The Actuarial Review

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From the President: What Does it Mean to be International?—Ralph Blanchard—What role should the CAS play in this brave new world? How international should the CAS be, and what does it mean to be "international" in the first place? 3

New Fellows and Associates Admitted in November 2010 16

CAS to Address ACAS Rights: Proposed Constitution and Bylaws Amendments Slated for 2011 Election 21

Committee Seeks to Develop CAS Future Leaders 22

Opinion: Discount Rate for Reserves Should Not be Increased for Illiquidity —Neal Schmidt—Many contentious issues that have arisen out of the various economic or fair value accounting proposals being considered by the IASB and the FASB, and under Solvency II 26

The Top Ten Casualty Actuarial Stories of 2010—Michael Christian and Joseph Milicia 27

In My Opinion: I Won the Lottery!—Grover Edie—Many of us use the math behind lotteries to explain expected value and other probabilistic concepts. Here is how I see I won the lottery. 31

INSIDE THIS ISSUE

25 Years Ago in the *AR* 7
Brainstorms 8
Coming Events 10
Nonactuarial Pursuits 12
It's A Puzzlement 15
Ethical Issues Forum 23
Humor Me 25

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Thank You For Being A Friend!

The CAS has reached over 1,300 followers on Facebook, Twitter, and LinkedIn! We encourage those who are already following to leave us comments and feedback on posts they like or want to discuss. If you have not done so already, make sure to follow us through the social media widgets on our Web site at www.casact.org.

If you cannot access Facebook, Twitter, and LinkedIn from your office, please consider signing up to follow us from home via your personal account. *AR*



2010 CAS Annual Meeting Sponsors Recognized

The CAS appreciates the support provided by the sponsors of its 2010 Annual Meeting:

- Actuarial Careers, Inc.
- Guy Carpenter
- ISO
- LexisNexis
- Milliman
- Pauline Reimer and Pryor Associates Executive Search
- Towers Watson

The 2011 CAS Annual Meeting is scheduled for November 6-9 at the Hyatt Regency in Chicago. Contact Mike Boa at the CAS Office (mboa@casact.org or 703-562-1724) for details on sponsorship opportunities for the 2011 event. *AR*

What Does it Mean to be International?

As I write this, the comment deadline for the International Accounting Standards Board (IASB)'s proposed new insurance accounting rules has just ended (with many potential implications for casualty actuaries), the International Association of Insurance Supervisors (IAIS) is in the process of issuing new "core principles" for insurance regulators everywhere, and the International Actuarial Association (IAA) is discussing how it might start issuing more actuarial practice standards. The impact of international issues on actuarial practice seems to be increasing steadily, with no end in sight.

So how does this affect the CAS? What role should the CAS play in this brave new world? How international should the CAS be, and what does it mean to be "international" in the first place? A logical place to begin answering these questions is to define our terms. In this case, that means defining "international."

"International" with regard to the CAS can have three difference contexts:

- Being a world citizen within the global international community.
- Partnering with others in the research and education arena, wherever those other parties may be.
- Having and supporting members in multiple countries.

World Citizen

For any actuarial association, acting like a responsible world citizen essentially means being an active member of the IAA. (The IAA is the actuarial version of the United Nations, but with more potential teeth to it than the United Nations). The IAA sets minimum standards (i.e., the "teeth" mentioned above) for its members with regard to education and professionalism. It also is where other international standard-setting organizations go when they want or need actuarial insight.

To have a seat at the IAA table (and hence to protect the interest of casualty actuaries with regard to international standards on accounting regulation, and actuarial education and professionalism) the CAS must participate in IAA committees; otherwise, it risks having standards thrust upon our members that are unworkable where our members practice and for the products and risks they work with. This is a very real risk, as nearly all other actuarial organizations only send their pension and life insurance experts to IAA meetings.

Partnering in Research and Education

According to our constitution, part of the purpose of the CAS is "to advance the body of knowledge of actuarial science applied to property, casualty, and similar risk exposures." This is not something we can do in isolation. As pointed out in the article "With a Little Help From Our Friends" (*Actuarial Review*, August 2010), the CAS and the countries where its members predominate are not the sole source of useful ideas within the casualty profession. The advances in predictive modeling applied to insurance came mostly from the U.K., while many of the stochastic modeling developments arose out of work in Australia. For the CAS to be a major source of casualty actuarial science development and education, we need to partner with these other sources wherever they may be.

Supporting Members (and Candidates)

The third facet of internationalism for the CAS is support of its members (and candidates) wherever they may be.[1] This entails some degree of internationalism to the extent that CAS members reside in more than one country, but it also involves decisions as to where the CAS is willing to offer basic education (including providing exam testing sites) and the extent to which the CAS will support the needs of multiple languages and cultures.

(Note that while the earlier items were truly international in scope, in this one the CAS is actually more multinational than international. This is due to the decision to-date to use English as our nearly exclusive language of communication.)

Where do We Go from Here?

Given the above, how international should the CAS be? This has been and is continually being discussed at meetings of both the CAS Board (with regard to strategic issues) and the CAS Executive Council (with regard to operational issues). The following describes my current views on this issue, with regard to the three different facets of the issue discussed above.

From the President, page 5

[1] The CAS has been multinational for all but the first few months of its existence. CAS was established in November 1914 under the name "Casualty Actuarial And Statistical Society Of America" before adopting its current name in 1921. While all the original charter members were from the U.S, by May 1915 members were added from Canada and the U.K. By 1925 the CAS *Yearbook* showed members also resided in Australia, Brazil, Italy, and New Zealand.

"Lowest Quote" Ethics Question Garners More Discussion

Dear Editor:

In reading "Does the Placement Go to the Lowest Quote?" (Ethical Issues, *AR*, May 2010), I believe Joe should not be obligated to reject the lowest quote. His only ethical obligation should be to insure that LC Re can handle its financial obligations. Actually, Joe is in a unique position to use his actuarial background to follow up on the quote; he can contact the actuarial department for clarification, or he can investigate the financial history of the reinsurer, or both. If he determines that LC Re can handle its obligations, he should accept the quote.

There is almost a tacit assumption that matching losses (and tacking on extra for expenses) is the only way to price insurance with integrity. But this is only one consideration. CAS required readings teach that marketing considerations can also be modeled in addition to losses and premiums. It may be that there are legitimate reasons to overprice or underprice coverage in order to convert and retain quality business. By allowing actuaries to price with a soft market mentality, this benefits the public by offering a corrective against institutionalized overpricing.

I hope to join an actuarial society that is open-minded in its view of pricing ethics. Actuaries should be required to behave honestly, transparently, within the law, and with fairness. But it is arbitrary and incorrect to require them to match losses plus expenses as robotically as possible, disregarding marketing considerations. Joe shouldn't have to feel shamed into doing what is best for his policyholders and company. If there's no reason LC Re can't handle its obligations, then Joe is behaving with more integrity by accepting the quote than by pouring the money down the drain.

Thanks for the interesting article and for your consideration. I hope to see more like it!

—David Ochodnicky

General Business Skills = New Math

Dear Editor:

The bottom line of what Roger Hayne is advocating in his "From The President" column ("Got Skills?," *AR*, November 2010), is the actuarial equivalent of "New Math." Readers would be well advised to check out the Wikipedia article on New Math and listen to the classic Tom Lehrer song "New Math."

In essence, New Math was an attempt to teach abstract algebra to young children rather than teach the traditional subjects of hard arithmetic and concrete problem-solving algebra over the real and complex number fields. The result was high school graduates who could not do basic things like calculate percentages and multiply integers.

We can expect the exactly analogous outcome if we try this in the actuarial profession. By trying to educate students in amorphous "general business skills" rather than specific hard actuarial skills we will produce Fellows who cannot square a loss development triangle, on-level earned premium, calculate the present value of a life annuity, etc.

—Jon Evans, FCAS AR

10 Ways to Stay Connected with the CAS

1. Visit the CAS homepage regularly (www.casact.org) to check for new updates.
2. Read and contribute to CAS publications, such as *Variance, Actuarial Review,* and *E-Forum.*
3. Subscribe to the RSS feeds from the CAS Web Site.
4. Become involved. Volunteer on a committee or task force.
5. Visit the MyCAS profile and update your information.
6. Review the weekly e-mail bulletin every Wednesday.
7. Mentor candidates or students, or make a school presentation about actuarial careers.
8. Be a speaker at one of our many educational conferences.
9. Attend CAS meetings and seminars and network with colleagues.
10. Follow CAS on Facebook, Twitter, and LinkedIn. AR

Do We Want to be a Global Citizen?

We have no choice in the matter . We cannot serve our members appropriately without being an active (if not a pro-active) global citizen. That means actively supporting volunteers serving on IAA committees, keeping in mind that our financial resources are limited.

Do We Want to Partner with other Associations, Wherever They May Be?

Here I also believe that we have no choice in the matter. We can't be recognized as a leader in casualty actuarial science and ignore developments outside our typical boundaries. The only question is how to do so in an efficient manner. Currently this involves sending research and education representatives to key U.K. and Australian meetings—just as they send representatives to our meetings—and cross-pollinating each others' research committees.

How do We Support our Members and Candidates Outside our Traditional Base of the U.S. and Canada?

This facet of internationalism raises more open-ended questions than the other two. The geographic spread of our membership is changing, with a small but rapidly growing segment living and working in East Asia, as well as established groups of members in Bermuda and Europe, with isolated numbers in other locations. Historically, our "on-the-ground" resources outside the U.S. and Canada have been somewhat limited, however, innovations in communication technology are making it much easier to provide service to and work with people in all parts of the world.

***

In the coming months, the CAS leadership will be discussing a redefined international vision for our Society. We will be looking at new and additional ways to service our members wherever they may be. Stay tuned.

2011 CAS Trust Scholarship Program

The Casualty Actuarial Society is accepting scholarship applications for college students pursuing a career in actuarial science. The CAS Trust Scholarship program, funded by donations to the CAS Trust, will award up to three $2,000 scholarships to deserving students for the 2011-2012 academic year.

Applicants must be permanent residents of the U.S. or Canada, or have permanent resident visas, and be admitted as full-time students to U.S. or Canadian educational institutions to be eligible. Applicants must have demonstrated high scholastic achievements and strong interests in mathematics or mathematics-related fields. Applicants must also have taken at least one exam prior to March 1, 2011.

Recommendations, transcripts, actuarial exam results, work experience, and written essays will all be considered in selecting the award recipients. Additional details and applications are available online at www.casact.org/academic/index.cfm?fa=scholarship. Applications are due by March 1, 2011, and winners will be notified in late May.

The intent of the scholarships is to further students' interests in the property/casualty actuarial profession and to encourage pursuit of the CAS designation. Established in 1979, the Casualty Actuarial Society Trust affords CAS members and others an income tax deduction for funds contributed and used for scientific, literary, or educational purposes.

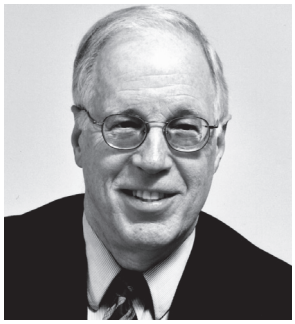
For questions, comments, or to submit an application please contact Megan O'Neill, CAS Communications Coordinator, at moneill@casact.org.

Spalla, Meyers, and Venter Recognized as Outstanding Volunteers

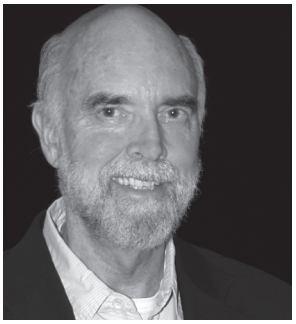
Three exceptional CAS volunteers were honored at the opening Business Session of the 2010 Annual Meeting in Washington, DC. Joanne Spalla received the Above and Beyond Achievement Award and Glenn Meyers and Gary Venter each received the Matthew Rodermund Service Award.

Each year more than a third of CAS members participate as volunteers. Among these members are select individuals who contribute far more than is expected. The Above and Beyond Achievement Award was created to recognize and reward these efforts.

Joanne Spalla



Glenn Meyers



Gary Venter

Over the last year, Joanne Spalla has made enormous contributions to the Leadership Development Committee. Through her research and collaboration with the American Chemical Society, she helped the committee reach its objective of creating the "CAS and You," a 2010 CAS Spring Meeting concurrent session and Web presentation. She wrote the script and recruited speakers for the session designed to educate future committee chairs. "CAS and You" is available under the "Volunteer/Chair Resources" section of the CAS Web Site.

