

actuarialREVIEW

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The CAS: A **Global** Organization

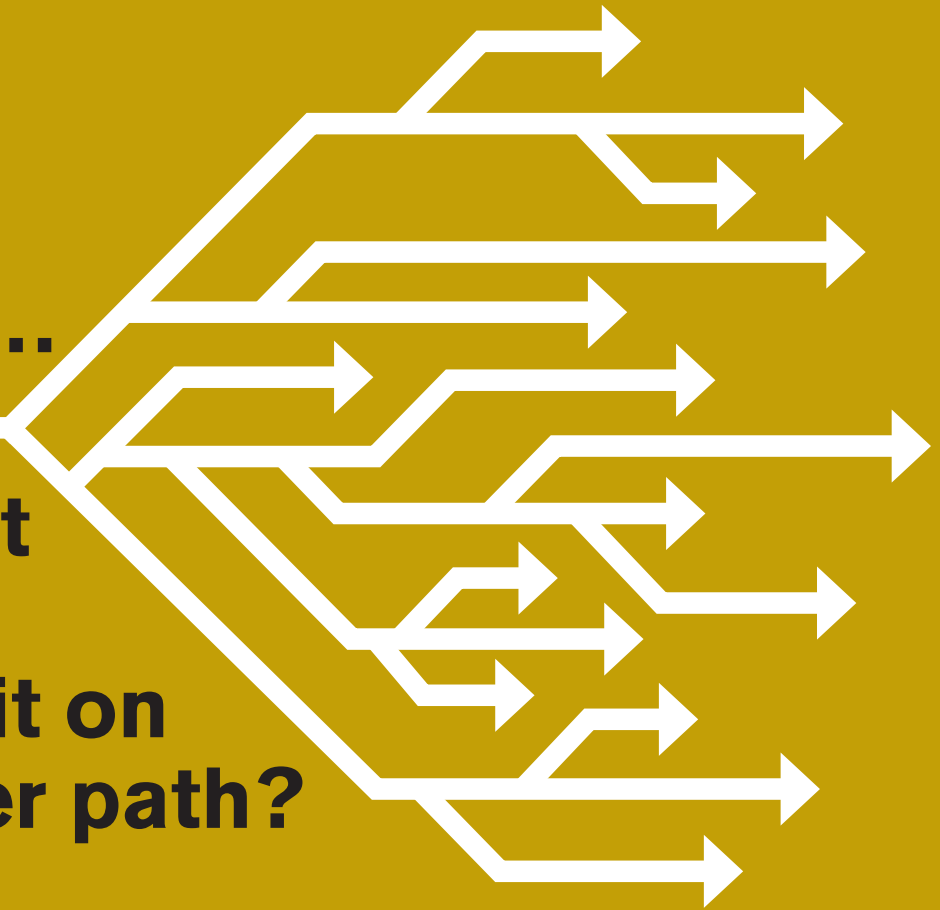


The International Issue

A Father and Son on Their Actuarial Careers ■ *In Remembrance of CAS Members*

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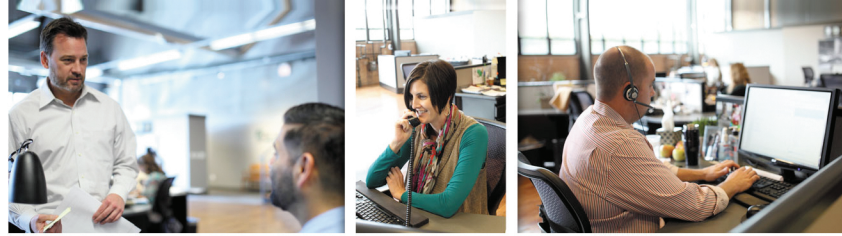
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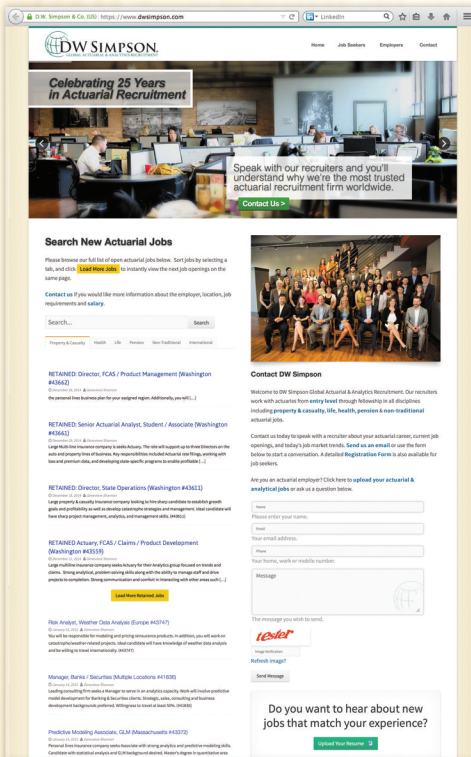
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Specialty Lines Actuary (Northeast, USA): National insurance company seeks FCAS to serve in a specialty lines pricing role. The position will be responsible for providing rate indication and profitability analysis to the product management team. Work will involve predictive modeling and various analytic functions. (#42780)

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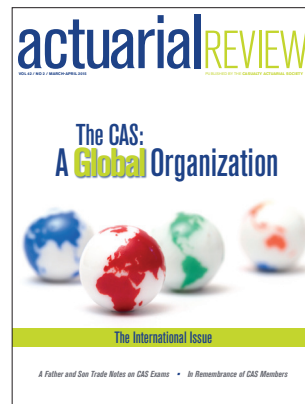
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Whether connecting expat members or offering professional education opportunities outside North America, the CAS strives to make global the new local.



What a Difference 40 Years Make

BY GROVER AND WIL EDIE

A father and sons swap stories on their shared profession.

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Through vignettes the *AR* pays tribute to CAS members who have passed.

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editor's NOTE By ELIZABETH SMITH

A Theme Emerges

While putting this issue together, a strong international theme became apparent from across various sections in the magazine. So

this issue we're mixing it up, grouping columns from different departments to showcase just some of the international efforts the CAS has undertaken for its current members and future members all over the world.

From Member News comes the Spotlight on CAS Staff, which features one of the newest CAS staff members, Michael Chou, and the new office in Hong Kong. Also from this department, CAS Member Marina Vaninsky is the subject of our member profile. Vaninsky works stateside but has lived in three continents. No doubt, this background helps her bring a global perspective to her work.

From former CAS International Ambassador Bob Conger's professional education outreach in Malaysia to our new Hong Kong office, the CAS is all over the world involving its growing number of members outside of North America. We also spotlight the CAS International Members Service Committee and how it is helping CAS members

in new lands adjust and network. The work of the IMSC is fertile ground for generating new ideas that intersect with and engage all CAS committees.

Lifetime Memories

Actuarial Review is proud to introduce a new column, "In Remembrance," which features short vignettes on the lives of CAS members who have recently passed.

Previously member obituaries were published in the *Proceedings*. Since the *Proceedings* has ceased print publication, however, member obituaries have not had a permanent home in a CAS publication. "In Remembrance" was created to fill this need. These obituaries can also be found on the CAS website at <http://goo.gl/jZ6yK7>.

In our second feature story, *AR* Editor in Chief Grover Edie and his son, Wil, recall their journeys into the actuarial profession. For the elder Edie, these were the days when Spam was just part of a Monty Python sketch.

Finally, Grover Edie's "In My Opinion" pays tribute to a special person who has helped many CAS members throughout the years. ●

Actuarial Review always welcomes story ideas from our readers. Please specify which department you intend for your item — Member News, Solve This, Professional Insight, Actuarial Expertise, etc.

SEND YOUR COMMENTS AND SUGGESTIONS TO:

Actuarial Review

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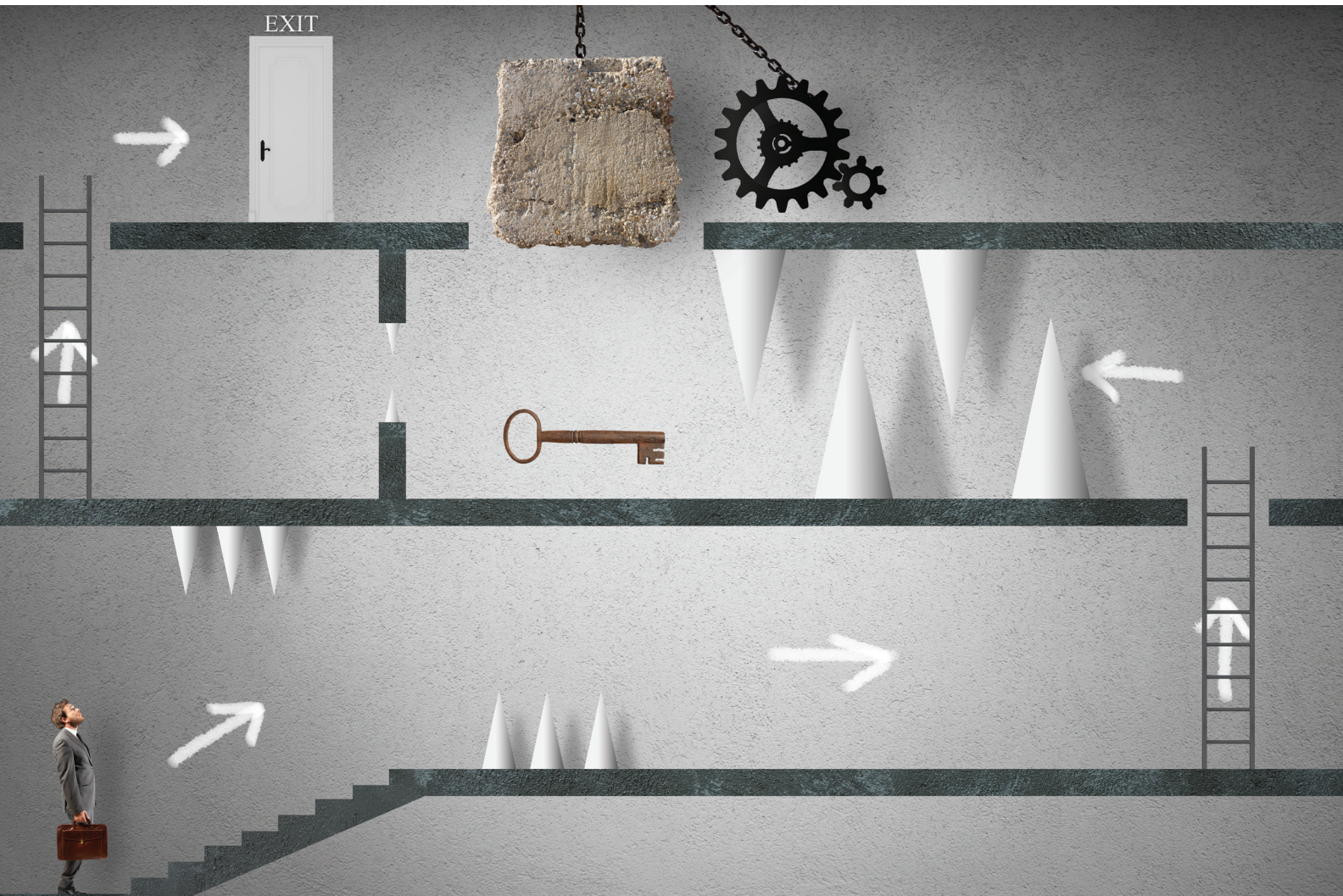
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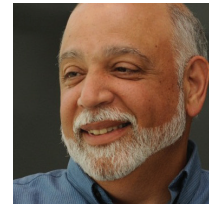
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Driving Innovation: The CAS Accelerator

As I mentioned in the last issue of *AR*, my agenda for the CAS has been focused on our future and living up to the aspirations of our current and future members, and our various supporters and constituents. We certainly have challenges: We work in an environment that is questioning traditional business models, is experimenting with new and transformative technologies, and is redefining the needed skill sets.

If we are going to keep pace with the changing environment, where the next new thing may revolutionize our work overnight, we need a better approach than waiting to see what sticks. But how can we be effective and efficient

answer these questions, the CAS must embrace innovation and take professional networking to new levels.

