values. Attending a CAS Webinar is a great way to get organized CE credit without leaving your office.

Since their start in 2007, CAS Webinars have consistently been well-attended and well-received, garnering positive reviews. The CAS Webinar Committee works with presenters to develop educational opportunities that are timely and useful—all at a reasonable cost.

A sample of past Webinar topics include reinsurance counterparty risk, ASOPs, copulas, and claim fraud detection. Many of our Webinars also focus on timely professionalism topics.

CAS Webinars will cover a wide variety of subjects in the remainder of 2011 and into 2012. Look for more information on Webinar topics and registration on the CAS Web Site and weekly CAS e-mails.

Be sure to consider the CAS Webinars when planning your continuing education for the remainder of 2011!

We'd Love to Hear from You!

If you would like to recommend topics for future Webinars, please send us your thoughts in an e-mail to meetings@casact.org.

Actuarial Foundation Update

THE ACTUARIAL FOUNDATION

Program Doubles Your Donation to The Actuarial Foundation

Now is your chance! When you make a first-time donation to your Foundation of $50 or more, your gift will be matched—dollar for dollar—through the Foundation's Matching Gift Challenge.

Donate now and double your money in support of teaching materials in the classroom, scholarships for students and financial education for the public. Take the first step.

Make your gift today and double your donation at www.actuarialfoundation.org/donate/index.shtml.

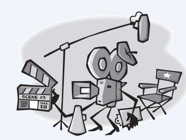
Foundation Awards 48 Scholarships

The Actuarial Foundation is proud to announce that it has awarded scholarships to 48 talented and deserving students for the 2011-2012 school year. This is the highest number of Foundation scholarship recipients in any single year.

The Foundation awarded 31 Actuarial Diversity Scholarships, 14 John Culver Wooddy Scholarships, two Caribbean Actuarial Scholarships, and one *Actuary of Tomorrow*–Stuart A. Robertson Memorial Scholarship.

At http://www.actuarialfoundation.org/programs/actuarial/scholarships.shtml, you can meet the Foundation's 2011-2012 scholarship winners.

Lights! Camera! Actuaries!



The Actuarial Foundation is building a library of fun online math videos for children grades 3-12 and we want you to be the star! Teachers nationwide will use these videos to liven up their instruction and show their students the fun and relevance of math.

But we need your help to build this video library. Simply think of your favorite math brain teaser, word problem, or mystery, get it on video and send it to the Foundation. For a few minutes of your time, you can potentially reach thousands of kids!

For full details and to view sample videos, go to http://www.actuarialfoundation.org/programs/youth/math-videos.shtml.

Financial Smarts Is For Everyone!

Join actuaries who are getting their local public libraries to subscribe to the Foundation's free *Financial Smarts* newsletter for their patrons. Each edition of this consumer financial education newsletter spotlights important topics such as insurance, retirement planning, saving, and investing.

Give back to your community on behalf of your profession. To volunteer to bring *Financial Smarts* to your local library, go to http://www.actuarialfoundation.org/programs/library.shtml.

Stay Up to Date With the Foundation

Keep current on the Foundation's many activities at www.ActuarialFoundation.org. AR

Team USA Places Second in Math Olympiad

The U.S. team placed second in the 52nd International Mathematical Olympiad (IMO). U.S. contestant David Yang (a sophomore at Phillips Exeter Academy in Exeter, NH) tied for the fourth best score among all individuals competing in the contest. All six members of the USA team received gold medals, something the USA team last accomplished in 1994.

In addition to Yang, the team representing the U.S. at the 2011 IMO included Wenyu Cao, a senior at Phillips Academy in Andover, MA; Benjamin Gunby, of Potomac, MD, a junior

Team USA Places Second, page 35

Five of the six winners of the 2011 USAMO pictured from left to right are Xiaoyu He, David Yang, Evan O'Dorney, Mitchell Lee, and Ben Gunby, Not pictured is Wenyu Cao who had left to participate in the International Olympiad on Informatics.

MICHAEL ERSEVIM

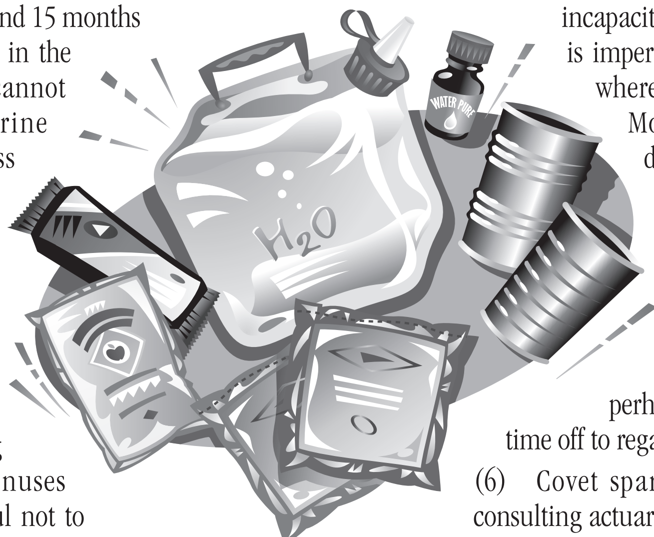
Prudent Catastrophe Management for the P&C Actuary