"Volunteering for the CAS gives me an opportunity to do things that I don't get to do in my regular work in a positive, supportive environment," Ms. Spalla said. "I almost feel guilty receiving an award for something that I find so personally enjoyable and rewarding."

The annual Matthew Rodermund Service Award recognizes two CAS members who have made significant volunteer contributions to the actuarial profession over the course of a career. The award was established in 1990 in honor of Mr. Rodermund's years of volunteer service to the CAS.

Glenn Meyers' CAS volunteer service began in 1982, and has continued for over 25 years. Like many new Fellows, he began his volunteer work with the Examination Committee, next giving years of service to the CAS education system. His contributions did not stop with the Admissions Committees. He has been active in a number of research and publications committees, including a long stint on the Committee on Theory of Risk. Through participation on task forces, committees, and working parties in the 1990s, he was actively involved in the development of dynamic financial analysis. Among his many contributions, Mr. Meyers has also served as a Regional Affiliate president and has written the *AR*'s "Brainstorms" column for many years.

Gary Venter has a long list of contributions to the CAS dating back almost 30 years. After becoming a Fellow in 1978, Mr. Venter joined the Exam Committee beginning a wide-ranging career of volunteering. He has chaired four different committees over the years, including the Committee on the Theory of Risk and the International Research Committee. Equally impressive is his 15-year run on the Committee on Review of Papers as a paper reviewer for the *Proceedings*. He has now moved on to the *Variance* Editorial Board, where he continues to add a strong influence on CAS publications. AR

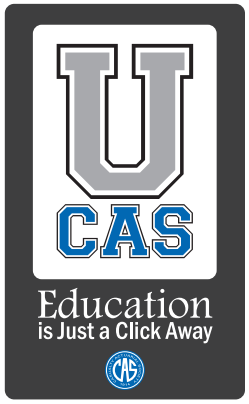
Please help the CAS recognize outstanding volunteers by nominating worthy members for the 2010 Above and Beyond Achievement Award or the Matthew Rodermund Service Award when invited to do so in May. If you have questions about the awards, please contact Matt Caruso (mcaruso@casact.org) at the CAS Office.

New UCAS Sessions Available

The University of CAS (UCAS) offers recorded sessions that were presented at CAS meetings and seminars. The recordings, which feature audio synched with PowerPoint presentations, are made available online through an easy-to-use interface. New sessions have recently been made available through UCAS.

Sessions from the 2010 Annual Meeting include:

- The Actuary as Leader and Professionalism: Challenges of Today's Chief Actuary*
- Business Interruption Insurance
- Financial Crisis — Update on its Impact and What Lies Ahead
- Finding the Right Synergy from GLMs and Machine Learning
- Solvency and Accounting Update
- Stochastic Loss Reserving — The Good, the Bad and the Ugly: Retrospective Tests for Stochastic Loss Reserve Formulas
- Usage-Based Insurance — An Update on the Legal and Regulatory Environment
- CAS Examination Process
- ERM Through the Business Cycle
- Does Casualty History Repeat Itself? Emerging Risks and Casualty Insurance
- CAS Annual Meeting Business Session*



* These sessions are available at no cost to all CAS members, not just those who attended the Annual Meeting.

Access to sessions is free for Annual Meeting attendees. This extends the value of event registration by allowing attendees to benefit from sessions they were not able to attend on-site. Access by individuals who did not attend the Annual Meeting can be purchased for $25 per session or $99 for all of the sessions.

Sessions are also available from the 2010 Government In Insurance Seminar, 2010 Casualty Loss Reserve Seminar (CLRS), recent Webinars, and many other events.

Visit the University of CAS at http://www.softconference.com/cas/ to learn more. At UCAS, education is just a click away! AR

25 Years Ago in the *Actuarial Review*

Serving our Society

By Walter Wright

The Actuarial Review of February 1986 printed large parts of President Stan Khury's November 1985 Presidential Address. The following excerpt is as important today and 25 years from now as it was then. We should all give it some thought.

Every talent we have, every ability we possess, every skill we have acquired is a gift. It is a gift entrusted to us to put to good use. Also, it is well to remember, whether we are consciously aware of it or not, that in the course of achieving every success we have experienced, someone helped us.

Today you belong to a healthy, vibrant, and forward-looking organization. In a very direct way, it has helped you. I'd like to ask you to ask yourselves the following question:

"Is the Casualty Actuarial Society better and stronger for having me as a member?"

If we are the fulfillment of the values of our founders and if we are to continue to keep the torch lit, your answer to this question must be a resounding yes. Your mission is to make sure the answer to this question will always be yes. AR

GLENN MEYERS

Predicting Loss Ratios with a Hierarchical Bayesian Model

At the recent CAS Annual Meeting in Washington, I saw concurrent session presentations by Peng Shi, Jim Guszcza, and Wayne Zhang that applied hierarchical Bayesian models to the problem of stochastic loss reserving.[1] These three presentations reinforced my opinion that that the time has come to include these models in loss reserving. To help the rest of us catch up, this column describes an example of a hierarchical Bayesian model in a simpler setting, that of estimating loss ratios. I will try to describe the example at a high level, with the details given in the R code that accompanies the Web version of this article.

Let's suppose we want to predict the loss ratio for next accident year, given observed loss ratios for the past 10 accident years. Most of us have observed loss ratios for many insurers: we have prior expectations for what are reasonable variations over time and would feel comfortable using this knowledge in developing a prior distribution of loss ratios to use in a Bayesian estimation exercise.

Over the years, we actuaries have developed models that describe the process risk that is particular to insurance. Also, in our collective experience, we have developed a good sense of how the parameters may vary over time.

One's first instinct might be to take what statisticians call the "naïve Bayes" approach and assign independent prior distributions to each parameter ELR_t, which represents the expected loss ratio for the accident year $t = 1, \ldots, 10$, and do a standard Bayesian analysis. But as many of us are aware, we have to contend with the underwriting cycle.

One way to deal with the underwriting cycle is to assume that the ELR_t parameters follow an $AR(1)$ model. Before proceeding, let's review some of the properties of this model. This model specifies that $ELR_t = b_0 + b_1 \bullet ELR_{t-1} + \varepsilon_t$, where each ε_t has a normal distribution with mean 0 and standard deviation σ. This model has a stationary time series if $|b_1| < 1$ with a long-term average of $\mu = b_0/(1-b_1)$. It can be demonstrated that the coefficient of correlation between ELR_t and ELR_{t+k} is equal to b_1^k.

Since my intuitive sense of values for μ is better than that for b_0, I did some algebra and chose to represent the $AR(1)$ model by the equation $ELR_t = \mu \bullet (1-b_1) + b_1 \bullet ELR_{t-1} + \varepsilon_t$.

For a given set of parameters $\{ELR_t\}$, b_1, μ and σ, let us select the following distributional form for our prior distribution:

$$p(\{ELR_t\}, b_1, \mu, \sigma) = \left(\prod_{t=2}^{10} \phi(ELR_t - \mu \bullet (1-b_1) - b_1 \bullet ELR_{t-1} \mid 0, \sigma)\right) \bullet f(b_1) \bullet g(\mu) \bullet h(\sigma)$$

Phi (ϕ) is the density function of the normal distribution with mean 0 and standard deviation σ. The variable f is a uniform (0,1) distribution, g is a gamma distribution with mean 0.65 and coefficient of variation equal 0.2, and h is a gamma distribution with mean 0.025 and coefficient of variation equal to 0.5. Since the distribution of the parameters of interest, $\{ELR_t\}$, is conditional on b_1, μ and σ, we call this a hierarchical Bayesian model. The high-level parameters, b_1, μ and σ, are often referred to as hyperparameters.

This prior distribution provides one way to describe correlation between the $\{ELR_t\}$ parameters.

The next step is to specify the likelihood of the losses given the $\{ELR_t\}$ parameters. In our example, the insurer writes \$50 million of premium annually. The likelihood of the observed losses, $\{x_t\}$, is given by $\prod_{t=1}^{10} c(x_t \mid ELR_t)$ where c is a gamma distribution with its mean equal to \$50 million times ELR_t and a coefficient of variation that decreases as a function of the premium for time t.

With the likelihood function of the data and the prior distribution of the parameters specified, I used the Metropolis-Hastings algorithm[2] to generate a sample of 10,000 sets of the parameters $\{\{ELR_t\}, b_1, \mu, \sigma\}$ to represent the posterior distribution. From this sample, I calculated the following statistics of interest:

[1] Papers related to Messers Gusczca's and Zhang's presentations are at the following links:
http://casact.org/pubs/forum/08fforum/7Guszcza.pdf and
http://www.actuaryzhang.com/publication/bayesianNonlinear.pdf.

[2] The Metropolis-Hastings algorithm is one of a large class of Markov-Chain Monte-Carlo (MCMC) methods that can generate sample parameter sets that represent the posterior distribution. See my "Brainstorms" column in the November 2009 issue of the *Actuarial Review* for an introduction to the Metropolis Hastings algorithm.

- E[ELR_t] for $t = 1,\ldots,10$.
- The 5th and the 95th percentile of ELR_t for $t = 1,\ldots,10$.

Figure 1 plots the above quantities in the gray lines to the left of the vertical line. For comparison, the observed loss ratios are plotted with the black dashed line.

Recall that the original problem was to predict the loss ratio for time $t = 11$. To do this, I calculated the quantity $ELR_{11} \equiv \mu \bullet (1-b_1) + b_1 \bullet ELR_{10} + \varepsilon_{11}$ for each parameter set in the sample. Figure 1 continues with the above statistics of interest for ELR_{11} to the right of the vertical line.

Note that each ELR_{11} in the sample provides an estimate of the mean loss ratio for accident year $t = 11$. A histogram of the ELR_{11}s in Figure 2 indicates the variability of the estimate. Also of interest is the greater variability of the outcomes. To get this, I simulated a loss ratio from a gamma distribution with mean ELR_{11} for each parameter set in the sample. A histogram of these loss ratios is in Figure 3. This concludes my example. Additional details can be obtained from the accompanying R code.

I now offer some discussion points about this example. First, the use of the $AR(1)$ model in standard time series analyses makes the assumption that the *data* satisfies the specified model. In the example above, I assumed that the *parameters*, $\{ELR_t\}$, followed those assumptions. Second, Figure 1 invites a comparison of the hierarchical Bayesian model with more conventional smoothing methods. My response to this assertion is that those who use smoothing methods often blur the distinction between process and parameter risk. Over the years, we actuaries have developed models that describe the process risk that is particular to insurance. Also, in our collective experience, we have developed a good sense of how the parameters may vary over time. This example shows how to make use of this knowledge in making our predictions. Finally, as Messers Shi, Guszcza, and Zhang are beginning to demonstrate, these methods can be applied to the more complicated models in loss reserving.