Innovation and the CAS Accelerator

Last year we established the CAS Innovation Council, whose mission is to focus on our future by tapping the ingenuity, creativity and inventiveness of our members and staff in a way that will accelerate our insights and ideas in order to drive an innovation agenda. We are not alone in realizing that we need to kick-start this endeavor; other associations have already been down this path. With outside help, we have learned that we need to create an innovation process that fits our mission and vision. There is no off-the-shelf version of an innovation process, but there is no need to reinvent the wheel either.

Rather than wait for a “good time” to push forward, our Innovation Council Co-Chairs Aaron Halpert and Kevin Bingham set up an innovation workshop this February. Despite it being one of the busiest times of the year for many actuaries, they found several engaged members who were fully energized by the workshop.

The goal of the workshop was to think through how the innovation process should be designed specifically for the CAS. The workshop resulted in drafts of a CAS Innovation Point of View, CAS Innovation Principles of Action and a CAS Innovation Accelerator.

Our work started with drafting the CAS Innovation Point of View, as the workshop group explored how and why we should think about innovation. To

develop the CAS Innovation Principles of Action, we thought about what was most important to us, such as creating value, collaborating with others, investing in our future, looking for opportunities, learning by experimentation and accepting the risk of failure while controlling the downside. These explorations culminated with design ideas for the CAS Accelerator, which will be our timer (we have set a 90-day timeframe) and our process model for decision making on new ideas and insights.

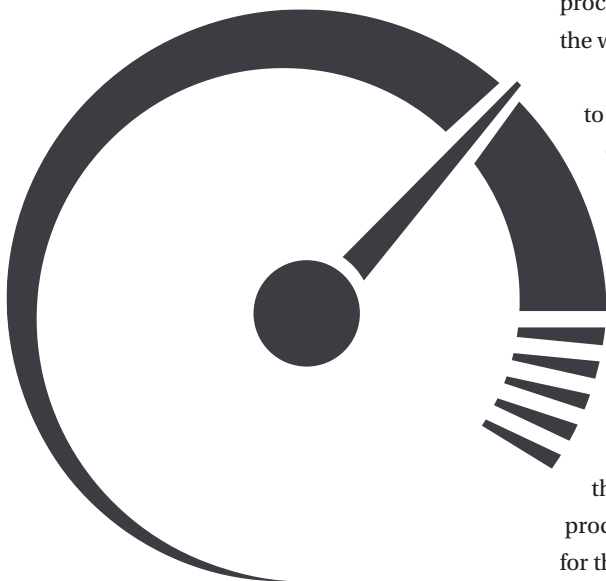
I am excited about using the CAS Accelerator to couple an excellent innovation process with our collective professional networks. To be successful, however, the CAS Accelerator calls for thoughtful suggestions. We need your input on how the CAS can help you and your connections make the most of professional networks in advancing actuarial work and careers. Please share your ideas and suggestions by leaving a comment on the CAS Roundtable Blog (www.blog.casact.org), where a version of this column has been posted.

All About That Network

In my travels to meet with groups of

Your Ideas Wanted!

Be sure to comment on the CAS Roundtable Blog of this article at www.blog.casact.org. Let us know your views on innovations for actuarial work and careers.



in trying out new ideas in order to keep ourselves current and relevant? How do we break from traditional approaches, expand our skills and adopt or adapt to new technologies or new thinking? To

actuaries working for large employers, it is clear to me that they have very good resources to support their actuarial careers within their organizations. But there is also widespread actuarial skill and knowledge outside the confines of our employers, whether small or large. Our colleagues from past employers, our acquaintances from actuarial committees and meetings, our college buddies who found careers in or around the actuarial or insurance community, and our LinkedIn and other social media connections all form a bond and a network of professionals among us. Professional networks can be valuable resources just waiting for those wise enough to tap into them.

The value of tapping shared professional knowledge from online connections is real and growing. However, the actuarial profession has been slow to harness the power of these online professional networks, and that should change. We need to think about how big we can grow our professional networks and what level of interconnectedness we can achieve. ●

ACTUARIAL REVIEW LETTERS POLICIES

Letters to the editor may be sent to ar@casact.org or the CAS Office address. Include a telephone number with all letters. Actuarial Review reserves the right to edit all letters for length and clarity and cannot assure the publication of any letter. Please limit letters to 250 words. Under special circumstances, writers may request anonymity, but no letter will be printed if the author's identity is unknown to the editors. Announcement of events will not be printed.

COMINGS AND GOINGS

Alessa Quane, FCAS, MAAA, has been named corporate chief actuary for American International Group, Inc. (AIG), where she will oversee the global actuarial and value management division. An 18-year veteran of AIG, Quane has served in a variety of AIG leadership roles in enterprise risk management and actuarial areas. Prior to her new post, she served as chief risk officer (CRO) for commercial insurance, and she supported the property-casualty business as CRO and head of enterprise risk strategy. Quane also served as CRO for AIG's international businesses and as chief actuary for the U.K./Ireland and European regions.

Laura A. Maxwell, FCAS, MAAA, took top honors in an international competition of essays on how to review an Own Risk and Solvency Assessment (ORSA). ORSA is a tool that will supplement the solvency monitoring responsibilities of state insurance regulators. Maxwell's paper, "Regulatory Review of ORSA Framework," won first place. The competition was sponsored by the Joint Risk Management Section, whose purpose is to further education and research in the area of risk management and increase the profile of the actuarial profession. She is a consulting actuary at Pinnacle Actuarial Resources, Inc., in San Francisco. She has more than 25 years of actuarial experience in the property-casualty insurance industry and joined Pinnacle in 2006. The competition was sponsored by the CAS, the SOA, and the Canadian Institute of Actuaries, the three organizations making up the Joint Risk Management Section.

CNA Financial Corp. has appointed **Mark Kaufman, FCAS**, and **Michael Shane, FCAS**, as actuarial senior vice presidents. Kaufman, who will serve as senior vice president of actuarial pricing for specialty insurance, brings 20 years of actuarial experience to CNA, most recently serving as chief actuary of global professional lines for XL. Prior to that, Kaufman was vice president and chief actuary for the construction, oil and gas and public sector lines of businesses at Travelers. Shane will serve as the appointed actuary for the U.S. and Bermuda subsidiaries of the CNA insurance companies. He has served as a chief actuary and has held key leadership positions in both finance and claim organizations. Most recently, he served as chief actuary for The RiverStone Group, a wholly owned subsidiary of Fairfax Financial.

John Mentz, FCAS, has been appointed president, Arch Insurance Group, and will report directly to David McElroy, chairman and CEO, Arch Worldwide Insurance Group. In this new role Mentz assumes the direct management responsibility for all Arch U.S. underwriting divisions. Mentz joined Arch in October 2002 as executive vice president construction. In his most recent role, in addition to construction, he had ultimate responsibility for national accounts casualty, alternative markets, high excess compensation and lenders' products. Mentz previously served in a variety of senior management positions with Zurich and the St. Paul.

Comings and Goings, page 8

Comings and Goings

from page 7

Jonathan Norton, FCAS, has been hired to help establish and manage U.S. operations for Third Point Reinsurance Ltd. In addition to his leadership role with the new subsidiary, Norton is tapped to assume the role of chief reserving actuary for the Third Point Re Group, subject to the approval of the Bermuda Department of Immigration. Norton served as chief actuary of Alterra Reinsurance USA Inc. from its inception in May 2010 until the close of the Markel acquisition in May 2013. Prior to the Harbor Point and Max Capital merger that created Alterra, Norton was chief actuary of Harbor Point and chief actuary of its predecessor company, Chubb Re, Inc.

The board of directors of the Mass Group of Insurance Brokerages has appointed **Greg Dunn, FCAS**, to the role of president and CEO effective January 1, 2015. Dunn has extensive experience in senior leadership roles in the property and casualty insurance industry, including increasingly senior roles at Aviva Canada Inc., which he joined in 2004 and for which he was most recently executive vice president, national claims. Dunn was previously senior vice president, sales-specialty distribution at Aviva Canada, where he was responsible for national sales development of the affinity and group business through the independent broker network in Canada. ●

EMAIL “COMINGS AND GOINGS” ITEMS TO AR@CASACT.ORG.

Join the Seasoned Actuaries for Dinner at the CAS Spring Meeting BY ANNE KELLY

Seasoned Actuaries is a Special Interest Section for CAS members who have been members for 25 years or more, or who are retired or thinking about retirement. Our dinners, held on Monday night at the Annual and Spring Meetings, are an enjoyable way to reconnect with old friends and to make new ones. At the recent Centennial celebration, our dinner attracted more than 100 members and guests.

Please look for the “Seasoned Actuaries Dinner” option when you register

for the 2015 Spring Meeting, where you will find more information on pricing and meal choices. If you have any questions, please contact Matt Caruso at mcaruso@casact.org.

We look forward to seeing you (and your guest) at the Seasoned Actuaries Dinner! ●

Anne Kelly, FCAS, is senior associate for Risk & Regulatory Consulting, LLC. She currently serves as president of the CAS Seasoned Actuaries Section.

CALENDAR OF EVENTS

Interactive Online Courses

“Understanding CAS Discipline Wherever You Practice”

“Introduction to Predictive Modeling”

www.casact.org/education/interactive/

May 17-20, 2015

CAS Spring Meeting
The Broadmoor
Colorado Springs, CO

June 1-2, 2015

Seminar on Reinsurance
Hyatt Regency Philadelphia at
Penn’s Landing
Philadelphia, PA

June 11-12, 2015

Enterprise Risk Management
Symposium
Gaylord National Resort &
Convention Center
National Harbor, MD

September 9-11, 2015

Casualty Loss Reserve Seminar
(CLRS) & Workshops
Omni Hotel at CNN Center
Atlanta, GA

November 15-18, 2015

Philadelphia Marriott Downtown
Philadelphia, PA

Emmy Award-Winning Host to Keynote CAS Spring Meeting

Emmy Award-winning television host, author and Hall of Fame Speaker Ross Shafer will be the featured speaker at the CAS Spring Meeting at The Broadmoor Hotel in Colorado Springs, Colorado on May 18, 2015. A highly regarded keynote speaker and seminar leader on the subjects of customer urgency and empathy, personal motivation, reinvention and market relevance, Shafer will tailor his presentation, based on his latest book, *Absolutely Necessary: Bulletproof Tactics that Will Put You in High Demand*, to the personal and professional development of new Associates trying to establish their careers as well as experienced actuaries. In *Absolutely Necessary*, Shafer shares how industry practices have changed and how leaders may need to shift their collective thinking to “re-invention mode.” Then he will present seven steps on how to become “absolutely necessary.” Audience members will take away bulletproof tactics that will put them in high demand, and they will learn how to become valued voices to any organization.

Shafer grew up in the Pacific Northwest and graduated from the University of Puget Sound in Tacoma, Washington, where he studied business management and played varsity football. After college, he took a job as a training manager for the department store Yard Birds and eventually became a retail store owner and manager. After three years he closed the store and took a job as an advertising manager for the Squire Shops retail clothing chain in Seattle. Writing ad copy and concocting radio and TV campaigns paid the bills, but at night Shafer haunted local comedy clubs in search

of a career in joke telling. After years of slogging around the comedy circuit, he won the Seattle International Comedy Competition and immediately became an opening act for performers like Crystal Gayle, Eddie Rabbitt, Nel Carter, Neil Sedaka and Dionne Warwick.

In 1985 Shafer pitched a TV show idea to KING, the NBC affiliate in Seattle, and *ALMOST LIVE* was born. For the next five seasons, Shafer hosted the comedy talk show while he and his team collected 36 Emmys. In 1988 the Fox network wooed Shafer to take over *The Late Show*, a nightly talk show that competed with *The Tonight Show* and David Letterman. The show lasted a year and Shafer next found himself in New York co-hosting *Days End* on the ABC network. The next stop for Shafer was hosting the revised *Match Game* on the ABC network. Another game show (this time on the USA network) *Love Me, Love Me Not* and numerous TV pilot projects followed.