Given the recent spike in occurrences of natural disasters that strike the U.S. mainland, thoughts should be given in advance as to how to be better prepared for an emergency. Here are some useful actions that the diligent actuary can take to be prepared for the next big catastrophe:

(1) Stockpile LDFs for multiple lines. Prepared actuaries should have many factors at their disposal, including industry factors starting at 12 and 15 months to avoid having to interpolate in the dark. For example, if you cannot quickly access Inland Marine 27-to-ultimate incurred loss development factors, you must proceed at your own peril.

(2) Neatly store your data triangles in a sturdy waterproof container. Efficient packing should result in rectangular layers consisting of two similarly-sized, opposing triangles with their hypotenuses together. Safety first: be careful not to place two highly volatile triangles on top of each other, such as Umbrella or Excess GL triangles.

(3) When electricity is out for extended periods of time, you need to have a supply of pre-made reports that won't spoil. Canned reports may not be the most satisfying, but they will last for months or even years. So be sure to can your reports (just like grandma used to!) and you can enjoy "fresh" results many months into a data drought.



(4) Any good survivalist actuary will also purchase lots of spare batteries for non-solar calculators (as it will likely be cloudy during the apocalypse) and plenty of water to help water down unanticipated steep reserve increase indications. Purification tablets can also help make unsafe water potable or consultants' reports more palatable.

(5) Have a safe "fall-back" position in case you get hurt. If you are unfortunate enough to be injured or incapacitated during a natural disaster, it is imperative that you have a safe place where you can regroup and recover. Most underwriting or marketing departments can provide plenty of cover under which an incapacitated actuary can hide. Tip: A spare banjo can also be used to test whether or not your recovery is complete. If you find you can play it well, perhaps you'd better take some more time off to regain your senses.

(6) Covet spare billing codes. Vital to any consulting actuary, spare, gently used billing codes can help get you through light billing times, over-budget projects, and past revenue-hungry bosses' quotas during extended work droughts or family emergencies.

(7) Squirrel away surplus Surplus. There's no better time to have a stash of unmarked, non-sequential $100 dollar bills to help shore up any reserve shortfalls. ATMs may be down for weeks and financial institutions can collapse at the drop of a hat, so sock it away while you can. Just don't forget to lock the drawer to ensure SOX compliance. AR

Team USA Places Second, From page 34

at Georgetown Day School in Washington, D.C.; Xiaoyu He, a junior at Acton-Boxborough Regional High School in Acton, MA; Mitchell Lee, a junior at Thomas Jefferson High School for Science/Tech in Alexandria, VA; and Evan O'Dorney, a senior at Venture Home School in Danville, CA.

The IMO is an annual six-problem, 42-point math competition held over two days. More than 105 nations compete in this annual event, which is the oldest of the International Science Olympiads. Each day participants take a 4.5-hour, three-problem exam, which covers a wide range of mathematics. Past IMO questions can be found at http://amc.maa.org/a-activities/a7-problems/problemdir.shtml. AR

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

CAS Professional Education Calendar

March 19-21, 2012
Ratemaking & Product Management (RPM) Seminar
Philadelphia Marriott Downtown
Philadelphia, PA, USA

April 18-20, 2012
ERM Symposium
Washington Marriott Wardman Park
Washington, DC, USA

May 20-23, 2012
CAS Spring Meeting
Arizona Grand Resort
Phoenix, AZ, USA

June 4-5, 2012
Seminar on Reinsurance
Hyatt Regency Cambridge
Boston, MA, USA

September 17-18, 2012
Casualty Loss Reserve Seminar (CLRS)
Sheraton Denver Downtown Hotel
Denver, CO, USA

In Memoriam

Michael B. Epstein
(ACAS 1983) 1949-2011

Howard H. Kayton
(FCAS 1976) 1936-2011

John R. Linden
(FCAS 1961) 1930-2011

Elizabeth M. Mauro
(FCAS 2011) 1973-2011

Richard J. Mills
(FCAS 1957) 1928-2011

Frank T. White
(ACAS 1978) -2011

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Or e-mail us at AR@casact.org

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