Figure 1 - Actual and Fitted Loss Ratios

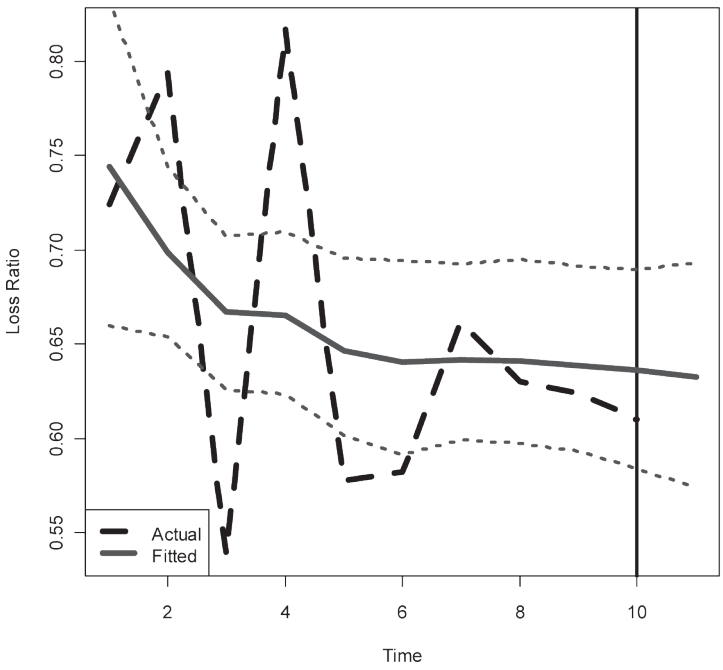


Figure 2 - Predictive Distribution of Estimates

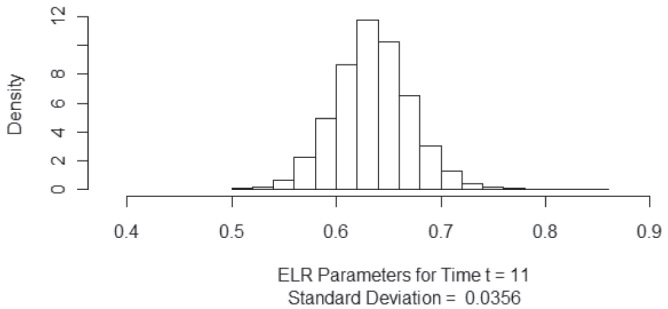
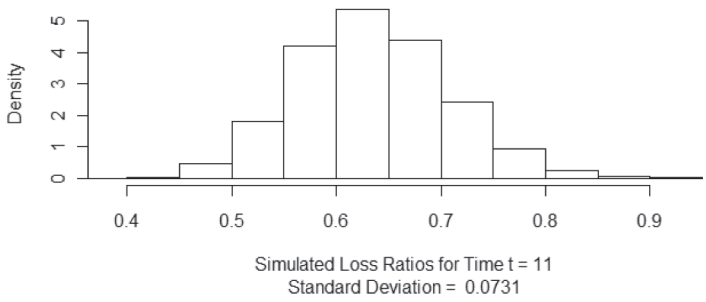


Figure 3 - Predictive Distribution of Outcomes



Don't Miss the 2011 CAS Spring Meeting in Palm Beach, FL!

Join the CAS in sunny Palm Beach, Florida, for sand, surf, and continuing education at the 2011 Spring Meeting! The CAS Spring Meeting will be held May 15-18 at The Breakers Hotel in Palm Beach, the legendary oceanfront resort that offers practically everything under the sun! The Spring Meeting will also present a dynamic program with a variety of educational opportunities.

This year's keynote speaker will be financial journalist Brian P. Sullivan. Mr. Sullivan served as an insurance reporter and editor at the *Journal of Commerce* and the *Philadelphia Inquirer,* editor in chief of the *Philadelphia Business Journal*, and managing editor of the *American Banker* before being named president of *American Banker/Bond Buyer Newsletters.*

In 1993 Mr. Sullivan formed Risk Information Inc. to produce specialized publications for the insurance industry. He launched *Auto Insurance Report,* a weekly, in 1993, and *Property Insurance Report,* a bi-weekly, in 1994. A speaker's bureau was added in 1997.

The CAS Spring Meeting will offer general sessions on the effect of social media on property and casualty insurance, the Florida insurance market, and international regulation. A fourth general session will feature a mock trial on professionalism issues where the audience will be the jury.

In addition to the general sessions, the Spring Meeting will offer over 30 concurrent sessions delving into reserve ranges, predictive modeling, trends, international issues, the financial crisis, risk management, regulation, the insurance cycle, workers compensation, auto, property, reinsurance, and business skills.

Combining tropical location with continuing education, this meeting will offer something for everyone. Explore Palm Beach's cultural venues and sample some of its 2,000 restaurants. Enjoy sporting activities like golfing on courses in the Florida sun and sport fishing on the Gulf Stream. Soak up the sun on 47 miles of picturesque beaches, and hike the wilds of the breathtaking natural reserves. With an average temperature of 78°, anytime is the perfect time to explore this city!

The Spring Meeting is a great opportunity for attendees to benefit from a first-rate educational program and to take time for networking and social events. Look for the brochure and registration information in the mail and on the CAS Web Site in the near future. AR

2011 RPM Seminar Set for New Orleans

Join the CAS in New Orleans from March 20-22 for the 2011 Ratemaking and Product Management Seminar! RPM promises to deliver over 50 different concurrent sessions and three preconference workshops on hot topics such as data management, underwriting, and predictive modeling.

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.

Keynote Speaker Announced

Neil Howe is a renowned authority on generations in America. He gives audiences powerful insights into who today's generations are, what motivates them as consumers and workers, and how they will shape our national future. Howe's broadly cyclical perspective—oriented around familiar generational life stories—will put "the long term" into a stunning yet personal focus that will not soon be forgotten.

A historian, economist, and demographer, Mr. Howe is a founding partner of the consulting firm LifeCourse Associates. He is a marketing, personnel, and government affairs consultant to corporate and nonprofit clients, and has spoken and written extensively on the collective personalities of today's generations and their impacts on America's future. He is also a recognized authority on global aging, long-term fiscal policy, and migration.

Registration is Open!

Register today at www.casact.org/education/RPM/2011. AR

Attend the 2011 ERM Symposium for the Latest on ERM Thinking and Practices

The ninth annual Enterprise Risk Management (ERM) Symposium continues its tradition as the premier global conference on ERM on March 14-16, 2011 at the Swissôtel Chicago.

Over 25 different concurrent sessions will be offered, headlined by these five general sessions:

- "Regulatory Reform—Convergence or Divergence in Systemic Risk, Risk Governance, Transparency, and Capital Change" will feature policy and regulatory leaders from various regulatory forums who will explore the directions and impacts of proposed regulatory reforms.
- "ERM: A 360 Degree View of Risks" will offer a candid and thought-provoking discussion on successes, challenges, and expectations of ERM from the perspectives of a board director, a CRO, a trading/investment manager, and a regulator.
- "Discussing the Need for ERM Standards of Practice and the Existence of Shared Risk Principles" will debate whether ERM standards and principles are necessary or desirable.
- "Country Risk Officer—A Role Needed Now More than Ever" will feature international experts who will consider the challenges and potential benefits of creating the role of country risk officer to champion and oversee the implementation of ERM throughout government entities.
- "Ask the Experts," the closing session, will offer the opportunity to sit down with risk management experts from the symposium's extended faculty as they answer attendees' questions about real-world problems.

Attendees can choose to come early for a full day of optional seminars on March 14 that will cater to specific areas of interest. Three seminars will be offered:

- ERM Implementation.
- Designing and Implementing Internal Capital Adequacy Assessment Process and Own Risk Self Assessment.
- Modern ERM: The New Risk Management Paradigm.

A separate registration fee is required to attend these seminars.

The Swissôtel Chicago, where precise and elegant Swiss service meets American energy, is the setting for the Symposium. The room rate for Symposium attendees is $159 per night, plus tax.

For more details, visit the ERM Symposium Web Site, www.ermsymposium.org/2011/, which has the complete list of educational sessions with descriptions and speakers.

Registration is now open and fees will increase after February 18, so register today! AR

Save the Date!

Reinsurance Seminar Slated for Philly in June

The 2011 CAS Seminar on Reinsurance will be held June 6-7, 2011 at the Doubletree Hotel in Philadelphia. Registration for the seminar will open in late March. Additional details will be available on the CAS Web Site. AR

MARTY ADLER

Saving the World from Asteroids

Nolan Asch is not only fascinated by asteroids, but also alarmed! He was first drawn to this subject when scientists accepted the theory that an asteroid caused the extinction of the dinosaurs and 85 percent of all species on earth at the end of the Cretaceous period 65 million years ago. He first became alarmed in 1994 when comet Shoemaker/Levy 9 crashed into Jupiter in 21 fragments, each one leaving either a fireball or a scar larger than the Earth.

Shortly afterward, in February 1996, NASA launched the Near-Earth Asteroid Rendezvous (NEAR). On June 27, 1997, the NEAR spacecraft made a spectacular 25-minute flyby of asteroid 253 Mathilde, which produced more than 500 images of a dark, crater-battered little world that dates to the beginning of the solar system. NEAR was the first of NASA's low-cost Discovery Missions and the first Discovery spacecraft to return scientific data from an encounter. The primary mission of NEAR was an encounter with asteroid 433 Eros in February 1999. A computer glitch forced reprogramming and on February 14, 2000, the NEAR spacecraft was successfully sent into orbit around Eros, becoming the first artificial satellite of an asteroid. Just over an hour later, the spacecraft took a picture from about 210 miles above the surface. After completing its mission to map Eros, NEAR landed on the surface of the asteroid. Data collected on descent, including the final returned picture acquired from 425 feet above the surface, allowed NEAR to accurately measure the size, shape, rotation rate, mass, and density of Eros. It showed four or five massive impact craters, indicating that asteroids often collide with each other. This huge success helped drive the funding of future missions.

What are the implications regarding Earth? There are many Near Earth Objects (NEOs)—asteroids or comets—that will come within about 30 million miles of Earth's orbit. Robert Irion, in *Smithsonian* magazine's 40th edition, says: "If a 100-foot-wide asteroid hit Earth, the shock wave from its explosion in the atmosphere could flatten trees and kill every large animal for hundreds of square miles." That's just what happened in 1908 at Tunguska, Siberia. Nolan's research says that the odds are roughly one in 10 that such a blast will occur in the next 40 years. An asteroid 500 feet across could destroy a metropolitan area or spawn massive tsunamis. Those impacts occur every 30,000 years, on average. Every day, 65 tons of asteroid dust settles on the earth's surface. In September, two asteroids passed closer to the earth than the moon.

Ten years ago, based on only about 50 NEOs greater than one kilometer in diameter that had been discovered, space scientists estimated that there were actually about 1,000 NEOs. According to Nolan, scientists estimate that there are potentially 850 "Extinction Level Events" (ELEs) out there. The asteroid Apophis may be the best example. It was discovered in 2004. It will orbit the Sun three times and, in 2029, if conditions are just right, it will head for the planet Earth with an ELE impact in 2036. Nolan reports that at the height of the panic surrounding it, many astronomers put the odds of impact between 1 in 17 and 1 in 35, and that now those odds are much lower. Nolan believes that impacts happen much more often than even today's scientists believe. The focus today has shifted from giant extinction size asteroids to the estimated 50,000 smaller "city killers" like Tunguska in 1908, Chicago/Peshtigo in 1871, an impact in Brazil in 1937, and in Siberia again in 1947. The Catalina Sky Survey alone has found about 2,500 NEOs in the past decade. In theory, if we can detect an asteroid or comet headed toward Earth early enough, we can modify its path to avoid a collision.

That theory was put to the test in the Deep Impact mission. On July 4, 2005, Deep Impact was launched with the mission of firing an impactor at comet Tempel 1, changing position, and then photographing all relevant data regarding the force of the impact, size, and demographics of the crater, and the actual deflection achieved. Amazingly, every aspect went off perfectly. So, if the future of the human race is reduced to the success of "one deflection shot," we now know we have done so once before.

After Shoemaker/Levy 9, Nolan saw a "parade" of the world's leading scientists descend on Congress during 1994-98, passionately testify, and get ignored. He then became very alarmed and decided to lobby Congress himself. Not surprisingly, he learned that getting the ear of a member of Congress required a campaign contribution. He got entrée to senators by personally contributing $5,000 to the Senate Republican Inner Circle. For this he and other contributors were wined and dined at the best K Street restaurants, but he got no action on his concerns.