By this time, Shafer was headlining all of the leading night clubs and casinos in North America. He produced a highly acclaimed comedy album about the Clinton administration titled *Inside the First Family*. He also wrote a comedy cookbook that became a best seller titled, *Cook Like A Stud—38 recipes Men can Prepare in the Garage with their Own Tools*.

In 1994 Shafer heard Bill Gates give a speech where he said, “Someday you will all be watching television on your telephones.” Shafer took that message to heart, and he made the decision to leave TV and get back to his corporate training roots. Human nature and the human condition were always fascinating to



Ross Shafer

Shafer because that’s what comedians do. They study the laughter and tears business. To date Shafer has produced 14 human resource training films on customer service, motivation, leadership and peer pressure. He has authored the business books *Nobody Moved Your Cheese*; *Customer Empathy*; *The Customer Shouts Back*; *Are You Relevant?* *12 Reasons Smart Organizations Thrive in Any Economy*; and *Grab More Market Share: How to Wrangle Business Away from Lazy Competitors*.

Whether you want to get buy-in for new approaches to reserving or rate-making, or want your team to become invaluable contributors to the company’s or firm’s growth, Shafer will teach you to become “absolutely necessary” to your organization by eliminating corporate tunnel vision, learning to make good decisions and remain creative even when under intense pressure, utilizing five tactics to keep an eye on your competitors, getting buy-in from your team and delivering more performance even when you have limited resources. ●

Student Central Infographic Wins Award

BY KATE NISWANDER, CAS MARKETING AND COMMUNICATIONS MANAGER

The CAS recently won an award in the Association TRENDS 2014 All-Media Contest for its infographic promoting the CAS Student Central program. The printed infographic features graphics and statistics designed to show students and future CAS members all of the benefits in pursuing a career as a property-casualty actuary. The infographic won the award in the direct marketing piece/promotion category.

Launched in January 2014, CAS Student Central serves the growing number of college students pursuing property-casualty careers. The program has seen enormous success in its first

year, with more than 1,500 student members from over 300 universities. If you know a college student considering an actuarial career, we encourage you to share this infographic with them.

The piece is available for download on the CAS Student Central website (www.casstudentcentral.org/infographic/), or a printed copy can be requested from the CAS office. ●

STUDENT CENTRAL FOCUSED ON YOUR FUTURE

Employers value CAS and its credentials – Associate of CAS (ACAS) and Fellow of CAS (FCAS) – as the **GOLD STANDARD**. With this in mind, we invite university students to become members of CAS Student Central. We care about your developing career and take it as seriously as you do. We're here to help **JUMPSTART YOUR SUCCESS**.



When we ask our members to tell us the greatest benefit of earning their CAS credentials, their response is unanimous. They tell us: *"It has helped advance my career."*

What does joining CAS Student Central mean for you as you prepare for your career? It means entrée into our built-in network of the industry's best professionals. It means guidance through the rigor of exams that employers highly value. It means a career that offers challenges, opportunity, advancement, and great rewards.

Join us at CASstudentcentral.org

CAS: WHO, WHAT & WHERE

Who are we? | What do we do? | Where do we work?

INFORM STUDENTS ABOUT CAS RESOURCES

For University Students
CASstudentcentral.org

The CAS Student Central website is the dedicated hub for news and information for students who are interested in pursuing an actuarial career. Through the website students can join the FREE Student Central membership program for university students.

Member benefits include:

- Access to the online community with tips/tools from practicing professionals, employers, and candidates
- Information on exams, internships, and scholarships
- Invitations to networking events and educational webinars
- Exclusive resources including the CAS Curriculum Guide and case study recordings



STUDENT
CENTRAL

For High School Students
BeAnActuary.org

BeAnActuary.org is jointly hosted by the CAS and the SOA. The website is an excellent resource for high school students to gain basic knowledge about the actuarial profession.

Case Competitions Expose Students to Real-World Actuarial Concerns

BY TAMAR GERTNER

Opportunities for actuarial students to participate in case competitions have grown in recent years, as they are useful tools for employers and actuarial students alike. Employers are able to closely observe participants over the course of the competitions, evaluating their leadership, presentation and analytical skills, among other characteristics. Students in turn gain exposure to hiring managers and business leaders and obtain valuable experience dealing with real-world actuarial issues. This experience can be highlighted on their resumes and during job interviews.

While in recent years the CAS has participated in case competitions as a sponsor, we are now working to expand our involvement in these competitions. This winter, the CAS partnered with Farmers Insurance to write a case competition for UCLA's Bruins Actuarial Society Case Competition. The competition was introduced to the students in December 2014 and presented in January 2015. The CAS will continue to explore opportunities to be involved in case competitions in the upcoming year, and currently there are plans to invite university students to participate in a contest developed by the CAS Committee on Theory of Risk, otherwise known as the COTOR Challenge.

Highlighted below are three exciting examples of company-led case competitions.

Gross Consulting Predictive Modeling Competition

The Gross Consulting Predictive Model-

ing Competition is for undergraduate university students and is hosted through Kaggle.com, a crowdsourcing website. Students are invited to compete with one another as individuals or teams to create the most predictive model. In some cases the students compete on a problem that is already on Kaggle.com. In others, Gross Consulting uses the website to host a private competition. Gross Consulting reveals the competition, and students are given three weeks to submit and refine models through the website. Participants can monitor their progress on Kaggle.com against that of other teams. The top teams or individuals are then invited to present their models to a group of practicing actuaries and potential employers. The team with the best model receives \$1,000, and the finalist with the best presentation receives an award of \$500.

Gross Consulting has held two competitions to date. The first competition was an analysis of census mailing return rates, and the second competition was of medical malpractice payment severity. In the most recent competition, 96 students from 11 universities participated, with a group of students from the University of Iowa winning both facets of the competition. A free license of



Students develop their case to present to judges.

Gross Consulting's Cognalysis MultiRate predictive modeling software is provided to students during the competition, as well as training on its use, but competitors are free to use other approaches as well. Gross Consulting employees hold an information session to explain the problem to be analyzed and to train the students on how to use MultiRate. The employees are also available throughout the competition for questions about the software and the problem in general, but they do not give guidance beyond that, instead allowing the students to do their own research and develop their own ideas.

"We find that hosting this competition is a wonderful opportunity to give *the students* a real sense of accomplishment that comes with creating their own models to describe actual data," said Chris Gross, owner of Gross Consulting. "It gives *us* the opportunity to get to know a number of talented students and to see how relative newcomers to the field use and understand our software. We have been pleased with the qual-

Giving CAS Members a Voice: All Our Ideas and Idea Share

BY DAVE CORE, CAS DIRECTOR OF PROFESSIONAL EDUCATION AND RESEARCH

With more than 6,000 members, the CAS is full of actuaries with ideas. To capture these ideas, the CAS recently unveiled two new online tools, All Our Ideas and Idea Share, designed to solicit the input of members in helping to define the sessions for our upcoming Spring Meeting and areas for future research.

All Our Ideas

This year, the 2015 CAS Spring Meeting Planning Committee used input from the members of the CAS to supplement its Spring Meeting program with new sessions on hot topics in actuarial science.

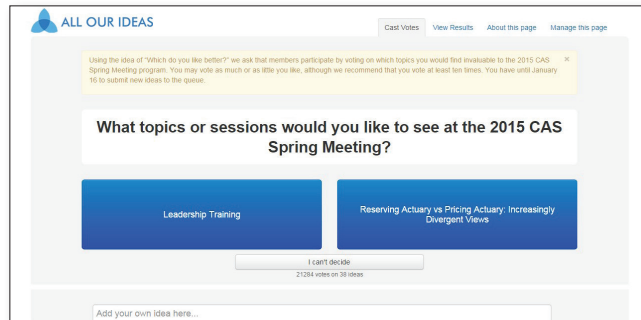
The planning committee used a new platform called All Our Ideas (<http://www.allourideas.org/>) to collect ideas and to gauge the interest in topics submitted to the program. Those who participated were asked to vote on which topics they found invaluable and timely for the 2015 CAS Spring Meeting. Mem-

bers were also able to submit their own ideas to the voting pool to help generate the best content for the meeting.

In fact, the top six most popular topics were all ideas generated by CAS members, which the planning committee is now considering integrating into the CAS Spring Meeting program. This input from members is valuable in the content planning process. Using this and other methods, the CAS will endeavor to bring those ideas to fruition.

Idea Share

In conjunction with the CAS Research and IT staff, the CAS Kick-starter Task Force worked to develop the new Idea Share site on the CAS



A sample question from the All Our Ideas platform.

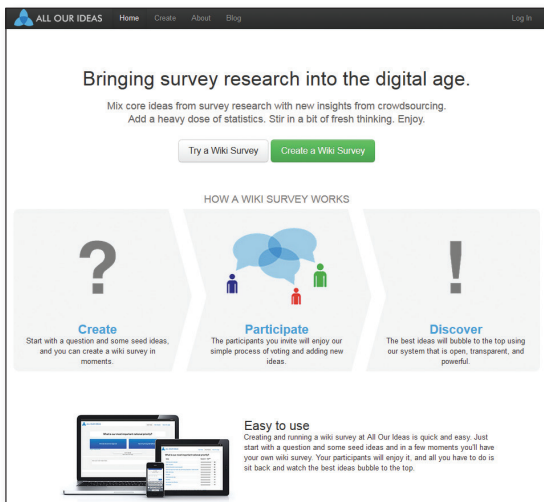
IDEA SHARE The CAS strives to provide practical research that is relevant to our members and their stakeholders.

The Idea Share intended to gather research ideas. Users can pick categories or topics of interest and add their own ideas for research projects. The website includes the capability to vote on different projects as well requests for research. Voting includes a selection of priorities for each of the different ideas that are added, and also accepts comments from people so there can be a discussion about the suggested idea.

Feel free to "Subscribe" to an idea of interest to keep informed if the idea becomes a project. The CAS will be able to track the progress of the idea and contact respondents to sign them up for a working group. Additionally, the website includes a Twitter feed. Use #CASIdeashare to talk about Ideas on Twitter and it will show up below.

Issue Type	Active Issues	Last Submitted
CAS General Research Ideas	6	Jan 21, 2015 04:06 PM
Accounting and Reporting	1	Feb 10, 2015 06:28 AM
Capital Management	3	Jan 24, 2015 10:57 AM
Data Management and Information	1	Sep 11, 2014 07:29 AM
Enterprise Risk Management	0	None
Investments	0	None
Health Care	1	Oct 23, 2014 05:17 PM
Rate-making	0	None
Regulation and Law	0	None
Reserving	3	Jan 20, 2015 03:06 PM
Valuation	0	None
Business Areas	1	Sep 24, 2014 03:19 PM
Reinsurance	0	None
Residual Value	0	None
Surety	0	None
Warranty/Service Contracts	0	None
Workers Compensation	1	Jan 20, 2015 12:23 PM
Financial and Statistical Methods	0	None
Practice Areas	0	None

The Idea Share webpage categorizes research topics, shows active issues and tracks project progress. Users can drill down to vote on, add or sign up for projects.



The All Our Ideas home page.

website. The goal of Idea Share is to generate ideas from members on new research topics. Because the CAS allocates a percentage of annual dues for research funding, it is important that the CAS fund research in areas desired by members.

Featuring nearly 20 different categories, the Idea Share is an easy way for members of the CAS community to share ideas

and see the research topics recommended by other members. Participants also have the opportunity to vote on ideas and to "subscribe" to ideas they want to know more about. The next step is for the CAS Research Oversight Committee and other research committees to select topics for further consideration.

Members can access this new tool by clicking on the "Idea Share" link under the "Research" tab on the homepage of the CAS website. ●

IN REMEMBRANCE

The AR introduces the first of an occasional column featuring short obituaries of CAS members who have recently died. Longer versions of these obituaries are posted on the CAS website at <http://www.casact.org/pubs/proceed/index.cfm?fa=pastind>.

MENTOR, FRIEND, SPORTSMAN

Ronald J. Sanko (ACAS 1973)

1938-2012

Ronald Sanko died on March 14, 2012. He was 73.