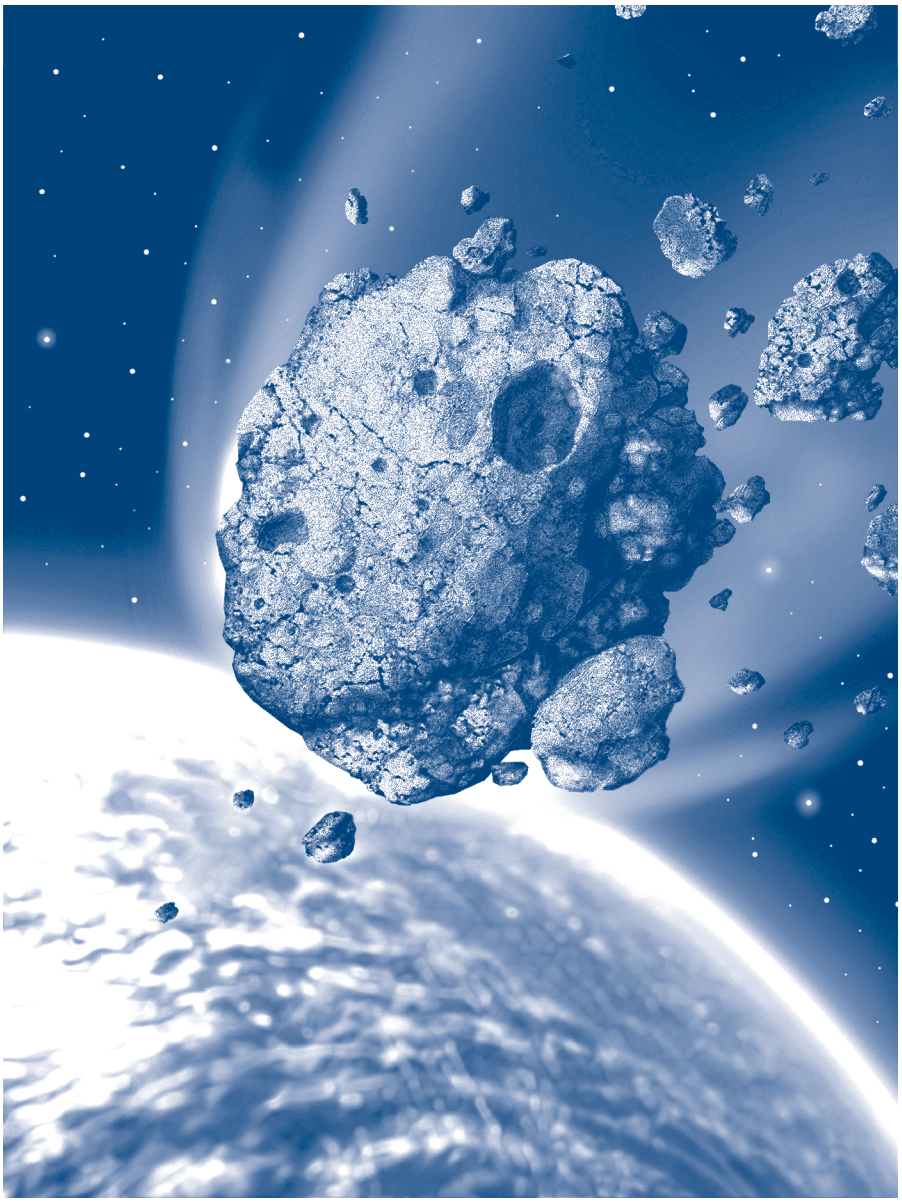
Nolan communicates monthly with scientists at the cutting edge of the field of space through e-mails and phone calls. Among them are Dr. Steve Pravdo, project manager for the Near-Earth Asteroid Tracking System at NASA's Jet Propulsion Laboratory in California; Clark R. Chapman, senior scientist, Southwest Research Institute, Department of Space Studies, Boulder CO; and David H. Levy, president of the National Sharing the Sky Foundation, a science writer most famous for his co-discovery in 1993 of Comet

To learn more, Nolan Asch recommends the following Web sites:

www.spacepolitics.com
This site gives you some "inside info" on the battle for NASA funds.

www.fair-society.org
This is a non-profit entity that takes donations as little as 13 euros. Ninety-five percent of donations go directly into asteroid or comet projects. There is extreme transparency as to exactly which projects you are supporting and how they progress over time.

www.nasa.gov
This site is a wealth of information about anything space-related.



Shoemaker-Levy 9. Nolan had just started a correspondence with Gene Shoemaker, the other co-discoverer of the 1993 comet, shortly before Shoemaker's fatal car crash in Australia.

Nolan asks the scientists what projects would deliver the most "bang for the buck." He regularly contacts prominent members of Congress via e-mails and telephone, lobbying to increase the NASA funding for such projects. He devotes about 100 hours a year to these activities. "Frankly, without a significant monetary contribution it is almost impossible to get face time," says Nolan, but that they do take his calls.

Currently, Nolan is lobbying for the 2015 (formerly 2014) projected launch date of the James W. Webb Space Telescope (JWST), the replacement for Hubble. (Webb was NASA's administrator from 1961-1968.) JWST has had major cost overruns, most recently going from $5B to $6.5B. It was originally estimated to cost under $2B. In this fiscal crisis, the entire project is in serious trouble. JWST would perform many functions, including the study of black holes and, as a minor goal, the detection of asteroids. At present there are only 11 telescopes in the world that actively search for asteroids, and those only do it part time.

Nolan Asch is a principal in the reinsurance division of Insurance Services Office, Inc. AR

Two CAS Fellows Named "Women to Watch" by *Business Insurance*

CAS members Debra McClenahan and Elizabeth Haar were among 50 women on a prestigious list of insurance professionals deemed "Women to Watch" in the December issue of *Business Insurance*.

Debra McClenahan, a managing director at Ryan Specialty Group, has worked on several CAS committees including the Continuing Education and the Examination Committees. Last year she co-founded Ryan Specialty Group subsidiary ThinkRisk, a managing general underwriter (MGU) agency specializing in errors and omissions insurance in media, advertising, technology, privacy, and network security.

The CAS followed up with Debra McClenahan and asked how her actuarial background and training have helped her to advance to where she is today. "First, it thoroughly grounded me in the financial/technical aspects of the insurance and reinsurance business, which has been invaluable when applied in the underwriting and marketing arenas," said Ms. McClenahan. "Second, it has taught me the value of perseverance—the actuarial examination process has been the business equivalent of swinging a weighted bat before stepping up to the plate. Third, starting out in the actuarial department of an insurance company provided the opportunity to immediately interact with some of the brightest and most creative people in the business. Finally, the demand for casualty actuaries during my career has made it easier for me to be judged solely on my merits. The actuarial profession doesn't know the meaning of 'glass ceiling.'"

"The actuarial profession doesn't know the meaning of 'glass ceiling.'"
—Debra McClenahan

Debra McClenahan

Elizabeth Haar

As president and CEO of Accident Fund Holdings Inc., Elizabeth Haar oversees a rapidly expanding workers compensation insurer. Since Ms. Haar was named president and CEO in 2009, Accident Fund Holdings has nearly doubled in size and is expanding to several new states.

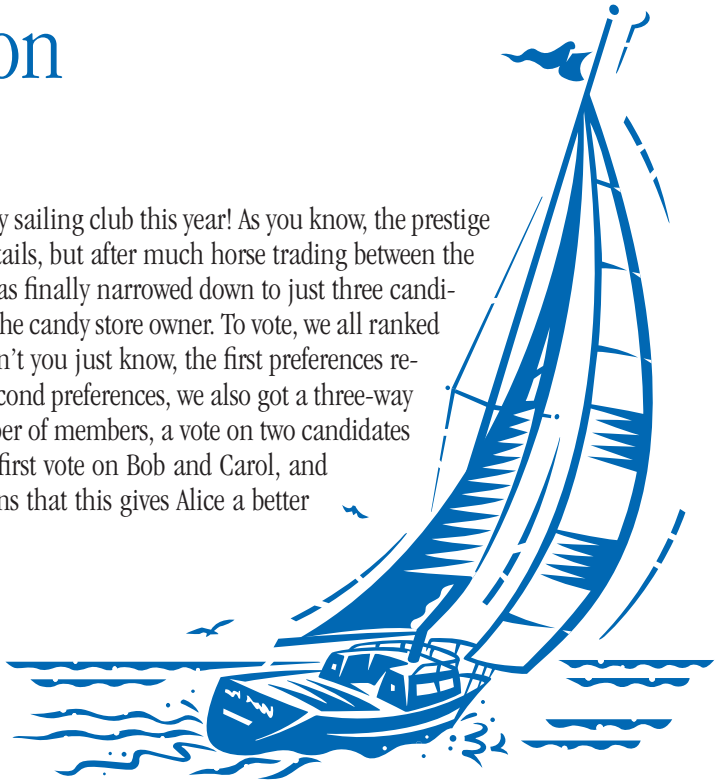
Speaking to *Business Insurance,* Ms. Haar described the counsel of Roy Westran, former president of Citizens Insurance, as some of the best professional advice she's ever received. Mr. Westran told her, "You always have to care about the business and be good at what you do, but you always have to remember why things are working and to be grateful for that." Mr. Westran communicated that this gratitude extends to the workforce, agents, and policyholders.

"I have always found that to be very good advice because, as we all know, you can't do anything in this world alone," said Ms. Haar.

Both reader nominations and *Business Insurance* staff input were used in creating the list.

To view the full articles online visit www.businessinsurance.com/women2010. AR

Sailing Club Election



It seems that everybody wants to be Commodore of my sailing club this year! As you know, the prestige is just beyond description. I'll spare you the gory details, but after much horse trading between the dinghy sailors and the social members, the ballot was finally narrowed down to just three candidates—Alice the actuary, Bob the barber, and Carol the candy store owner. To vote, we all ranked these three candidates in order of preference. Well, wouldn't you just know, the first preferences resulted in an exact three-way tie. When we looked at the second preferences, we also got a three-way tie! Alice observed that because the club has an odd number of members, a vote on two candidates cannot end in a tie. She graciously offered that the club first vote on Bob and Carol, and she would face the winner of that contest. Carol complains that this gives Alice a better chance of winning than she or Bob. Is Carol right?

Four Points, Two Distances

The puzzlement was to find the number of ways to arrange four points in a plane so that there are exactly two possible distances between pairs of points. We said that arrangements that are rotations, expansions, or contractions of each other are considered the same.

Tom Struppeck was the first to find all six solutions where both distances are nonzero. Greg Cuzzi found an easy way to describe solutions—as points marking hours or minutes around the circumference of an analog clock, and the clock center. Here are the six solutions, starting with either hours or minutes, and then a verbal description. For example, "Hours 12, 3, 6, 9" mark four corners of a square.

1. Hours 12, 3, 6, 9—a square.
2. Hours 12, 2, 10, clock center—a rhombus composed of two equilateral triangles with a common base.
3. Hours 12, 4, 8, clock center—an equilateral triangle and its center (point of concurrency of medians).
4. Hours 5, 6, 7, clock center—an equilateral triangle ABC (center, 5, 7), and a point on the perpendicular bisector of BC at distance |AB| (= |BC| = |AC|) from A, on the opposite side of BC from A.
5. Hours 5, 7, 12, clock center—an equilateral triangle ABC (center, 5, 7), and a point on the perpendicular bisector of BC at distance |AB| from A, on the same side of BC as A.
6. Minutes 6, 18, 42, 54—four points of a regular pentagon (several solvers noted that the ratio of long to short distances is the Golden Ratio, $(1 + \sqrt{5})/2 = 1.618\ldots$).

To show that these are all of the solutions with nonzero distances, some trial and error is needed. It is not hard to see that the configuration has to contain either an equilateral triangle or there is a way to label the points A, B, C, D so that |AB| = |BC| = |CD|. To see this, consider any point; call it X. There are three distances from X to other points, and at most two values for these distances, so (at least) two must be the same. Say these are the distances to points Y and Z, so |XY| = |XZ|, and let the fourth point be W. If |YZ| = |XY|, then XYZ is an equilateral triangle. Otherwise, if either |YW| or |ZW| equals |XY|, by relabeling points appropriately we have |AB| = |BC| = |CD|. If neither |YW| nor |ZW| equals |XY|, then YZW is an equilateral triangle. From here it is not hard to see that the six solutions listed are all of the solutions.

Some solvers, with Greg Cuzzi being the first, pointed out that I did not prohibit one of the distances from being zero. This gives three more solutions—an equilateral triangle with a repeated point; two points at one location and two at another; three points at

It's a Puzzlement, page 21

New Fellows Admitted November 2010

Row 1, (left to right)*: Xuan Yang, Sandra Jean Callanan, Roselyn Mansa Abbiw-Jackson, John Stephen Bogaardt, Kai He, Erin Page Bellott, Elizabeth Mary Cashman, Jennifer L. Abel.*

Row 2, (left to right): *Christina Marie Boglarski, James Kelly Burns, Martin Birkenheier,* ***CAS President Roger M. Hayne,*** *Ting Yu, Matthew L. Antol, Aadil A. Ahmad.*

Row 3, (left to right): *Michael Beck, James Lee Flinn, Thomas R. Carroll, Desmond D. Andrews, William Dean Nussbaum, Timothy Steven Sallay.*

Row 1, (left to right): *Maja Dos Santos, Brian Chiarella, Hua (Grace) Dong, Craig R. Brophy, William Robinson Buck, Mei Dong, Susan R. Curtis, Karen Cathleen Crosby.*

Row 2, (left to right): *Christopher K. McCulloch, Jade D'Orsi, Dane Grand-Maison, Kristen Marie Gilpin,* ***CAS President Roger M. Hayne,*** *Michael Alan Donnelly, Jerome Dube, Kristen Gervais-Andrade.*

Row 3, (left to right): *Benjamin Ellis Crabtree, Amy Michele Fournier, Kathleen Jean Gunnery, Timothy David Conrad, Mark Allen Florenz, Gregory Matthew Fanoe, Rocklyn Tee Altshuler, Guillaume Chaput, Thomas Patrick Heise.*

Row 1, (left to right): *Kara Dawn Kemsley, Emilee Jean Kuhn, Jennifer Janae Jabben, Mohamad A. Hindawi, Paul Daniel Herzog, Brian Patrick Gill, Aaron Nicholas Hillebrandt, Paul Metzger.*

Row 2, (left to right): *Derek M. Lanoue, Benjamin Jerome Kimmons, Keith Patrick Kwiatkowski, Stephen Paul Heagy II,* ***CAS President Roger M. Hayne,*** *Tighe Christian Crovetti, Yuting Fan, Kevin Dennis Kelly.*

Row 3, (left to right): *Meyer Tedde Lehman, Camilo Mohipp, Derek Matthew Holmes, Jason Smith, Chia-Han (Jerry) Hsieh, Rebecca Heather Holnagel, Jonelle Leigh Graziani, Kristen Goodrich.*

New Fellows Admitted November 2010

Row 1, (left to right): *Cedric Pilon, Mathieu Picard, Krista Robinson, Reng Lin, Anthony Salido, Felix Patry, Akshar Girishbhai Gohil, Li Ling Lin.*

Row 2, (left to right): *Hui Wang, Victor Maximillian C. Victoriano, Kathleen Suzanne Ores Walsh, Guixiang Wang,* ***CAS President Roger M. Hayne,*** *Anna Marie Wetterhus, Karen A. Scott, Renée Marie McGovern.*

Row 3, (left to right): *Charles Robitaille, Paul T. Lintner, Michael John Crowe, Paul-Andre St-Georges, Cory Michael McNattin, Sebastien Vachon, Matthew Jay Westenberg, David E. Warneke Jr.*

Row 1, (left to right): *Xin Zhang, Adam James Troyer, Christopher Travis Swan, Thomas P. King, Yen-Chieh Tseng, Jeffrey W. Zheng, Yue Jeslyn Zhang, Guo Zhong.*

Row 2, (left to right): *Sharon Denise Mott, Lovely G. Puthenveetil, Thomas Michael Whitcomb,* ***CAS President Roger M. Hayne,*** *Wei Xie, Adam Kevin Niebrugge, Houston Hau-Shing Cheng.*

Row 3, (left to right): *Lin Xia, Stephanie Carrier, Olivier Lafrance, John Christopher Sadloske, Aaron Marshall Wilson, Todd Richard Rio, Ann Marie Smith, David Langlois.*

Row 1, (left to right): *Chantal Gagne, Gena P. Rhee, Ying Li, Lily Giraldo, Jonathan Matthew Schreck, Queenie Wing Kan Tsang, Yiping Stella Shi, Carol M. Sorenson.*

Row 2, (left to right): *Kevin D. Staples, Ryan David Hartman, Sebastien St-Louis,* ***CAS President Roger M. Hayne,*** *Etienne Thibault, Kelly Marie Mattheisz, Ashley Brooke Lowenberg.*

New Fellows not pictured: *Genevieve Boivin, Esperanza Borja, Krista Kathleen Bredenkamp, Jason A. Clark, Yijing Cui, Deanna Leigh Foster, Rebecca Elise Freitag, Nicholas B. Higgins, Enoch Stanley Hill, Penglin Huang, Bridget Laurel Jonsson, Kai Kang, So-Yeun Kim, William R. Kopcke, Wen Hung Leung, Shan Lin, Aaron Z. Potacki, Timothy J. Pratt, Roufat Raguimov, Andrew David Reid, John Daniel Renze, Linda Ling Hwee Sew, Michael Solomon, Nicholas Damien Thoemke, Min Wang, Hao Yang, Iva Yuan, Yanwei Zhang, Yu Zhang, Dong Zheng.*

New Associates Admitted November 2010

Row 1, (left to right)*: Karen Kam On Chang, Dea Kondi, Mariana Radeva Kotzev, Kagabo E. Ngiruwonsanga, Xiaohan Fang, Wenli Qiao, Robert Vincent Spencer, Timothy Delmar Sweetser.*

Row 2, (left to right): *Shayan Sen, Kam Sang So, Marcela Granados, Hoi Ning Tao,* ***CAS President Roger M. Hayne,*** *Benjamin James Lynch, Zachary M. Kramer, Yee Ting Lois She-Tom, Matthew E. May.*

Row 3, (left to right): *Easter H. Namkung, Christopher Timothy Rhodes, Molly Catherine Ingoldsby, Nicholas Joseph LaPenta, Jeffrey Grant Kinsey, Scott P. Key, Jason D. Stubbs, Ronald S. Rees.*

Row 1, (left to right): *Xiangyu Cheng, Qi Huang, Dara Marlene Seidler, Jennifer L. Nicklay, Thomas Samuel Lauren, Eva M. Suto, David Christian Beek, Alvin Kwong.*

Row 2, (left to right): *Phillip F. Schiavone, Michael Bordeleau-Tassile, Yali Li, Keyang Luo,* ***CAS President Roger M. Hayne,*** *Patrick Timothy Hyland, Christopher B. Martin, Jing Li.*

Row 3, (left to right): *Ronald S. Lettofsky, Chien Che Huang, Brett E. Myers, Christopher Allard, Steven M. Kendrick, Shannon M. Katzmayr, Mallika Kasturirangan, Courtney L. Lehman.*

Row 1, (left to right): *Oleg Voloshyn, Achraf Louitri, Dany Simard, Jiafeng Sun, Monica Drew Noel Johnson, Justin Fritz, Rina Meng-Jie Wang, Daniel Joseph Kabala.*

Row 2, (left to right): *Liana Martuccio, Krystal A. Mathewson, Heidi Marie Holtti, Rongfang Ji,* ***CAS President Roger M. Hayne,*** *Ya Jia, Annie On Yee Wong, Gabriel John Silvasi, Michelle Lynn Iarkowski.*

Row 3, (left to right): *Rajesh Charles Thurairatnam, Andrew Soon-Yong Kwon, Dustin James Turner, Michael A. Henk, Michelle Lynne Humberd, Kevin M. Sullivan, Colleen M. Burroughs, Robert Henry Osicki.*

New Associates Admitted November 2010

Row 1, (left to right): *Matthew Richard Duke, Gordon Hamilton Hines, Allison Marie Marra, David S. Harville, Darren Russell Weidner, James Daniel Hodge, Xianfang Liu, Peter A. McNamara.*

Row 2, (left to right): *Darci Rae Earhart, Joel Christopher Griffith, Rebecca Wing Yee Chow, Cristina Ravineala, Kathryn Marie Rokosz,* ***CAS President Roger M. Hayne,*** *Elizabeth M. Mauro, Amy Beth Green Sayegh, David Govonlu.*

Row 3, (left to right): *Minesh Kumar Patel, Christopher Don Maloy, Laura A. Stevens, Alexander Robert Rosteck, Anthony M. Milano, Dede Amadou M. Ba, Kevin A. Groom, Ray Yau Kui Ho.*

Row 1, (left to right): *Keli E. Haravitch, Heidi Joy Sullivan, Eric J. Lam, Brent R. Gray, TJ Clinch, Jing Meng, Denise Susan Di Renzo, Lynda Ming Hui Lim.*

Row 2, (left to right): *Peter Kingsley Robson, Isaac Lee, John M. Gilbert,* ***CAS President Roger M. Hayne,*** *Jennifer Lee Beers, Taralyn Slusarski, Mary Elizabeth Daly, Lauren Barozie.*

Row 3, (left to right): *Adam Michael Gerdes, Yanqing Li, Kevin Hughes, Moshe Kofman, Richard Garvin Day, Brandon Lee Basken, Michael Scot Young, Christopher J. Enlund.*

Row 1, (left to right): *Amanda E. Popham, Ashley S. Pistole, Radost Roumenova Wenman, Qing Janet Wang, Andrew William Maxfield, Kyle Arthur McDermott, Yuan Li, Qiong Wei.*

Row 2, (left to right): *Paul Pelock, Andrew Vega, Brandon John Buss, Yi Feng,* ***CAS President Roger M. Hayne,*** *Caroline Emily Cygnar, Xiaowei Sun, Anna Liu, Daniel J. Gieske.*

Row 3, (left to right): *Li Zeng, Elizabeth Asher Sanders, Brett Andrew Saternus, Michael Robert Scarpitti, Wade Daniluk, Michael J. Wittmann, Adam B. Tyner.*

New Associates Admitted November 2010

Row 1, (left to right)*: Liqing Yang, Joshua David Feldman, Peter Wright Quackenbush, John Paul Stonestreet, David C. Fairchild, Lela K. Patrik, Xiaobin Cao, Jin Wang.*

Row 2, (left to right): *Karl Veilleux, Claude Nadeau, Michael Steven Goldman, Wei Gao,* ***CAS President Roger M. Hayne,*** *Pascal Vincent, Gregory Vincent Martain, Bo Yan, Colleen A. Cornell.*

Row 3, (left to right): *Cheryl Lynn Roberts, Audrey Lynn Thompson, Samantha M. Taylor, Cong Wang, Eric Chan, Simon Tam, Zachery Michael Ziegler, Phillip Charles Cooper, Vincent Coulombe.*

Row 1, (left to right): *Itayi Walter Charakupa, Minggiong Chen, Michaela Porter, Alyssa Thao, Joseph John Stierman, Cameron Ross Thomas, Caitlin E. Tatarzyn, Alison Marie Fiel.*

Row 2, (left to right): *Ryan Bransford Thomas, Christina Contento, Andrew M. Cheng, Michael Rice Cenzer,* ***CAS President Roger M. Hayne,*** *Gabriel T. Coon, Kelly Ann Bellitti, Grace D. Cabading.*

Row 1, (left to right): *Ryan L. Arends, Kuanshuan Helen Tai, Steven C. Lin, Matthew Eric Petro, Kyle W. Tompkins, Elizabeth A. Arsenault, Alice Cheng, Xiao-shu Su.*

Row 2, (left to right): *George M. Belokas, Zachary Ballweg, David Burack, Lin Xing,* ***CAS President Roger M. Hayne****, Scott Nelson Applequist, Benjamin James Villnow, Peter F. Soulen.*

New Associates not pictured: *Scott Morgan Allen, Wendy Alonso, Hannah Michelle Butler, William R. Carbone, Eric Daniel Cathelyn, Ramkrishna Chatterjee, Som Chatterjee, Cynthia Rachel Cooper, Remi Crevier, Craig C. Davis, Bo Dong, Kimberly M. Dorani, Christine A. Doyle, Michael Kieth Edison, Robert J. Erhardt, Michael Scott Foulke, Yifan Fu, Yun Gao, Adam Baron Hirsch, David R. Iverson, Laura S. Marin, Sikander Shiraz Nazerali, Andrew S. Niehus, Yvonne Naa Korkor Palm, Glen Michael Patashnick, Justin Taylor Ranney, Adam Lee Rich, Amara Kamanu Robbins, Kirsten M. Singer, Sean Patrick Sullivan, Marquis Jacob Varghese, Chuan Yan.*

CAS to Address ACAS Rights

Proposed Constitution and Bylaws Amendments Slated for 2011 Election

During its September 2010 meeting, the CAS Board of Directors charged the Executive Council with preparing proposed changes to the CAS Constitution and Bylaws that would:

- Give Associates the right to vote either upon attainment of Fellowship or five years after they are recognized as Associates, whichever occurs first.
- Allow all voting members to be eligible to be elected members of the CAS Board.

The board action is in response to recommendations from the Task Force on Associates Rights, which was formed in 2009 based on member concerns expressed in the 2008 Quinquennial Membership Survey. The task force was charged with evaluating how best to ensure fair representation of Associates within the CAS, with consideration to voting rights and opportunities for involvement.