Sanko was born in Inglewood, California on November 27, 1938. He served in U.S. Navy for three years and was a member of Phi Beta Kappa. Sanko graduated from the University of Oregon in 1965 with a bachelor's in mathematics. He worked in the actuarial department at State Farm Insurance Companies for 31 years.

An ardent hunter and fisherman, Sanko was described as someone ready to help with guidance or reassurance. He was a board member with the Prairie Cities Soccer League in Normal, Illinois, and helped to establish the local high school girls' soccer program. Sanko is survived by his wife, Mary L. Beechler; and two children, Dale (Laura) Sanko, of Cincinnati and Jill (Joshua) Taylor of Walnut Creek, California.

A GENTLE SOUL

Joseph A. Gage (FCAS 2008)

1980-2013

Joseph A. Gage died in a tragic accident on Tuesday, January 1, 2013.

Born May 3, 1980, in Manchester, New Hampshire, Gage earned a BS in

mathematics and minors in Spanish and business administration from the University of Hartford.

He was employed as the U.S./Canada Property Pricing Actuary for AIG and earlier was a senior actuary for Liberty Mutual Insurance. His career work included in pricing/ratemaking, reserving and accounting/financial reporting.

Gage was a member of and advocate for the gay community. His hobbies included guitar, travel and volleyball.

A former supervisor of his from Liberty Mutual, Barbara Mahoney, FCAS, greatly admires Gage's past work. Even though it's been years since he left Liberty Mutual, Mahoney still has a computer folder titled "Joe Gage" to which she often refers.

GRACE ABOUNDS

Paul Benjamin Deemer (FCAS 2004)

1974-2013

Paul Deemer passed away on January 13, 2013. He was born July 26, 1974, in Traverse City, Michigan, to Benjamin and Lois (Barber) Deemer. He held a BS from Eastern Michigan University in Ypsilanti and was the chief financial officer of Conifer Insurance in Southfield.

From 2005 to 2006, Deemer was a CAS Research Paper Classifier, helping to populate the online CAS Database of Actuarial Research. He was a woodworker and outdoorsman who carried on his family's farming heritage, owning and working a small hobby farm. He was a devoted father, who only met with friends after his children went to sleep. He also encouraged his younger cousin, Jason Culp, FCAS, to become an actuary.

Shortly before his passing, Deemer wrote in his notebook, graciously thanking all the people who, with kind words and deeds, helped him and his family during his illness. He is survived by his wife, Erin; his seven children, Rose, Catherine, Anne, John Paul, Benedict, Fulton and Teresa; and his parents.

TEACHER TURNED ACTUARY

Rex C. Davis (ACAS 1967)

1934-2013

Rex C. Davis was born in Stevens Point, Wisconsin, and would spend much of his early life there. He attended P.J. Jacobs High School and, in 1957, married Nancy G. Gehrke, the love of his life. He also attended the Central State Teachers College there, receiving a bachelor's degree in 1958. He later earned a master's degree from Iowa State Teacher's College in Cedar Falls, Iowa.

Davis began as a high school math teacher and, after two years as a teacher, he made a career change and began working for Sentry Insurance Company in his hometown. He left Stevens Point to work as an actuary for Allstate Insurance Company in Northbrook, Illinois, working there for 27 years until retiring in 1990.

His enjoyments in life were mainly family. He also enjoyed boating and fishing at his cottage on Big Green Lake in Wisconsin's Door County.

A KEEN OBSERVER

Walter J. Fitzgibbon Jr. (FCAS 1961)

1933-2013

Walter J. Fitzgibbon Jr. was born in Hartford, Connecticut, and was a graduate of

Boston College. In 1955 he embarked on a 40+ year career at Aetna, beginning as an actuarial assistant, then vice president and actuary and eventually vice president and corporate actuary, a title which he held at the time of his retirement in 1994.

Throughout his career, Fitzgibbon saw the insurance industry grow and change as it faced numerous challenges. In a 1991 *New York Times* article on the growing specialization of insurance companies, Fitzgibbon said, "There was a time when this company wanted to write every type of policy in all 50 states. We just don't want to do that any longer."

An active CAS volunteer, Fitzgibbon's service included treasurer (1974-1978); chair of the Finance, Audit, Ad Hoc Memorials and Bequests Committees; and board director (1988-1990). He wrote the 1965 *Proceedings* paper, "Reserving for Retrospective Returns."

A MAN OF INFLUENCE

John H. Muetterties (FCAS 1956)

1923-2013

John Muetterties was a husband, father, grandfather and World War II Navy veteran.

A charter member of the American Academy of Actuaries, he was awarded the CAS Matthew Rodermund Service Award in 1999 for his volunteer work, including president of the Conference of Consulting Actuaries (CCA) and director on the CAS and CCA boards.

After earning a statistics degree from the University of Wisconsin in 1948, he worked his way up in several companies, including the Insurance Department for the State of Wisconsin, San Francisco's Industrial Indemnity Company and Sentry Insurance Company in Stevens Point. He went to New York

in 1970 to head the Insurance Rating Board's actuarial-statistical department. Later, he became president of ISO's government and industry relations.

In 1978 he started MBA Consulting Services in Mountain Lakes, New Jersey, from which he retired in 2006 at the age of 83.

Noted for his wisdom and commitment to the actuarial field, Muetterties influenced the careers of many who knew him.

HISTORIAN AND PRESIDENT

M. Stanley Hughey (FCAS 1947)

1917-2013

Stan Hughey was a past president of the CAS and the American Academy of Actuaries with an eye for history and the future.

He earned a BA in mathematics from University of Illinois (1938), an MBA from Northwestern University (1957), and an honorary doctorate in public service from Greenville College (1983).

Hughey served the CAS in many capacities, including as a member of the CAS Council (1957-1960) and Publicity (1954-1963) and Research (1954-1961) Committees.

In 1989 he wrote the "The First Seventy-Five Years" for the CAS Annual Meeting and in 2012 contributed to *100 Years of Expertise, Insight and Solutions: A History of the Casualty Actuarial Society*.

In his 1975 presidential address, Hughey cautioned the insurance industry to consider the costs of social programs: "In our enthusiasm for providing security for all, we must not overlook the need to finance these programs, lest we leave to future generations the framework for disaster."

PAPERBOY MAKES GOOD

Marvin E. Van Cleave (ACAS 1958)

1922-2013

The valedictorian of his high school class, Van Cleave attended Central College in Pella, Iowa, on a *Des Moines Register & Tribune* scholarship, earned while working as local paper boy.

While attending Central College in Pella he met Naomi Abrahams, whom he married in 1944. After graduating from Central College in 1943, Van Cleave enlisted in the U.S. Army Air Corps, serving as a weather forecaster and flight controller in the Pacific Theater.

He taught high school for a year and then enrolled at Drake University, earning an MA in actuarial science. He began work at the Iowa Department of Insurance, and, in 1956, he became chief of the rates division of the Office of Commissioner of Insurance in Madison, Wisconsin. He retired from there as assistant deputy commissioner of insurance in 1987.

"Not only was he a great man, he was also my grandfather," said Karen Van Cleave, FCAS. "We shared a unique bond as I followed in his footsteps as an actuary." ●

Writing and research by CAS staffers Matt Caruso, Alice Chambers, Kate Niswander, Donna Royston and Elizabeth Smith.

IN MEMORIAM

David B. Sommer
(FCAS 1993) 1964-2015

Eugene G. Thompson
(ACAS 1971) 1948-2014

The CAS:



A Global Organization

Whether connecting expat members or offering professional education opportunities outside North America, the CAS strives to make global the new local.

Global is the New Local BY ELIZABETH SMITH

Gabriel Ware was new to Munich when he moved there in 2007, so he was happy to meet up with a fellow CAS member, Jeffrey Courchene, who had been working in Munich for a while. Courchene gave him advice on getting accustomed to his new environment.

Courchene's generosity resonated with Ware for a long time, and, after he earned his FCAS, Ware took on the role of co-chair for the CAS International Member Services Committee (IMSC). The IMSC sustains and develops connections among the CAS and its members outside North America, often working with CAS international Regional Affiliates. The meeting with Courchene inspired the IMSC to launch an outreach program in 2012, the goal of which is to help CAS members through the intricacies of new cultures, legal systems, business environments and societies.

Because of its relationship with CAS international members, the IMSC is in a unique position to gather ideas and collaborate with other CAS committees. One example of an IMSC idea taking root was the CAS's first Webinar on microinsurance. Through its network, the IMSC learned of the need and proposed the topic to the CAS Webinar Committee.

The work of the IMSC is just one of several CAS initiatives under way to assist our growing membership beyond North America. In the following pages, you'll learn more about the CAS's commitment to its members around the world and how the CAS is truly a global organization. ●

A “Muddy Confluence” of Appointed Actuaries

By BOB CONGER

A small actuarial contingent facing growing regulatory requirements provides an opportunity for CAS collaboration.

Recently, I had the opportunity to attend an excellent two-day workshop targeted to property-casualty appointed actuaries and their staff members. The CAS co-organized the workshop, and all three of the workshop presenters proudly carry CAS credentials. I had met only one of the presenters prior to connecting with them via the workshop. I gained some really useful knowledge, interesting perspectives and fresh insights from attending. The workshop attendees were quite engaged; I enjoyed hearing their questions and comments, and working with a dozen colleagues during the breakout session, as well as chatting with many other participants more informally during the breaks.

I know. Those elements don't sound like the ingredients of headline news; many other CAS seminars could be described similarly. But consider this: The workshop was conducted in Kuala Lumpur, capital city of Malaysia, half a world away from the vast majority of CAS members.

“Kuala Lumpur” literally means “muddy confluence” — thus the title of this article. The confluence refers to the rivers that flow down from the inland areas. In the 1850s, rich sources of tin were discovered in the area. That tin, and the pewter of which the tin is a key ingredient, have been significant to the ascendancy of the city as a center of commerce.



So how and why did the CAS come to be involved in organizing and presenting a workshop in Malaysia in November 2014?

The roots of this workshop go back a year earlier, to the 2013 East Asia Actuarial Conference (EAAC) in neighboring Singapore. During that 2013 conference, senior CAS representatives leveraged the presence of more than 500 actuaries from all over Asia to schedule a series of bilateral conversations with leaders from various actuarial organizations in the region, including the Actuarial Society of Malaysia (ASM). The ASM’s leaders briefed us on the general insurance¹ actuarial marketplace in Malaysia (30 general insurance companies, including seven *takaful* operators, serving a population of 30 million people, but fewer than 20 credentialed actuaries focusing on general insurance). ASM’s leaders also outlined some of the challenges of meeting the rapidly evolving actuarial educational needs of a small and young profession in a country where the insurance industry is in a state of significant development and evolution. We, in turn, described the CAS’s appetite to work collaboratively with local organizations to deliver excellent education for general insurance actuaries around the globe. A seed of an idea was planted.

That seed took root and sprouted in the early months of 2014 under the leadership of Kelvin Hii, ASM vice president and leader of ASM’s General Insurance Committee, who invited me to continue the EAAC conversations. A shared but not well-defined interest in educational collaboration came into clear focus when Bank Negara, the Malaysian regulatory authority, announced a new requirement for appointed actuaries: to issue an annual financial condition report on each general insurance company. The ASM and the CAS decided to join forces to produce a

Takaful is an Islamic insurance concept that has been in use for more than a millennium. It has many similarities to a pure mutual or cooperative insurance company, with all participants paying their contributions into a pool that is used to assist the participants in need — the funds contributed to the pool are for the collective benefit of the participants rather than for profit. The structures, products and other elements are designed carefully to respect Islamic constraints on commercial arrangements that might be viewed as containing elements of uncertainty, gambling or usury.

¹ While “property-casualty” is the North American collective label for the insurance products that comprise the work of many CAS members, “general insurance” is the corresponding term in Malaysia and many other countries. The remainder of this article will refer to general insurance.