The task force considered a number of issues that guided its decision that the rights of Associates should be expanded. These include:

- Current and historical sizes of the Associate population, including the number of Associates who have stopped taking exams and are not expected to achieve Fellowship (i.e., Career Associates).
- Significant contributions by Associates to the CAS and the actuarial profession.
- Lack of representation within the CAS for Associates despite paying full dues.

The complete report of the Task Force on Associate Rights is available at http://www.casact.org/about/reports/.

Wording changes to the CAS Constitution and Bylaws that would articulate the expanded rights of Associates will be published in spring 2011. In order to be adopted, the proposed changes will require an affirmative vote of 10% of the Fellows or two-thirds of the Fellows voting, whichever is greater. AR

It's a Puzzlement, From page 15

one location and one point at another.

David Oakden observes that other solutions are possible in spherical, hyperbolic, or projective geometries. Tom Struppeck noted that on the sphere you get some more configurations, such as the vertices equilateral of an equilateral triangle in the northern hemisphere with centroid at the north pole, along with the south pole as a fourth point. Nathan Babcock asks, "If I take a triangular pyramid with me on my next business trip, will the four corners be a qualifying arrangement of points in a plane?"

David Uhland adds (assuming only nonzero distances):

- There is no way to arrange four distinct points such that they are all equidistant.
- There is one (and only one) way to arrange five points in a plane such that there are only two distances between pairs of points, namely the vertices of a regular pentagon.
- There is no way to arrange six distinct points such that there are only two distances between pairs. You can see this by imagining that such an arrangement exists. Then by removing any one of the points, you'd be left with five points with two distances. But by the previous bullet point, these five points must be the vertices of a pentagon. This is a contradiction because there is no way to arrange six points in a plane such that any group of five points forms a pentagon.
- Six distinct points can be arranged such that they have three distances between pairs of points. (David and I have found seven ways and we think there must be more.)
- Seven distinct points can be arranged so that they have three distances between pairs of points.
- In general, N points can be arranged so that the number of different distances between points is the largest integer less than or equal to $N/2$. For example, the vertices of a regular nonagon define four distances.

Others submitting solutions were Don Behan, Eric Savage, John Herder, John Jansen, Rob Kahn, Damon Raben, Steffen Siegel, Bryan Starke, Rob Thomas, and Chad Wilson. AR

Committee Seeks to Develop CAS Future Leaders

By Deborah Rosenberg, Member, CAS Leadership Development Committee

In 2014 the CAS will celebrate its first centennial. Over this time period the CAS has grown in many ways. It has extended its areas of professional expertise well beyond its original focus on workers compensation insurance. It has expanded its vision beyond that of national concern to the international arena. Its membership has also grown significantly. The CAS is no longer a small, collegial group of individuals who all know one another.

As the CAS has matured, it has developed several unique characteristics, the foremost of which is its high level of volunteerism. With the assistance of the CAS office staff, the Society functions almost exclusively by the efforts of its member volunteers. This is not only a unique feature of the CAS but one of its core strengths in that volunteers have the opportunity to meet and interact with many other CAS members and to get involved in a variety of projects that they would not be exposed to otherwise. The CAS benefits from the dedication and knowledge of its diverse membership.

Because of its growth in size and scope, the CAS decided that it was important to have a more formal approach of recognizing and developing its future leaders. Two years ago the CAS Leadership Development Committee was formed and charged with "implementing the 'Leadership Development Program' through which potential leaders will be identified and development plans for their progress will be formulated and tracked." The committee, which reports directly to the CAS Board of Directors, to date has focused on the following initiatives:

- **Inventory of Knowledge and Skills Expectations.** This list is designed to identify specific knowledge and skills expectations for each level of CAS leadership including committee chair, vice presidents, board members, presidents elect, and presidents. The Inventory is available online at www.casact.org/cms/files/Inventory.pdf.
- **Leadership Development Training.** The committee has partnered with the American Chemical Society (ACS) to provide training sessions on engaging and motivating volunteers. The sessions are titled "Leading without Authority" and "Engaging and Motivating Volunteers." The ACS program was tailored to an actuarial audience and received very positive feedback from a trial run of volunteers who participated in the inaugural program.
- **The CAS and You.** The committee identified a need to develop instruction about the internal workings of the CAS to supplement other training opportunities. The first such module, "The CAS & You: A Resource for New Leaders," located at www.softconference.com/cas/sessionDetail.asp?SID=214616, was presented at the 2010 Spring Meeting and featured veteran CAS leaders explaining the role of chairs in accomplishing the CAS's operational and strategic objectives. A second module, "The CAS & You for New Members," will debut at the 2011 CAS Spring Meeting.

The committee has also recently expanded its roster to include representation from more recent CAS members.

In order to perpetuate the volunteer culture of the CAS, there needs to be a formal process in place to hand that legacy down to future generations. This CAS Leadership Development Committee is a first step in realizing this vital goal. AR

Documentation: How Good Should it Get?

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.

David Dataminer, FCAS, MAAA, works for Giant Insurance Company and has been performing predictive modeling studies for a line of business for which this analysis has not been done before. As with many predictive modeling exercises, David has tried numerous combinations of factors and models in establishing his final selected model and his resulting conclusions. David is aware of his professional requirements to sufficiently document his work product. He must do this for his principal, and such that another credentialed actuary is able to follow and understand his work. David is very busy and has only limited time to devote to completion of the project. He has met with resistance to extending the project time to complete the detailed documentation as his principal needs the results as soon as possible.

How much should David document and how thorough should that documentation be?

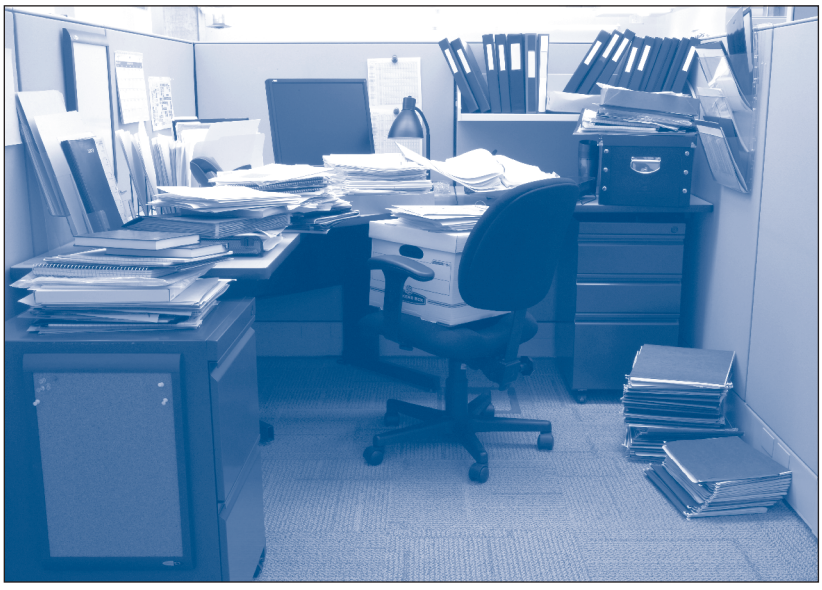
Answer #1

David needs to write a very detailed report citing the specific models he tested and all of the variables included in his models. He needs to include a copy of the documented computer code and spreadsheets underlying his final results. He should document why he rejected some factors and models while including others in his analysis, and document them in a way that ensures he has complied with all Actuarial Standards of Practice. In his files, he should include all of the data provided for his study and all backup material for each of the avenues that he explored through his analysis. David needs to override his management's insistence that his documentation should only be done if there is sufficient time.

Answer #2

With the amount of data involved in a predictive modeling analysis, the number of alternative models and the overwhelming task that would be required to document every avenue that was explored, David should take a more practical approach to his documentation. In his report, David should discuss the most critical variables to his selected model, their importance to results, and the sensitivity of each variable to the overall results. He should incorporate a discussion regarding the rejected factors, particularly those that his principal or another actuary might think are natural drivers in the analysis.

David can distinguish between the documentation necessary to explain the conclusions to the principal, and that necessary to satisfy Standards of Practice. For the Standards of Practice documentation, David should consider documenting the approaches to the model that seemed most promising but were ultimately rejected, with a discussion of the reasons for rejecting these approaches. This documentation should be sufficient to guide future work and provide efficiencies for ongoing analyses. Because of the amount of data, only the location and identifiers of electronic files used should be kept in any paper files. AR



DARE to Like, Tweet, or Recommend CAS!

With over 5,000 records on actuarial science research in the property-casualty fields, including full-text journal articles and book citations, the **Database of Actuarial Research (DARE)** is an incredible resource. Everything that the CAS has published appears here, plus more from outside organizations.

Did you find an actuarial article in DARE helpful with some research you have done? **Recommend it** on the CAS Web Site for future visitors to see. Login today to start recommending!

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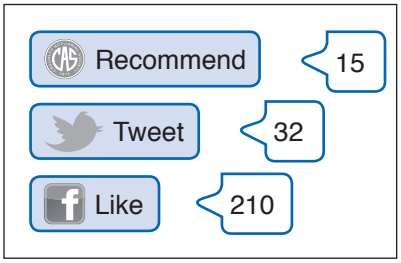

Connect with the CAS Career Center

Have you visited the CAS Career center lately? The CAS Career Center is a great resource for employers and job seekers to connect.

Job Seekers

- Post your resume anonymously.
- Search our job postings specific to actuarial science for entry or executive level jobs.
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- Pay only for the resumes that are a good match for your job opportunity! A fee is charged only when you decide to contact a candidate and the candidate indicates an interest in making a connection with you.
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We are uniquely qualified to help connect professional actuarial job seekers and employers, and currently have over 105 active job postings.

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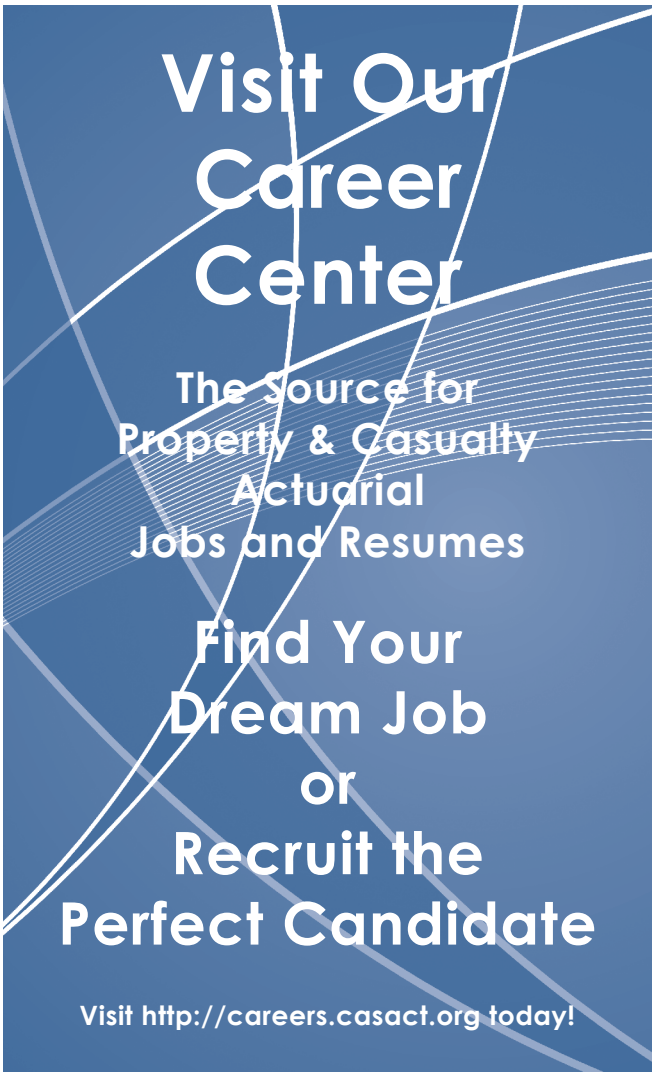


MICHAEL ERSEVIM

CAS to "Fine Tune" Basic Education Requirements

CAS Part 11.5 to be Added; Must be Passed by all Actuarial Candidates, ACAS, and FCAS

This quarter's "Humor Me" submission comes to us from Bill Lakins. Thanks Bill!

Just when you thought the syllabus was firmed up…

Yes, ladies and gentlemen, students, Associates and Fellows, the Part 11.5 must be passed by all actuaries wishing to obtain or remain Fellows of the CAS.

The entire exam will focus on portfolio analysis, (current methodology, initial analyses performed by the ancient Romans and any changes/enhancements from the Romans to the present).

Following are a few study hints for the new Part 11.5 exam.

- A surefire way to accumulate a small fortune in today's markets and climate is to invest a large fortune.
- Brush up on your studies by taking Sholom Feldblum's NEAS seminar. The seminar will provide summaries of the more difficult readings, practice exams, and insights, as well as five uninterrupted days away from your desk, cubicle, or office.
- Catch up on your reading for the exam. I have been promised originals of a large group of papers detailing the Romans' approach. I will be happy to send it to anyone who wires me enough postage at: Willy.everpass.part11.5@CAS.Exam in order to ship it from Europe to my home address. The postage should be divided equitably amongst all interested parties. The "postage loading" could be allocated down to the interested parties using any "acceptable" approach taught on the Part 9 syllabus. The good news is that these papers provide much of the relevant exam material. The bad news is that the "papers" are actually stone tablets or papyrus and are written in Latin. I think that things would work out the easiest for all involved if:

1) We could find someone to translate the tablets from Latin to English (if English isn't your native language, I'm sorry to say that you are on your own).
2) A CAS taskforce/committee could be formed to avoid duplication of efforts. I will volunteer to chair the committee. (Hey, it looks good on a resume!)

Final "Bad News"

- A rough estimate of pages to be covered in the readings is 8,000. Study early, study hard!
- A preliminary (and highly confidential) estimate of the pass rate determined by the CAS Board of Directors is rumored to be 10%.

Parting Shots/Conclusions

As (hopefully) all of you have surmised by now, none of the aforementioned changes will impact the examination structure. This entire writing is a hoax.

Looking at "the reality of the situation" makes me thankful for the examination/syllabus changes promulgated by the CAS.

I never thought I'd say that.

NEAL SCHMIDT

Discount Rate for Reserves Should Not be Increased for Illiquidity

There are many contentious issues that have arisen out of the various economic or fair value accounting proposals being considered by the IASB and the FASB, and under Solvency II.

One of these issues is the appropriate treatment of insurance liabilities. Given the absence of a robust secondary market for insurance liabilities, a model approach is proposed to estimate their fair value. The nominal ultimate value of insurance liabilities would be adjusted for risk and the time value of money. It has been proposed that the appropriate discount rate is the risk-free rate observable in the bond market, perhaps being U.S. Treasury yields for those reporting in U.S. dollars. Some have criticized this approach as too onerous. Those in the life and annuity business have expressed the greatest concern. They argue that a higher discount rate is appropriate.

One argument that seems to be gaining some traction is that the risk-free rate should be increased due to the illiquidity of insurance liabilities. The American Academy of Actuaries IFRS Task Force endorsed this approach in its response to the IASB Insurance Contracts Exposure Draft. After reading this response, I became concerned over this line of reasoning. I discussed it with a number of other senior actuaries and they were also puzzled by the illiquidity argument. As I investigated further, I found a number of other discussions of the topic that further convinced me that there was an absence of a clear rationale supporting this view.

What is meant by illiquidity? Liquidity measures the ability to promptly extinguish or transfer obligations or rights in exchange for cash without affecting its price. Liquidity increases with greater promptness and lesser effect on price.

There seem to be two distinct arguments presented in favor of an adjustment to the discount rate for the illiquidity of insurance liabilities.

Some have argued that insurance cash flows are illiquid due to the inability of the creditor to demand payment from the issuer and therefore should be discounted at a higher rate than the risk-free rate, which is derived from liquid securities. KPMG endorsed this view in its response to the IASB exposure draft. There are two problems I see with this viewpoint. First, the insurance policyholder is in no worse position in this regard than the holder of a U.S. Treasury bond. Neither can demand payment from the issuer. Second, liquidity is a two-sided issue. Both the issuer and the creditor are concerned with liquidity and focusing only on the creditor's position seems incomplete. Whichever party tries to transfer its position will suffer from its illiquidity. The liquidity of a U.S. Treasury bond is derived from the robust secondary market. The illiquidity of insurance liabilities relates to the lack of such a secondary market rather than the relationship between creditor and issuer.

Another argument is that some insurance cash flows are so stable that there is no advantage to funding them with liquid assets. If the company can capture an illiquidity premium from the marketplace it is adding little or no risk to its net position and can pass this on to its customers through lower prices. This view was presented to me by a member of the AAA IFRS Task Force. I pointed out to him that the argument seems independent of the liquidity of the insurance contract but dependent on the predictability of the liability cash flows. He conceded that I had a point and that in future discussions a focus on predictability might be more accurate.

It is generally agreed that there is an illiquidity premium in the bond market that is expressed as higher yields for more illiquid bonds. How should the illiquidity of insurance contracts affect the value of the associated liabilities? If one is making the argument that the lack of a liquid secondary market for insurance liabilities should lead to higher discount rates and lower market prices, it follows that the development of a robust secondary market would lead to lower discount rates and higher market prices. Does this seem plausible? Usually the development of a robust secondary market leads to greater efficiencies and the reduction of margins. I think the logical outcome would be greater liquidity results in lower market prices for insurance liabilities. It seems to make no sense to increase the surplus of an insurer because there is no secondary market for its liabilities and contend that if such a secondary market was to emerge it would result in a decrease in surplus.

The dialogue around appropriate discount rates is an important one. However, advocating higher discount rates to determine fair value due to the illiquidity of insurance liabilities is a flawed rationale and should not be supported by the actuarial community.

Neal Schmidt works for Platinum Re in New York City.

The Top Ten Casualty Actuarial Stories of 2010

By Michael Christian and Joseph Milicia

As in past years, we've surveyed various actuaries from the CAS to determine which news stories were the most important to the casualty actuarial profession in 2010. Some popular topics from prior years have remained at the forefront of actuaries' minds such as enterprise risk management, Solvency II, and the continuing soft market. These topics have been joined by current events in government and the latest catastrophes.

While no one story dominated the voting, the results of this year's survey divided the top 10 stories into three distinct groupings. The three highest scoring stories were separated by only a handful of points but were far above the fourth place story. Another drop-off was observed between the seventh and eighth place stories. The proximity of the scores within each of these three groupings shows that actuaries must focus on a variety of important issues.

Here's how the stories ranked:

10 The Impact of the Financial Crisis on P&C Insurers

Last year, concerns about the impact of the financial crisis and the subsequent recession ranked ninth on our top 10 list. One year later, the story has dropped one place to number 10 but is still an important issue for actuaries. The recession and the eventual recovery will have an impact on claim frequencies; this impact will vary by line of business. Actuaries must also be aware of the potential impact that an increase in inflation could have on claim severities and the runoff of reserves for long tailed-lines as the economy recovers.

9 IASB Changes its Guidelines for Solvency Monitoring

Although global accounting standards have not yet been developed, the IASB and FASB are collaborating in an attempt to standardize accounting for insurance contracts. Meanwhile, the European Union moves closer to establishing pan-European watchdog agencies. As Solvency II is set to take effect in Europe on January 1, 2013, and international standards converge, is the U.S. next for reform and possible federal solvency regulation? Actuaries must not only help prepare their companies to comply with accounting and regulatory changes but should also be an active voice in the discussion to determine what is best for the industry.

8 Credit Scoring

The debate over whether credit scoring should be used as a rating variable for insurance has been active for a long time. In 2010, the Maryland legislature rejected legislation that would have banned the use of credit scoring for the purpose of rating auto insurance. The U.S. House of Representatives' Subcommittee on Financial Institutions and Consumer Credit held debates in May where members of the industry defended the practice of using insurance scores. As actuaries, we must find rating variables that are both socially acceptable and have predictive accuracy.

7 Although Predictions of Active Hurricanes Making Landfall in the U.S. Did Not Come True, Global Catastrophe Losses for 2010 Are Significantly Higher Than in 2009

The first quarter of 2010 saw the highest catastrophe losses of any first quarter on record due to the Chilean Earthquake and Windstorm Xynthia. Even though no large hurricanes made landfall in the U.S., catastrophe losses totaled $36 billion in 2010, a 34% increase over 2009.[1] The New Zealand Earthquake and Deepwater Horizon (discussed further below) were particularly unique events. The New Zealand Earthquake, the most damaging earthquake in New Zealand in 80 years, uncovered a previously unknown fault line below Canterbury Plains. Initial estimates for the earthquake have proven insufficient and the quality of future projections will be a source of industry debate. Actuaries must maintain a global focus and be aware that a benign hurricane year does not mean that the catastrophe year will be benign.

6 Deepwater Horizon Oill Spill

The Deepwater Horizon oil spill was a truly unique

The Top Ten, page 28

[1] Swiss Re, "Preliminary estimates for 2010 from Swiss Re sigma show that natural catastrophes and man-made disasters caused economic losses of USD 222 billion and cost insurers USD 36 billion," November 30, 2010, http://www.swissre.com/media/media_information/Preliminary_2010_catastrophes_estimates_from_sigma.html (accessed January 21, 2011).

event due to both its political implications and the involvement of the government in overseeing the cleanup. Some predictions have a 20-year timescale for all of the litigation to settle. The claims are complicated in nature (e.g., involving the enforceability of hold harmless agreements) and the extreme scale makes this disaster very difficult to value. As a result of this, the offshore energy market may be unsettled for some time and has seen some hardening.

5 Growth of ERM

Enterprise risk management (ERM) has been a hot topic on this survey for the last six years. This year, ERM has fallen from the number one story to the fifth-highest ranked story. While insurers had mixed feelings about the performance of their ERM program during the financial crisis, 92% of respondents in a recent survey said that their ERM program has led them to implement key business changes.[2] As more companies develop ERM frameworks and economic capital modeling capabilities, actuaries will play a vital role in assisting their companies with model design and implementation.

4 Rating Agencies' Credibility Questioned

As a result of the financial crisis and the role rating agencies played in giving favorable ratings to sub-par securities, industry experts are questioning the credibility of traditional rating agencies. The NAIC has questioned insurance companies' reliance on ratings while firms such as KPMG and PwC are considering entering the rating business. The concentration of counterparty risk (e.g., with respect to reinsurance recoverables) has become a more prominent concern as high ratings are now viewed as less trustworthy than before the financial crisis. Actuaries can play a role in helping assess the concentration of counter-party risk within a company's ERM program.

3 Health Care Reform Bill

Last year, impending health care reform was also the third-ranked story on our top 10 listing. One of the Obama administration's top priorities, the health care overhaul law came to fruition this year. While the goal was to increase coverage without increasing cost, some predictions say that health care costs will continue to rise and that the reforms of Medicare included in the bill may be unsustainable. Actuaries must help quantify the cost of changes in regulation and help clarify the debate over the future of healthcare. New mandatory rebates, requiring loss ratios of at least 80% from individuals and small businesses and 85% for larger employers will provide challenges to actuaries pricing health insurance.[3] Health care reform could potentially have an effect on future medical inflation costs and the frequency of medical malpractice claims.

2 Solvency II Takes Effect January 1, 2013

Solvency II jumped four places to the number two position in this year's top 10 survey. As the effective date nears, insurers rush to prepare to meet the requirements. Companies have hired more actuaries to help ensure compliance. Will Solvency II cause more merger and acquisition activity? It's expected that the new requirements will require additional capital. Will prices rise as capacity is cut? Actuaries will have a significant impact as companies head towards compliance.

1 The Soft Market Continues: P&C Rates Fall For Both Insurers and Reinsurers

Despite some analysts' predictions, the soft market continued in 2010 as both property and casualty rates further declined. Across the industry, companies have been releasing reserves at a rate that S&P calls unsustainable. If reserve releases were to diminish, calendar year profitability for the industry would likely fall, potentially putting pressure on companies to raise rates in some lines. Actuaries must help companies understand the risks that they face if rates continue to decline and prepare companies to be in position to take advantage when the market hardens.

***

The accompanying chart summarizes our survey results. The authors compiled the survey and sent it to members of the CAS Board of Directors and Executive Council, current CAS committee chairs and vice-chairs, Regional Affiliate presidents, and others. We asked the participants to rank the top 10 stories and to write in any stories that we may have missed. Fifteen points were awarded for each first place vote decreasing to six points for a tenth place vote.