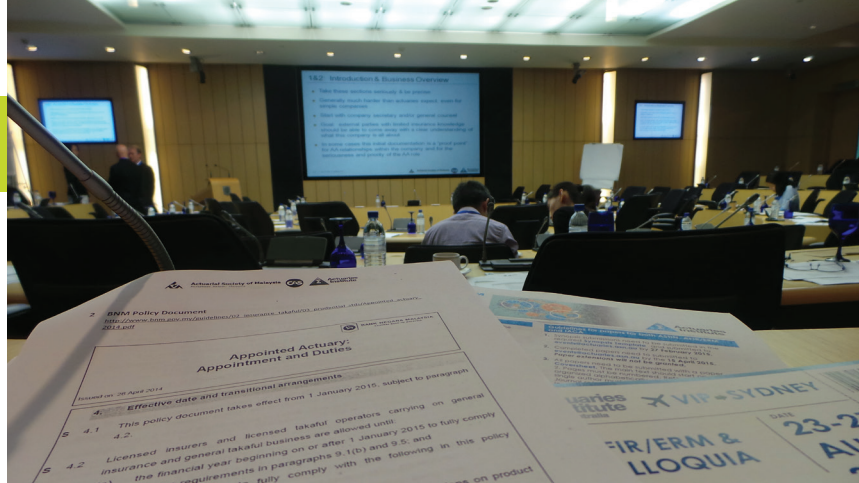
Requirement Will Create Demand for Appointed Actuaries in Malaysia

Starting January 1, 2017, all licensed general insurance companies and general takaful operators doing business in Malaysia must designate an in-house appointed actuary, i.e., an appointed actuary who is part of the company staff. This requirement will create a big gap between the demand and supply of general insurance actuaries; currently there are fewer than 20 qualified actuaries to meet the needs of 30 companies, and about half of those actuaries work in consultancies.

An appointed actuary's key responsibilities are to:

- (1) certify insurance liabilities,*
- (2) prepare financial condition reports,*
- (3) provide recommendations on the appropriateness of surplus distributions, where relevant, and*
- (4) apply reasonableness tests on the completeness and accuracy of the database used for responsibilities (1)-(3).*

The appointed actuary has an essential role providing expert opinion directly to the company board of directors and regulatory authorities.



An outline of the Appointed Actuary's appointments and duties.

two-day workshop for Malaysia's general insurance actuaries, with a bit more than half of the workshop to be focused on financial condition reports and the remainder on loss reserving methods and considerations. The CAS agreed to identify, recruit, provide and support the speakers; ASM very skillfully managed all of the local marketing, budget and finance, site selection and management, logistics and on-site support. We also were pleased to welcome the Institute of Actuaries of Australia (IAAus) as a co-sponsor and to have the support of IAAus, particularly with respect to endorsing and marketing the event to its members through its significant communication channels.

Our solicitation for potential CAS speakers produced numerous enthusiastic volunteers with a healthy diversity of backgrounds, experiences and job responsibilities. Ultimately, we selected a team of three:

- Judy Ng, a 2013 FCAS working in Singapore, was, with her active consulting work for a variety of insurers, an excellent choice to lead the basic loss reserving sessions.
- Herb Desson, a 1992 ACAS who has worked for several insurance companies in Thailand since relocating there in 2006, brought a depth of real-world experience to his sessions on the more subtle considerations that enter into the selection of loss reserving methods and the calibration of parameters.
- Daniel Tess, a 1997 FCAS and also a Fellow of IAAus, has lived and worked in Australia since 1998 and has extensive familiarity with implementing and delivering financial condition reports as defined in Australian regulation. He was very effective throughout the seminar in using that platform to illuminate key issues and to suggest key areas of focus for appointed actuaries in the Malaysia market.

The loss reserving presentations in Malaysia also benefited significantly from tapping the substantial CAS library of presentation materials used at past Casualty Loss Reserve Seminars. (Our thanks to CAS Director of Professional Education and Research Dave Core for great help in finding the materials we needed, and to the past CAS authors and presenters who created those materials.)

The 75 participants themselves contributed tremendously to the effectiveness and the success of the workshop. One of the highlights of the first day was a breakout session at the end of the day. The attendees were divided into groups and each group was assigned a question or issue to discuss. There was not a right or wrong answer, but rather a complex situation requiring thoughtful weighing of different ideas.

The team to which I was assigned took on the following issue: "You are the loss reserving actuary for Malaysia Airline. How do you analyze the airline's loss reserve

The International Issue

requirements at the end of 2014?" This group decided to segregate the reserving analysis into two major elements. The first would deal with routine daily claims (minor injuries, damaged property and so forth), and would likely use typical forms of aggregated data and conventional actuarial methods to examine and extend patterns in that aggregated data. The second element would focus on catastrophic claims and likely would be customized to deal with the particulars of each catastrophe, the process and status of identifying and resolving all claims and obligations, and the knowledge of experts. This element would also contain detailed information about legal responsibilities and liability limits, insurance and reinsurance protection, and the involvement of other insurers in the various layers of exposure. Another theme of this discussion centered on communicating with experts in the business being analyzed. This communication is vital because it gives the actuarial analysis some context and shows that the analysis is not simply a mathematical process applied to abstract numbers.

One of the teams considered how an actuary might use generalized linear models (GLMs) for loss reserving. This group saw the potential of GLMs as predictive models to estimate ultimate losses from partially developed claims. For example, you may apply three dimensions in traditional triangulation data: accident years, development years and financial year factors (e.g., inflation). However, you need to be careful of overparameterization. Because external factors may result in past trends being not relevant to future expected developments, caution is needed when using GLMs. With any projection model, it is important to understand the intricacies of the model and its limitation, as opposed to using the model as a "black-box." Data quality remains an important consideration, as bad data may produce results that are not credible.

I was very impressed with the grasp of key loss reserving concepts, as well as the subtle issues, that came out in our group's discussion. And I was equally impressed with the energy of the participants! During the second day, some of the liveliest discussions during the general sessions related to how the appointed actuary can clearly convey the key elements of the technical analysis, the nature and magnitude of uncertainty associated with future projections, and the most important business implications of the actuarial work and conclusions. These are communication challenges that I still face on almost every project! Equally energetic were the informal



A workshop team brainstorms on its assigned topic.



exchanges and networking among participants and instructors during the various breaks.

On all fronts, the workshop was an extraordinarily successful first collaboration of the CAS and the Actuarial Society of Malaysia. And already, the CAS and the ASM are following through on an intention to repeat our joint experiment with another workshop in Kuala Lumpur in the fourth quarter of 2015; this one will be focused on ratemaking and predictive modeling. With the Malaysian regulators currently laying the groundwork for relaxing the centralized determination of insurance prices—and allowing more competitive pricing processes—what could be more topical and more essential for Malaysia’s general insurance actuaries? ●

Bob Conger is a CAS past president and consultant with Towers Watson. He served as CAS International Ambassador from 2013 to 2014 and is a member of several CAS international committees.

New CAS Staff Position in Hong Kong to Advance International Efforts

Michael Chou will serve as the first CAS International relations manager, a newly created staff position based in Hong Kong. Chou will focus exclusively on the CAS’s expanding international efforts in Asia, Australia and the Far East.

Chou will manage all CAS activities in the region, in collaboration and partnership with local CAS members and organizations. He will provide direct support to local CAS Regional Affiliates and assist in promoting CAS initiatives and activities, such as CAS-sponsored meetings, seminars and the Course on Professionalism.

Chou will also work on the CAS’s growing university engagement initiatives, including arranging meetings with universities and building the CAS University Liaison program in Asia. He will manage the CAS’s International

Ambassador program and provide staff support to the CAS ambassadors and liaisons focusing on the region.

“This new position is a natural extension of the growing international demand for CAS credentials and continuing education,” said CAS Executive Director Cynthia Ziegler. “Our Strategic Plan supports the CAS’s continued global advancement, as employers consistently recognize our members’ specialized skills and knowledge. As our ‘on-the-ground’ representative, Michael will be an invaluable resource to CAS staff, volunteers and leadership moving forward.”

Prior to joining the CAS in his current role, he had lived in London for about eight years and had most recently been working as an entrepreneur. He also had experiences in the finance, telecommunications and media sector from both cities. ●

Michael Chou, International Relations Manager

Welcome to the CAS Staff Spotlight, an interview-style column featuring the CAS staff you interact with on a regular basis. In this spotlight, we are proud to introduce you to Michael Chou.

- **What do you do at the CAS?** As international relations manager based in the Hong Kong Office, I help to promote CAS initiatives in Asia. These include university engagement, seminars and events, and I act as a liaison with other actuarial organizations. I am also responsible for all kinds of general support tasks for CAS members, candidates, and actuarial students in the region.
- **What do you enjoy most about your job?** Working with a group of dedicated professionals and volunteers to help promote the CAS brand in a diverse, challenging, rapidly changing and developing market.
- **Hometown:** Hong Kong, China
- **College and degree:** Rensselaer Polytechnic Institute, B.S. in computer systems engineering and MEng in industrial and management engineering.
- **First job out of college:** Analyst programmer at Warburg Dillon Read, a financial services firm. I was hoping to get work experiences in the U.S. after graduation, but the job



Behind the scenes: Michael Chou (background) is at the ready as Rade Musulin (foreground) is interviewed.

was an Asia-Pacific position, based in Hong Kong.

- **Describe yourself in three words:** Determined. Creative. Progressive.
- **Favorite weekend activity:** Going to the cinema — During my first few years living in London, my apartment was within walking distance of a cultural center with three independent cinema screens. I pretty much watched every screening available, going there at least twice a week. Sometimes I would buy a ticket without knowing what the movie was about. In Hong Kong, the movies are mostly limited to commercial releases. The most recent film I watched was *Blackhat* by Michael Mann, one of my favorite directors since *Heat*.

- **Favorite travel destination:** European cities — I really enjoy the wonderful architecture, the traditional cuisines and the museums, and I like watching how people go about their daily lives. Touring Paris on bike and visiting Moscow in the middle of winter are my most memorable trips in recent years. I also would love to take short trips to New York City and London in the future, though both are more like my second hometown than a travel destination.
- **One interesting or fun fact about you:** I used to be a semi-professional wedding/events photographer. ●

Alice Chambers is the marketing and communications coordinator for the CAS.

NEED ON-DEMAND CONTINUING EDUCATION CREDIT?

The University of CAS (UCAS) provides a variety of educational content through the live capture of our educational programs and interactive online courses, such as the 2014 CAS Centennial and Annual Meeting session recordings (www.casact.org/UCAS).



Visit www.casact.org/education for more info.

University of CAS—Reaching out Globally

The CAS is committed to offering convenient and affordable continuing education to the global actuarial community.

To satisfy our goal of providing services with a global perspective, The University of CAS (UCAS) will continue to offer resources with an international focus from our past meetings, seminars and webinars. The CAS has also introduced engaging, creative and interactive online courses on topics that are important to casualty actuaries around the world.

Available now are two interactive online courses titled “Understanding CAS Discipline Wherever You Practice” and “Introduction to Predictive Modeling.” The CAS will soon unveil two new course series called “Statistics for Reserve Variability” and “Introduction



to R.” These two topics will be presented as a multicourse series with a hands-on approach and will be available later in 2015.

Many resources within the University of CAS have topics with a broad appeal, and many recordings are available that would be beneficial to the international community.

Highlight of Sessions:

- AR-1: Improving Actuarial Reserve Analysis Through Claim-Level Predictive Analytics (2014 CLRS)
- R-3: Complexities in Reinsurance Reserving (2014 CLRS)
- C-2: Understanding the Impacts of Climate Change (2014 Reinsurance)
- C-16: Model Risk: No More Pretending (2014 Reinsurance)
- C-26: Emerging Issues: Fracking and Other Energy-Related Risks (2014 Reinsurance)
- PL-2: Pricing Analytics for the Small and Mid-Sized Insurance Companies (2014 RPM)
- PM-12: And the Winner is...? How to Pick a Better Model (2014 RPM)

The various resources can be found within the CAS learning management system at www.casact.org/UCAS. ●

Assistance-Qualified Country Discount

Individuals who are a full-time resident of an assistance-qualified country, per our 2015 CAS Assistance Qualified Country listing, are eligible for a 50% discount off any offerings within the University of CAS. For more information and to register online, please visit <http://goo.gl/pxCl27>.

Contact Nora Potter, CAS Coordinator of Professional Education, with any questions.

Meet Marina Vaninsky: Regional CAS Officer

Growing up on three continents has given Marina Vaninsky, FCAS, a distinct outlook on adjusting to one's environment and attaining success. She has undertaken many challenges in her life and career. The CAS has unique and motivated members from all over the world, and Vaninsky is an excellent illustration of this.

Vaninsky was born in Moscow, and her family moved to Israel when she was a child. When she was a senior in high school her family relocated from Israel to Connecticut. Moving at young ages to significantly different environments pushed Vaninsky to adapt quickly. "It was a challenge to adapt to a new country, language and traditions," she said. Her father, Alexander Vaninsky, is a professor of finance and mathematics and currently teaches at the City University of New York and the University of Connecticut (UConn). In college she followed her father's path, majoring in finance at UConn.

While finishing her degree, Vaninsky took a summer internship in the GenRe accounting department, where she discovered the actuarial profession. She had never heard of an actuary and soon became intrigued by the analytical nature of the work. Never one to shy away from a challenge, she tackled the CAS exam process, achieving her ACAS in 2007 and her FCAS in 2008. Her actuarial career began in reinsurance reserving, and she

is now responsible for pricing casualty programs in Hudson Insurance Group's New York office.

After establishing her actuarial career, Vaninsky wanted a new challenge. She enrolled in Columbia University's MBA program and did coursework on weekends. Friends and colleagues thought she was switching careers, but Vaninsky had another reason. "Actuaries in today's world are increasingly seen as business partners," she said. "They are expected to have excellent business skills like strategic thinking, team building and negotiation tactics." Vaninsky is using her MBA to gain a broader business perspective and greater creativity in problem solving. She will complete the program in 2015.

An active CAS volunteer, Vaninsky has served the Casualty Actuaries of Greater New York (CAGNY), for three years as education chair, where she oversaw the annual university scholarship for the CAS Regional Affiliate. "It was gratifying to identify talented students interested in actuarial science," she said. "I was reminded of those who helped me early in my career and how important their influence was for me." Currently, she is vice president of CAGNY.

Vaninsky has also served on the CAS Committee for Reinsurance Seminars since 2011. "I joined when I worked in reinsurance," she said. "Later, when I moved to primary insurance, I decided to stay on the committee and focus on



Marina Vaninsky

the perspective of the ceding company. Volunteering helps me to stay in touch with the reinsurance community." She is also a member of the CAS Media Relations Committee.

Her international upbringing has given her the foundation to adapt to ever-changing situations, and her education and experience have broadened her skill set. Combining business skills with actuarial science has added another dimension to her outlook. Vaninsky uses her proficiencies to give back to the CAS through volunteering. She is a splendid example of a CAS member who is focused on the future. ●

Matt Caruso is the membership and volunteer manager for the CAS.

CAS Forms New Regional Affiliate in Asia BY KATE NISWANDER

The CAS has added a new Regional Affiliate in Asia that will join 16 others throughout the world as a high-quality provider of continuing education for CAS members, candidates, students and other stakeholders. The Regional Affiliate was formally chartered by action of the CAS Executive Council in March 2015.

The yet-to-be-named Regional Affiliate (see box at right) will offer various levels of educational programming, including one-day seminars to be held at least twice yearly in the spring and fall.

The Regional Affiliate programs will feature distinguished speakers from the local actuarial community, academia and the wider global business community.

“Our initiatives will meet the increasing demand for CAS credentials and continuing education in the region,” said Delvin Cai, FCAS, the new president. “We look forward to collaborating with CAS members and our partnering actuarial societies throughout Asia to make this Regional Affiliate a success.”

Other officers include Tony Gu, FCAS, president-elect; Cathy Hwang, FCAS, secretary/treasurer; Bo Huang, FCAS, vice president East Asia; and Herb Desson, FCAS, vice president Southeast Asia. Waswate Ayana, FCAS, will act as the Regional Affiliate’s International Advisor, lending his leadership experience from his current service as president-elect of Casualty Actuaries of Europe (CAE), another CAS Regional Affiliate.

The Affiliate’s membership structure will include both members and subscribers. Fellows, Associates and Affiliate Members of the Casualty Actuarial Society are eligible for full member-

ship. Membership registrations will be accepted at the first local seminar, after which point they will be available online.

Subscribers, who may join upon approval by the Regional Affiliate Board of Directors, include insurance or actuarial mathematics teachers and professors, other persons of recognized standing in the actuarial profession, and students in a casualty actuarial student program or currently sitting for casualty actuarial examinations.

For more information about the new Regional Affiliate, please contact CAS International Relations Manager Michael Chou at mchou@casact.org. ●

Name That Affiliate!

The CAS is holding a contest to name the new Regional Affiliate. Current CAS members and candidates are eligible to submit up to two entries to CAS International Relations Manager Michael Chou at mchou@casact.org by April 30. If the exact wording of an entry is used, the contestant will win an Apple Watch Sport or iPad Air 2 of his or her choice.

See the CAS website for more details.

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What a Difference 40 Years Make BY GROVER AND WIL EDIE

Grover Edie is a “seasoned actuary,” who started in the insurance business in 1972.

His son, Wil, began his career at an insurance company in 2013 as an actuarial analyst.

When Wil decided to enter the actuarial profession, the father and son’s conversations took on a different twist. With this being the CAS Centennial Year, they thought it would be informative to share some of their dialogue with others. They hope you find it educational, enlightening, entertaining and possibly humorous.

This series of topics centers on the difference between Grover and Wil Edie’s observations of the beginnings of their careers as actuaries. The elder Edie provides running commentary in italics.

How We Discovered the Actuarial Profession

Grover: I was about to graduate college with a degree in physics. This was when NASA was laying off Ph.D.’s in physics — all that degree gave one was the opportunity to be a very educated gas station attendant. I was going to get married after I graduated, and my future father-in-law, your grandfather, told me that insurance companies used people who were good in math. He arranged for me to meet his cousin, Holland “Hod” McIntosh, in Kansas City. Hod was a vice president for Employers’ Re. He introduced me to his view of the world of insurance, and I found it interesting. He also introduced me to their chief actuary, who told me what an actuary did, and how I should go about getting into the profession. (Exams were the key back then as well.) Hod’s company did

not have any openings at the time, so he suggested that I get a job in insurance as a claims adjuster or an underwriter while I took some actuarial exams and waited for an actuarial opening to come up. I landed a job as an underwriter in Oklahoma City, and my career in insurance began. Two years later, I accepted a job as an actuarial analyst at ISO in New York City.

Wil: Dad, you might recall that when I was four or five years old I had a shirt that said, “My Dad’s an Actuary.” When I wore the T-shirt, I got tired of the questions from strangers about what an actuary was, so I just told people my dad did math for a living.

It wasn’t until I went to college and took some personality tests at the career center that I thought about becoming an actuary myself. It came up on all of my results as a job that I might enjoy. I asked you what you really did for a living and whether or not I might enjoy the work. After some thought you told me you believed I would. I did more

the work. I graduated from my university’s actuarial science program with a major in mathematics and a minor in risk management and insurance.

Comment: In the 1970s, there were very few colleges or universities that offered degrees in actuarial science. Most actuarial analysts started in another major. Today, most university placement departments know of the profession and many colleges and universities offer majors in the field.

How We Got Our First Jobs

Grover: The Oklahoma Checking office, a branch of ISO, was located above my employer. (At that time, companies had to have an outside office check their property insurance contracts for proper use of rates, rules and forms, hence the “checking office” title.) They offered to have me take an “actuarial aptitude test,” which was like taking the preliminary Exam P/1. This was a common practice then. I must have passed, because after they sent my test to the New York office,

I did more reading into what actuaries do and was surprised at the variety of work credentialed actuaries do. The common thread was using objective reasoning to solve complex problems. —Wil Edie

reading into what actuaries do and was surprised at the variety of work credentialed actuaries do. The common thread was using objective reasoning to solve complex problems, something that I liked to do. Being able to communicate those solutions to a variety of audiences adds to the problem-solving nature of

they invited me to fly up and interview with them. They made me a job offer, even though I had not passed an actuarial exam. I accepted the offer, and your mother and I were off to the Big Apple.

Wil: As you know, my first job was an internship during my junior year in college in the corporate actuarial

services department of the American National Property and Casualty Insurance Company. After graduation I was hired on at Horace Mann Insurance Company in Springfield, Illinois to work in the product administration department. Competition was pretty fierce for positions as the majority of employers I spoke with wanted graduates with two or more exams and at least one internship, sometimes more. I had one exam and one internship, so I was probably in the middle of the pack when it came to experience, but I was behind a lot of my peers when it came to exams.

Comment: In the 1970s college students did work during the summer for insurance companies. The programs were not as formal as they are now, nor offered by many companies, but the work did provide valuable experience for the students. It also enabled the company to evaluate the student for possible employment after graduation, while getting some needed work completed.

I began to see that there was a strategy behind studying for the exams. —Wil Edie

Studying for Those First Exams

Grover: When I took Exam P/1 (called “Part 1” at the time), I failed it the first time. I decided I needed help, and I had found out about a Canadian correspondence course for the exam. I did the lessons, but part way through my studies the Canadian Postal Service went on strike and I was not able to finish the



Grover Edie, circa 1985, on an outing with his two sons Wes and Wil. Wil, the future actuary, sports the infamous “My Dad’s an Actuary” T-shirt. Wes, the “white sheep” of the family, is now a children’s pastor in Milwaukee and juggler of machetes and lighted torches.

course. At the time, I think there were two “sample exams.” I accepted the job at ISO at about the time I took Exam P/1. I learned I had passed on our way to move from Oklahoma City to New York City by calling from a land phone line. This was before cell phones and before the Internet.

Wil: You will recall that I didn’t fare so well on my first exam either. I took the college course that covered half of what was on Exam P/1 and aced everything,

but when it came time to study for the exam itself I was woefully unprepared. I put in about 40 or 50 hours doing practice problems and covering the ACTEX manual, but it just wasn’t enough. I sat for Exam P/1 again the next sitting and this time I put in about 120 hours and used both the ASM and the ACTEX

manuals, but I still didn’t have the depth I needed on the harder material and failed with a 5. Since I wasn’t having any luck with Exam P/1, I skipped ahead and took Exam FM/2 later that year (I figured that maybe it would be easier, and for me it was — I passed on the first attempt). The third time I attempted Exam P/1, I put in over 140 hours and focused on just practice problems. I studied some of the topics I was struggling with, but spent 80% of my time just punching out practice problems. That time I passed with a 7, and I began to see

that there was a strategy behind studying for the exams.

Comment: Talk about big changes! ACTEX started in the early 70s. Online coaching and multiple sample exams did not yet exist then. The Internet and the sheer number of candidates taking exams have vastly changed exam preparation — and the study aids are available on your Smartphone or your tablet.

Progressing Through Subsequent Exams

Grover: When I took them, Exams 2, 3, 4 and 5 had textbooks. At ISO, those of us taking the same exam would study individually, but would get together in the morning to discuss what we had studied the night before. We got copies of old exams when we could, but that was about it.

Exams 6 and beyond had some textbooks, but for the most part the study materials were a collection of *Proceedings* papers. We started studying

by spending hours at the photocopier making copies of these articles from borrowed *Proceedings*. If we were studying in a group, we split up the copying chores.

Wil: Of course, I haven't hit the upper levels yet; I'm working on Exam 4/C right now. The preliminary exams are fairly straightforward as I said before.

However, I managed to take the exams in just the right time to be a part of the changes to Exam 3. Prior to 2014, Exam 3 was made up of two parts: 3F and 3L.

After talking to several actuaries it sounds like syllabi changes are not all that rare, and that rolling with the changes to the general syllabus is just one more step that most actuaries go through. Since the field changes rapidly with advances in technology and the industry, I understand the need for changes, but I was thrown by having to change my mind set.

Comment: The CAS does a good job at keeping its examination materials (and exams) current. I dealt with syllabus changes as I was going through the process. When I started, there were nine exams: by the time I was approaching my Fellowship, there were 10. My nightmare was that when I passed my tenth exam, the CAS would add another. Fortunately for me, they did not.