After all the responses were compiled, we compared the resulting top 10 stories to each individual's rankings to see which respondent had come closest to predicting the consensus top 10. This year's winner was Rial Simons, who selected eight of the top 10 stories correctly including 6 of the top 7.

We would like to thank everyone who participated in this year's survey. AR

[2] Towers Watson, "Global Insurance and Risk Management Survey: Financial Crisis Spotlights ERM," December 2010, http://www.towerswatson.com/research/3068# (accessed January 21, 2011).

[3] Johnson, Avery, "'Game Changer' Rule Looms For Health Insurers," *Wall Street Journal*, July 1, 2010, http://online.wsj.com/article/SB10001424052748703374104575336951608609446.html (accessed January 21, 2011).

How the Stories Ranked and Why

Rank	News Story	Actuarial Significance	Votes		
			Score	#1 or #2	Total
1	The soft market continues; P&C rates fall for both insurers and reinsurers.	As companies continue to release reserves, when will the cycle change and companies need to fatten up reserves? S&P warns that the pace of reserve release is not sustainable. Will this finally trigger price increases and the start of a hard market?	518	21	41
2	Solvency II takes effect January 1, 2013.	Could Solvency II cause more M&A activity? Will prices rise? Will capacity be cut? Solvency II may reduce current surplus by about two-thirds. Actuaries will have to assist companies to ensure they have proper data and enough capital to meet all the requirements.	491	13	41
3	Health care overhaul becomes law.	As the Obama administration reforms health care, actuaries must help to quantify the changes in regulation. New mandatory rebates will provide challenges to actuaries pricing health insurance.	478	16	40
4	Rating agencies' credibility is being questioned.	NAIC questions reliance on ratings. KPMG and PwC consider entering company rating. What role may actuaries play going forward in rating companies?	337	3	37
5	ERM continues to grow.	TW survey shows that while half of companies do not have ERM, it is becoming more widespread and increases the bottom line. Similarly, the interest in predictive modeling is also on the rise. Actuaries have a great opportunity to be more involved in ERM and to help companies design their models.	336	8	31
6	Deepwater Horizon oil spill occurs affecting offshore energy. Unique in its political implications and government involvement in overseeing the cleanup, the event may tighten insurance terms and increase prices.	As the losses approach $8B, the Deepwater Horizon oil spill presents a unique catastrophe for both insurers and the government. Pricing and underwriting as well as the demand for offshore energy insurance will be changing. As the government oversees the clean up, actuaries must help companies create a better estimate of the cost and constantly update assumptions to reflect new requirements.	321	8	29
7	A "strange" catastrophe year as predictions of active hurricanes in the Southeast U.S. don't come true, instead earthquakes are the largest catastrophes, the Deepwater Horizon oil spill happens, and windstorms occur globally.	Chile and Xynthia make the 1st quarter the largest catastrophe quarter ever. Even as no large hurricanes made landfall in the Southeast U.S., total catastrophe losses reach $36B, which is a 34% increase over 2009.	303	4	27
8	Credit scoring use is debated.	MD legislature rejects legislation that would have banned credit scoring for auto rating. U.S. House of Representatives debates if use should be allowed. NAIC creates model law for the regulation of credit scoring companies. Actuaries are tasked with finding rating variables that are both acceptable to the public and that have predictive accuracy. If credit scoring is banned, actuaries must find alternative classification variables.	272	4	27
9	As IASB changes its guidelines for solvency monitoring and the EU moves closer to pan-European watchdog agencies, is the U.S. next for solvency reform?	How will the U.S. be affected by changing international solvency standards? Will the U.S. use federal solvency monitoring? How should systematic risk be accounted for by regulators?	271	6	25
10	The financial crisis affects P&C insurers.	Due to the financial crisis, the insurance industry has experienced job loss. Insurer Chartis is set to layoff 2% of workers and WC claims increase. Actuaries must help quantify the effects of the crisis on claim costs and help companies remain profitable.	247	5	26

Actuarial Foundation Update

THE ACTUARIAL FOUNDATION

CAS Past-President Interviewed in Feature Story About the Foundation's "Building Your Future" Curriculum

CAS Past-President and Foundation Board member Robert F. Conger was interviewed as part of a magazine feature story about the Foundation's high school financial literacy curriculum "Building Your Future." In the article, which provides great insight into this award-winning curriculum, Mr. Conger shares a personal experience regarding a thank you note from a teacher who received his donated set of classroom materials.

To read the story and see why Conger says of the thank you note, "I was absolutely swept off my feet by the passion of the teacher," visit http://www.actuarialfoundation.org/publications/documents/AssociationForumBuildingYourFuture09-10.pdf.

There is a teacher waiting to thank you too! The Foundation has a waiting list of hundreds of high school teachers who are waiting for donated sets of "Building Your Future" for their students. Join your colleagues who are stepping up to make a difference in the financial lives of our nation's teens.

> *"I wholeheartedly support 'Building Your Future.' Knowing the profound impact these gifts have on the students and hearing the heartfelt gratitude of their teachers makes this program the most rewarding I have ever experienced." —Albert Beer, FCAS, MAAA*

View the waiting list of teachers and make your donation today at http://www.actuarialfoundation.org/donate/quench.shtml.

Foundation Publishes Guide to Help Actuaries Present at Middle Schools

Have you been asked to give a presentation during a career day or other event at a local middle school, but you think you will find it difficult to talk about the actuarial profession or engage the students? If so, that is about to change. The Actuarial Foundation has just published the *Classroom Guide for Actuaries* in alignment with *Solving the Unknown with Algebra*, the latest installment in the "Expect the Unexpected With Math®" series.

Written specifically for actuaries, this guide walks you through how to use the *Solving the Unknown with Algebra* materials and your math expertise to help middle school students see the real-world relevance of math and how it is used in the professional world.

The *Classroom Guide for Actuaries* includes:

- Tips for preparing for your first school visit.
- Specific instructions on presenting the *Solving the Unknown with Algebra* materials.
- Advice for communicating to students in grades 6-8.
- How to explain what an actuary is and does.
- Examples of the importance of math in other career fields.

Download the guide today at http://www.actuarialfoundation.org/programs/youth/actuary_guide.shtml.

Do You Know Someone Deserving of This Year's Wynn Kent Award?

The Foundation is accepting nominations for the 2011 Wynn Kent Public Communications Award. The deadline for entries is March 15. The Wynn Kent Public Communications award recognizes an actuary who has contributed to the public awareness of financial risk and the work product of the actuarial profession to the public in the fields of life, health, casualty, pension, or in other related areas.

Nominate a colleague today at http://www.actuarialfoundation.org/programs/actuarial/wynn_kent_award_submission.shtml.

2011-2012 Scholarships Now Available

Do you know someone who would be interested in one of the Foundation's four scholarships? The Foundation is now accepting applications for the Actuarial Diversity Scholarship, Caribbean Actuarial Scholarship, John Culver Wooddy Scholarship, and the Actuary of Tomorrow–Stuart A. Robertson Memorial Scholarship.

To learn about or apply for any of these scholarships, visit http://www.actuarialfoundation.org/programs/actuarial/scholarships.shtml.

Stay up to date with all the Foundation's activities at www.ActuarialFoundation.org. AR

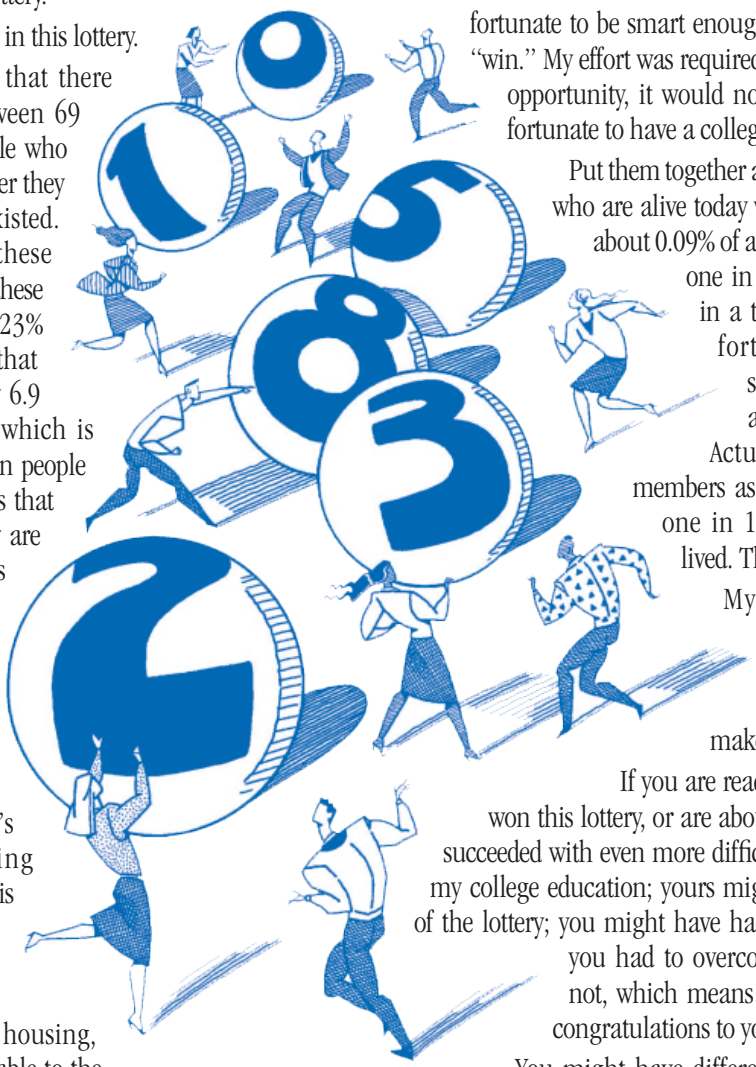
I Won the Lottery!

I won the lottery! The BIG one!

Many of us use the math behind lotteries to explain expected value and other probabilistic concepts. Here is how I see I won the lottery.

First, I did not buy a ticket in this lottery.

Demographers estimate that there have been somewhere between 69 billion and 110 billion people who have been born since whenever they consider people to have existed. (Realize, the average of these estimates is 89.5 billion, and these estimates are roughly +/-23% of the mean, for whatever that is worth.) There are roughly 6.9 billion people alive today, which is about 7.7% of the 89.5 billion people average (mean). That means that my odds of being alive today are about one in 13. That seems pretty fortunate for me.



Of the people in the world, the U.S. has about 308 million and Canada has about 34 million. Combined they make up about 5.0% of the world's current population. Having been born in a country that is reasonably safe and allows free movement within its borders at a time when indoor flush toilets, warm housing, and abundant food are available to the majority of its inhabitants as well as all the other advantages, I am, again, pretty fortunate.

In the U.S., about 24 percent of the adult population is estimated to have a bachelor's degree or higher—I am one of about four. But wait, you say, that is not chance, you worked for that. But the fact that I was even able to go to college and was fortunate to be smart enough to get through is in itself a "win." My effort was required, but, without the means and opportunity, it would not have happened. I feel very fortunate to have a college degree.

Put them together and Americans and Canadians who are alive today with college degrees represent about 0.09% of all the people who ever lived—one in a thousand! To be that one in a thousand makes me feel very fortunate and I haven't even started with the fact that I am a member of the Casualty Actuarial Society! (Okay, 5,417 members as of November 2010 represent one in 16,522,060 people who ever lived. The percent is tiny.)

My apologies to those who are reading this in other countries, I do not mean to slight you, I just want to make a point.

If you are reading this, you likely also have won this lottery, or are about to do so. Many of you have succeeded with even more difficult odds. My parents paid for my college education; yours might not have. I won that part of the lottery; you might have had to work for yours. Some of you had to overcome other barriers that I did not, which means you had to work harder. My congratulations to you for succeeding.

You might have different values for the numbers I have quoted, which is okay with me. As we start a new year, I just wanted to remind myself and you how fortunate we are.

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September 15-16, 2011
Casualty Loss Reserve Seminar
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November 6-9, 2011
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Chicago, IL, USA

IN MEMORIAM

Francis J. "Frank" Hope
(FCAS 1950) 1917-2010

Phillip J. Panther
(ACAS 2007) 1966-2010

Gordon L. Scott
(FCAS 1993) 1948-2010

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