The Hows, Wheres and Whens of Taking Exams

Grover: All of the exams were paper and pencil. Exam sites were few and far between. Fortunately, in New York City, where I worked early in my career, there was always an exam site. It took about six weeks for you to get the exam results by (paper) mail. The only way you could even guess how you did was to compare

your answers to those of others with whom you studied.

Exams P/1 and two other "preliminary exams" were offered twice a year; the higher exams were offered once a year.

Wil: Now, some exams are offered multiple times a year, with SOA Exam P/1 offered six times a year. The exam frequency actually makes studying a bit tricky, though. For example, I passed Exams ST and LC in April 2014 and sat for MFE in July 2014; I had to wait until

"Portable storage" was a punch card. —Grover Edie

February 2015 to sit for my next exam which was a welcomed, but long, break. The staggered timing of the preliminary exams is more complicated than the timing of the upper levels, but the increased frequency does make taking them easier when still in school, or if you have to retake the same exam.

Comment: As interest in the profession has grown more exam locations are available now. Several exams are taken on a computer and the preliminary evaluation of pass/fail is provided as you leave the site.

Workplace Technology and Its Many Changes

Grover: At ISO, we had a time-sharing computer. Output was on green bar paper and printed overnight. You signed up for computer time. The input terminal looked a lot like a typewriter keyboard on a stand, with one addition: the programs were keypunched into ticker tape — a yellow ribbon of tape with holes in it — so you could "save" your program. Computers were kept in specially sealed rooms with floors raised

to handle the wiring and to provide cooling for the computers. Disc drives were about the size of a washing machine.

In the early days, we would use slide rules for exponential trends.

Calculators were new, and I didn't even get one until I had been with the company a few months. When I did get it, it was about 16 inches wide, eight inches high and about 16 inches deep. It was a "four banger," meaning it added, subtracted, multiplied and divided. Its display was a series of "nixie tubes"

(Google it), and it produced enough heat that we used to dry our gloves on the top of the unit in the winter time. Filings with the states were done by paper. The files were all paper. "Portable storage" was a punch card.

Phones used land lines and took up a lot of desk space.

Wil: We use paper every now and then for reports and meetings, but for the most part everything is electronic. Filings are done on SERFF (System for Electronic Rate and Form Filing, an online website companies use to file rates, rules and forms with the insurance departments). All of our files are available on shared drives or our intranet. Frequently accessed data is stored in data cubes accessible via pivot tables from a server and other common data is stored in Access tables. Reports are generated not on paper but virtually, with recall being nearly instantaneous. And importing them into spreadsheets or tables takes no time at all.

Grover: I remember seeing a fax machine for the first time in the mid-1970s. That technology has come and

gone! I never thought a portable phone would work (something your mother reminds me of occasionally) but now my smartphone also has my contacts, my calendar, and multiple email accounts. We have “face-to-face” conversations using video technology over the Web, and transfer files of all sorts electronically and almost instantly.

The U.S. Postal Service likely suffers from the proliferation of emails which not only replace paper, but do it quicker. (On the down side, we now get spam! Spam and email were not even heard of when I started out.)

Comment: The time actuaries no longer spend doing calculations can be spent on doing a better job of analyzing the results and looking at alternate scenarios and solutions.

Templates: A Trick of the Trade

Grover: Templates were copies of type-written sheets of paper that helped you through the calculations by filling in the numbers. We used them for finding out the trend for a series of values, for example. Complex calculations simply took too long, because the actual calculations were done with a calculator as we filled out the numbers for the interim steps. Someone checked the work by repeating the process and placing a pencil check mark by each number verified.

Wil: We also use templates to complete some recurring reports and to perform rate reviews. These consist of Excel workbooks linked together and data connections or tables are used to drop in the newest data. Regressions for trend analysis are simple now, since not only can Excel run them, but macros can be built to run as many regressions as you want. Once a template is built it's as easy as clicking a button to update the



Wil Edie is all grown up.

models.

Comment: Templates are classic tools with surprising staying power. PCs and their software have enabled templates to go from paper to program. Many of the templates, such as the ones to determine the mean, variance, a fitted line, and more have been replaced by functions within the software itself. Much rote work has been replaced by automation, giving more time for analysis.

Dreams Do Come True — New Tools for the Industry

Wil: In this age of computers and big data, we have all kinds of ways to verify risks and make sure that we are offering coverage to the risks that we are agreeing to; we can access motor vehicle records to verify driving records, verify losses using industry reports prior to binding, and get another look at a property using Google Maps. Other organizations such as the Highway Loss Data Institute and LexisNexis offer industry data to complement what our data can provide

to us. Access to mapping software allows a different look at rating variables, territorial data, property losses and even agency locations. These data add credibility in areas where our own experience is sparse and allow us to be priced more in line with the competition, even when our data is insufficient for proper analysis.

Grover: Of course, with these advances comes a cost: a lot more data to examine and a lot more options to consider. The actuary's work did not get easier; it just changed in scope.

Stability in the Midst of Change

Grover: A lot has happened in the 40 years since I got my start. Technological advances have made possible what actuaries in the 1970s only dreamed of being able to accomplish. Materials are much easier to obtain today — from exam materials to data — which can pose a whole different set of challenges. Less time spent gathering exam materials does not mean less time in preparation because the competition to pass exams is still intense. Companies are using all sorts of tools to set rates as precisely as possible. The actuaries have entered the financial world with capital modeling and similar activities. There were 518 members of the CAS in 1972; now we have more than 6,000 members. As our membership has grown, so have the arenas in which we work.

Even though 40 years have come and gone, bringing many changes, some things are constant. The educational processes, the wealth of our knowledge spread through our writings and meetings and, most importantly, the wisdom we share among ourselves through our community remain our greatest assets. ●

Update from the Innovation Council

BY KEVIN BINGHAM AND AARON HALPERT, CAS INNOVATION COUNCIL CO-CHAIRS

In the *Actuarial Review*, September/October 2014 issue, we shared with you why there's an urgency to innovate in today's competitive environment, and the steps the CAS is taking to instill an innovative culture, starting with the formation of the Innovation Council. Since then, the Council has set in motion a number of initiatives that will help foster innovation within the CAS and the actuarial profession.

Innovator Profile Webinar Series

CAS members who have embraced the principles of innovation to accelerate the growth of their actuarial practices are the focus of the Innovator Profile Webinar Series. The series's first webinar, "Innovation in Predictive Modeling," features Serhat Guven, FCAS, who expands on "Eight Pillars of Innovation," an article by Susan Wojcicki, then Google's senior vice president of advertising and now CEO of YouTube. Guven describes how applying the principles of innovation has contributed to the rapid development of predictive analytics in insurance pricing.

Next in the series is Melissa Salton, FCAS, CERA, who will discuss how innovation principles are applied in ERM framework development for U.S. property-casualty insurers. Future webinars for 2015 will focus on catastrophe management and other topics.

Challenging Orthodoxies

"Accelerating Our Envisioned Future through Innovation" was the theme of the 2014 CAS Leadership Summit, held last October in Philadelphia. During the

Summit, Erik Kaier, a member of the leadership team of Deloitte's innovation practice, helped attendees understand the importance of challenging an organization's orthodoxies—pervasive beliefs that often go unstated and unchallenged, and that ultimately shape strategy and create blind spots over time. Orthodoxies are ingrained ways of thinking and acting, from habit or from previous successes, and they can make it impossible to see innovation possibilities that are hiding in plain sight.

Summit attendees identified several current CAS orthodoxies, including:

- "The current 'fee for service' principle (dues, meetings, exams, etc.) is the best way to fund the CAS."
- "Actuaries are the best qualified for data science in the property-casualty arena."
- "High barriers to entry (membership) assure success of the CAS and its members."

The CAS needs to examine the actions that first made its gains possible and then determine if these actions are still useful or must change. In that spirit, intensive efforts are underway to challenge CAS orthodoxies and review how the CAS might operate if an orthodoxy would no longer be adhered to.

Innovation Master Class at the 2015 Spring Meeting

The Innovation Council is planning to offer an Innovation Master Class at the CAS Spring Meeting in Colorado Springs in May. Led by Jeff De Cagna, chief strategist and founder of Principled Innovations LLC, the class will teach at-

tendees how to construct an innovation framework and use it to develop and deliver innovative ideas and solutions in their actuarial careers. More details will be provided when the Spring Meeting program is announced.

The CAS Innovation Process

The CAS has engaged an outside consultant to help develop a customized innovation process for the CAS. This journey will provide an understanding of how the CAS innovation process can create new and meaningful value for the organization's stakeholders and unleash the potential to transform the actuarial profession as a whole. We began with an Innovation Workshop in February 2015, and we are now designing an innovation process prototype, with a target completion date of early 2015 and implementation following soon thereafter. Our goal is to design a simple, robust and functional CAS innovation process that is responsive to the marketplace, is accessible to member contributions and maximizes the impact of the organization's investment in innovation. Look for more information on this effort in our next update and on the CAS website.

Join Us!

To get involved, contact Bingham at kbingham@deloitte.com and Halpert at ahalpert@amhadvisory.com. ●

Kevin Michael Bingham, ACAS, is a principal for Deloitte Consulting, LLP in Hartford, Connecticut. Aaron M. Halpert, ACAS, is a principal with AMH Advisory LLC in New York.

EXPLORATIONS BY GLENN MEYERS

The One-Year Time Horizon for Required Capital

As longtime readers of this column will recall, I have been exploring the application of Bayesian Markov chain Monte Carlo (MCMC) models to stochastic loss reserving. With the publication of my monograph on the subject,¹ I have turned my attention to applications of these models.

In that monograph I focused on predicting the outcomes after the 10 years of development that we could get from successive Schedule Ps. While that timeframe is good for testing models, operationally it is of limited use. Insurance executives and regulators have a much shorter timeframe. We see evidence of that concern in the one-year time horizon specified by Solvency II for calculating the amount of capital to support what we Americans call the loss reserve. One rationale for the one-year timeframe that I heard was that insurers have the opportunity to make adjustments as time passes. One such adjustment could be to add or release capital supporting the reserve. If the amount of capital that might be added down the line is not too burdensome, I contend that the one-year time horizon is a good idea. The purpose in this column is to describe how to check that out using a Bayesian MCMC stochastic loss reserve model with the Schedule P data that is in the CAS Loss Reserve Database.

Given a Schedule P triangle and the

assumptions underlying the model, a Bayesian MCMC model produces (say) 10,000 equally likely scenarios consisting of loss outcomes and underlying parameters. One can use these scenarios to represent the possible future developments of the loss triangle.

What gets posted at the end of one year is not the ultimate loss. Instead, one posts the estimate of the ultimate loss given one more year of data. One way to get the distribution of these estimates is to first simulate the next year of losses and then run the MCMC model with that extra year of data to get the loss estimate. Repeating this exercise 10,000 times gives the distribution of loss estimates. Given that it takes a minute or so to get a single estimate, getting 10,000 estimates would take about a week to run on my late-model laptop.

Instead, I implemented a much faster approach. I first simulate the next year of losses. I then reweight the 10,000 equally likely scenarios with Bayes' theorem and calculate the expected value of the outcome as my ultimate loss estimate. Repeating this calculation 10,000 times, which takes about three and a half minutes on my laptop, gives us a predictive distribution of ultimate loss estimates.²

Let's look at an example. I ran 10,000 future scenarios with the correlated chain ladder (CCL) model for the incurred data of the illustrative insurer

in my monograph (and some of my prior columns) sequentially with one more, then two more, etc., and finally nine more years of data. Figure 1 shows the paths taken by the ultimate loss estimates for a sample of these scenarios. One can see that the paths level off as we include successive years of data in the estimation.

Adopting the Solvency II risk-based capital standard of the 99.5% Value at Risk for a one-year time horizon, I then calculated the capital requirement for each successive calendar year, given the result of the previous calendar years. Consistent with the leveling off that we see in Figure 1, Figure 2 shows that the required capital usually, but not always, decreases as we include successive calendar years of data in the estimation. This makes sense because we expect more precise estimates with the additional data in successive calendar years.

When the required capital (after consideration of the change in the expected loss) decreases, the insurer can release some of the capital that supports the liability. Similarly, when the required capital increases, the insurer will have to add capital.

If the required capital always decreases as we include successive calendar years of data, there would be no problem with a one-year time horizon. But since it increases sometimes, we have to consider how often this happens,

¹ The first CAS Monograph was posted to the CAS website in January 2015.

² I plan to provide the details of this calculation in a chapter of the book *Predictive Modeling Applications in Actuarial Science - Volume II*, which is scheduled to be released this fall.

Figure 1

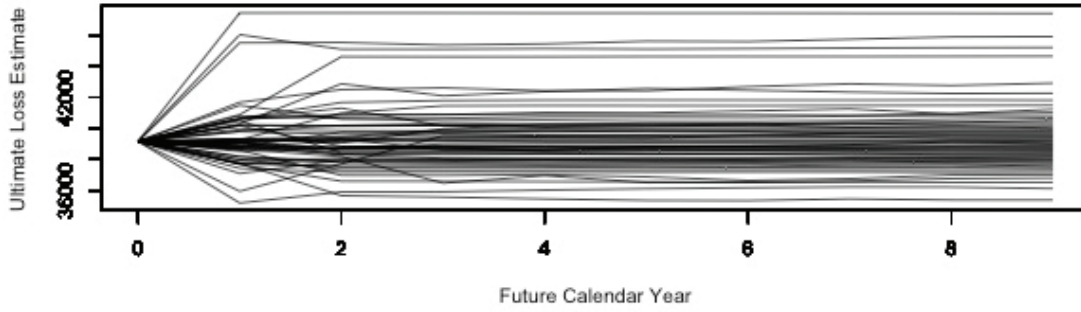


Figure 2

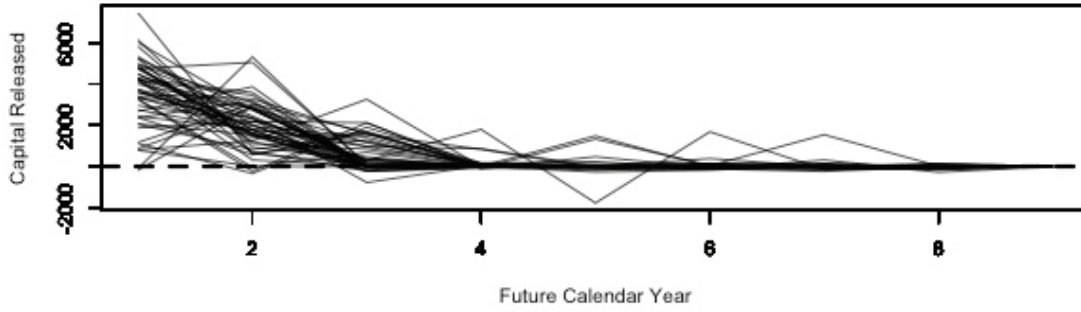


Figure 3

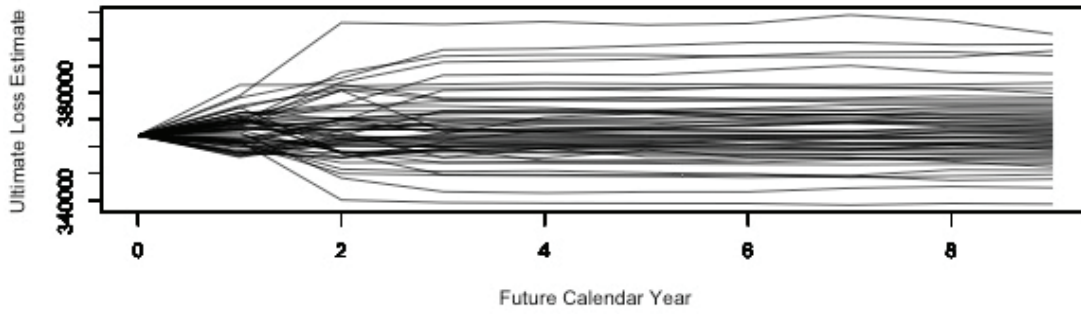
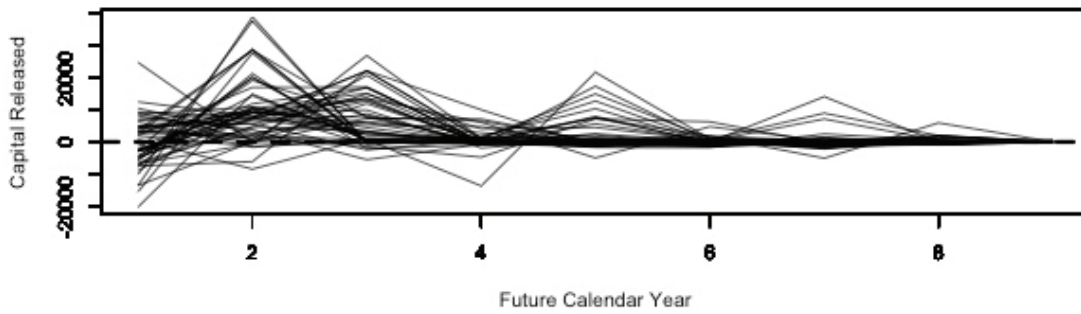


Figure 4



and if it does, how much capital the insurer must add.

At the risk of being overly simplistic, I set an upper bound to the amount of capital that must be added to be equal to the 51st lowest increase in capital that arises in our 10,000 simulations. This is one way to recognize that insurers may choose to leave the business if they incur large losses. It turned out for the illustrative insurer that 373 of the 10,000 simulations resulted in an addition to capital. The upper bound was 51.6% of the initial capital.

I did the same calculation for all 200 loss triangles in my monograph. It turned out that the illustrative insurer was one of the nicer examples. Figures 3 and 4 show sample paths for the

estimates and the capital requirements in each successive calendar year for a different loss triangle. Additions to capital occurred in 4,672 of the 10,000 simulations and the upper bound of the capital additions was 106.8% of the initial capital.

This was by no means the worst example. The upper bound of the capital addition was over 100% of the initial capital for 88 of the 200 loss triangles.

While some discussion is in order, these examples suggest that the one-year time horizon may not be adequate for going-concern insurers. In addition, it may not be best for insurance company owners. One interesting presentation at last November's CAS centennial meeting was given by Daniel Bauer and

George Zanjani.³ They discussed their work on their research project, "Allocation of Costs of Holding Capital," which is being sponsored by the CAS Committee on the Theory of Risk. One of the points they made was that the cost of capital under "stressed" circumstances will be higher than the cost of capital under ordinary circumstances. I am still thinking about the implications of that. Stay tuned.

If the 99.5% VaR capital requirement actually goes into effect, this analysis suggests that some insurers should voluntarily carry some "excess" capital. They can get their capital now at a competitive cost, or run the risk of paying dearly for it later. ●

³ <https://cas.confex.com/cas/annual14/webprogram/Session7443.html>



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IN MY OPINION BY GROVER EDIE

Winning Surroundings

Many years ago, I was getting out of an airport hotel shuttle when I heard someone call my name. When I turned around, I did not see anyone I recognized. What I did see was a friendly face who introduced himself to me as Jim Winn. In the ensuing conversation, I asked him if we had met before. He replied that no, we had not. I then asked how he knew me. He replied that he posts the photo of the new CAS Fellows at his desk so that he would learn all their names and faces. That way, when he went to a meeting, he would recognize them.

Jim Winn was a recruiter, and being able to match the names and faces of people was vital to his business. He surrounded himself with photos of people important to him — things that would help him flourish in his chosen profession. He created an environment to enable him to succeed, and succeed he did, at least with me: Twice he placed me with different companies and earned the recruiters fee.

I have tried to follow his lead, surrounding myself with objects around my workspace that I feel will help me to further my goals. I replaced my “desk toys” with functional items: a cup for pens, a coffee warmer, just the necessities. Photos are nice but are placed behind me, not on my desk. I try to separate my “work area” (i.e., top of my desk) from my “storage area,” which are file cabinets and drawers. Only the project I am working on should be on my

desk. I prefer my in/out box be outside my office, not on my desk, so people dropping things in it will not interrupt my thoughts or stop to talk. I have even been known to close my office door or turn off my phone in order to concentrate uninterrupted on a task. I highly recommend it. For instance, if you are studying for exams, make your study spot conducive to success, not a distract-

tion. At work your desk should help, not hinder, your effectiveness and efficiency.

Take a lesson from Jim Winn and surround yourself with those things that will enable you to be successful.

Jim Winn was not a member of CAS, but he was committed to helping CAS members succeed. He passed away in November 2014. Those of us who knew him will miss him. ●



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IT'S A PUZZLEMENT BY JON EVANS

The Shape of Melting Ice

Suppose a cube of ice completely melts in exactly one hour. Throughout the melting process, the temperature inside the entire ice cube remains uniform at just a tiny amount below the freezing point. The external environment maintains a temperature just above the freezing point. The heat transfer rate is uniform across the surface of the cube. Under the same conditions, how long would the same amount of ice shaped like a regular tetrahedron take to melt? How long would melting take if the ice were shaped like a torus with a major radius twice its minor radius? Is there any specific shape that would take the longest time to melt? Is there any spe-

cific shape that would take the shortest time to melt?

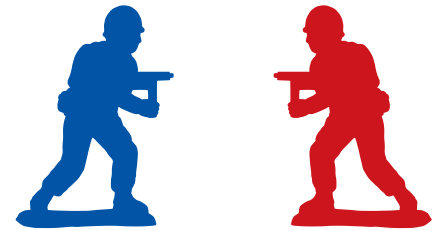
War of Attrition

In this puzzle, the Blue Army and the Red Army fight until one side is completely annihilated. At each instant, the rate of casualties experienced by each army is equal to the surviving size of the other army times the other army's firepower constant. The Blue Army wins with 85% of its initial force surviving. The questions are the following:

1. What would have happened if the Red Army's firepower constant had been tripled?
2. What would have happened if the Red Army's initial size had been tripled?

One way to solve this is with straightforward and simple (but not necessarily easy) calculus and algebra.

Suppose the fighting starts at $t = 0$. For the Blue Army, let $B(t)$ be its size and $b > 0$ be its firepower constant. Similarly, let $R(t)$ and $r > 0$ be the Red Army's size and firepower constant, respectively. Since $B'(t) = -r \cdot R(t)$ and $R'(t) = -b \cdot B(t)$, it follows that $b \cdot B'(t) \cdot B(t) - r \cdot R'(t) \cdot R(t) = 0$. Integrating with respect to t leads to the equation $b \cdot B(t)^2 - r \cdot R(t)^2 = C$, where C is constant over time. Only



the Blue Army can win if $C > 0$ and only the Red Army can win if $C < 0$. Since we know that Blue wins with 85% of its initial force surviving, it follows that $C = b(0.85^2)B(0)^2 = 0.7225b \cdot B(0)^2$. Since $C = b \cdot B(0)^2 - r \cdot R(0)^2$, it follows that $rR(0)^2 = 0.2775b \cdot B(0)^2$.

If r is tripled, then $rR(0)^2 = 0.8325b \cdot B(0)^2$ and, therefore, $C = 0.1675b \cdot B(0)^2$, which is still greater than 0. So Blue still wins, but at a much greater cost with only $\sqrt{0.1675} \approx 41\%$ of its initial force surviving.

If $R(0)$ is tripled, then $r \cdot R(0)^2 = 2.4975b \cdot B(0)^2$ and therefore $C = -1.4975b \cdot B(0)^2$. Since C is now less than 0, the Red Army wins. At the winning time t when $B(t) = 0$, the equation indicates $-r \cdot R(t)^2 = C = -1.4975b \cdot B(0)^2$. Since $R(t)/R(0) = \sqrt{1.4975 / 2.4975} \approx 77\%$, about 77% of the Red Army's initial force survives.

Solutions were submitted by Bob Conger, Mark Goldfarb, Hana Jin, Dave Oakden and Brad Rosin. ●



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