The Actuarial Review

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Grannan to Become President; Conger Chosen President-Elect

ARLINGTON, Va.—At the close of the 2000 CAS Annual Meeting in Washington, D.C. this month, **Patrick J. Grannan** will officially succeed **Alice H. Gannon** as CAS president. **Robert F. Conger** will assume the responsibilities of CAS president-elect.


Patrick Grannan


Robert Conger

CAS Fellows voted in October to elect Conger as president-elect. A CAS Fellow since 1979, Conger is a consulting actuary with Tillinghast-Towers Perrin in Atlanta, Georgia. The CAS vice president-administration from 1988-1991, Conger also served on the CAS Board of Directors from 1994-1997. Conger has served on the Audit Committee, both as a member and chairperson, the Examination Committee, and the MIS Task Force. He is currently a member of the Long Range Planning Committee and chairperson of the New Fellows Committee.

Four new directors were also elected to the CAS Board of Directors: **Ralph S. Blanchard III**, **Janet L. Fagan**, **Michael J. Miller**, and **Deborah M. Rosenberg**. The new directors

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Rosenberg Elected to EC


Sheldon Rosenberg

MONTRÉAL, Pq.—At its September meeting, the CAS Board of Directors voted to elect **Sheldon Rosenberg** as the vice president-administration. Rosenberg, a Fellow of the CAS since 1976, has served on various committees including the Continuing Education Committee as member, vice chairperson, and chairperson; the Examination Committee as member and consultant; the Ratemaking Seminar Committee as member and chairperson; the Audit Committee as chairperson; and the Long Range Planning and Valuation and Financial Analysis Committees as member. He served on the Board of Directors from 1991-1994 and is currently a member of the Discipline Committee. Rosenberg succeeds **Curtis Gary Dean**, who completed three years as vice president-administration.

The Board of Directors reelected the five other vice presidents on the 1999-2000 Executive Council for 2000-2001. These vice presidents are **Mary Frances Miller** (Admissions), **Abbe S. Bensimon** (Continuing Education), **LeRoy A. Boison** (International), **David R. Chernick** (Programs and Communications), and **Gary R. Josephson** (Research and Development).■

Inside This Issue:

From the President

Looking Back and Forth

by Alice H. Gannon

A year ago, the world looked forward to the arrival of the year 2000 with varying degrees of anticipation, excitement, and anxiety. There was, of course, widespread concern about the possible devastating problems that could result if automated systems could not handle the change to "00." But there was also the sense of new possibilities that the start of a new millennium offered. (Even actuaries with their love of technical correctness couldn't help but get somewhat caught up in the new millennium hype despite knowing that 2000 is really the last year of the old millennium.)

For the CAS, we had our own unique list of 2000 issues that promised to make 2000 a year of change, new possibilities, and new challenges. A year ago I anticipated that 2000 would be an exciting and productive year for the CAS. How did it turn out?

1. Topping the CAS 2000 list was the transition to the new exam structure and syllabus to strengthen the education process for the casualty actuary of the future. Thanks to the great efforts of many CAS volunteers, most aspects of this major transition went well. As expected, there are some areas

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In My Opinion

Informed Voters

by Walter C. Wright

Most CAS members who watched the first debate between the major presidential candidates could probably identify with the problems they had trying to debate the numbers underlying tax and budget issues—most of us have been in similar circumstances trying to explain actuarial numbers to employers or clients. Fortunately, subscribers to the Academy's *Contingencies* are able to compare the Gore and Bush Social Security proposals, which appear in the September/October issue. The editorial staff of *Contingencies* deserves credit for pursuing the Gore and Bush campaign staffs and obtaining these articles.

As I prepare this article we are entering the last month of Election 2000. *The Actuarial Review* does not include political opinions, and therefore the activities and positions of the candidates and parties are off limits. I am free, however, to comment on the recent CAS elections.

> **"Of all the Fellows eligible to vote in the 2000 election, only about 40 percent actually did."**

The results of this year's CAS election of Board members are announced in this issue. As in past years, the CAS provided members with a list of each candidate's professional activities. For the first time, however, candidates had the opportunity to provide additional biographical information, to explain why they want to be on the Board, and to identify the particular qualities that they would bring to this leadership position.

The decision to distribute additional information about the Board candidates is admirable. Many years ago, it may well have been expected that candidates for the Board would generally be known by the membership. But now, with almost 3,500 members and more than 2,000 Fellows, this expectation is unreasonable. We need information about candidates if we want to elect those who are most able to help steer the CAS through its future challenges.

There are many challenges for the CAS in the years ahead. What role should the CAS play internationally? What should the CAS's relationships be with other actuarial organizations? How should the CAS encourage and support the expansion of members into nontraditional practice areas? What should our profession's relationship be with other professionals who work in the financial arena? How should our examination program be revised to respond to new practice areas and technologies? The manner in which the CAS Board addresses these issues will have a major impact on us, not only in the long term but also in the near future.

I conducted a very small, very informal survey of CAS Fellows, to get a sense of whether the additional information about the candidates had an influence on how they had voted. Most of those whom I polled had read some of the material, and thought it was interesting. Many of them, however, had only read the information about candidates whom they knew personally, and did not read about the other candidates. No one told me that the information had influenced his or her vote. Most discouragingly, some of them had not even bothered to vote.

Of all the Fellows eligible to vote in the 2000 election, only about 40 percent actually did. That may be higher than the percentage of U.S. voters who vote in the presidential election, but it is disappointing for the CAS. Our level of voluntary participation in CAS activities is so high that our low voter "turn-out" is hard to understand. Next year, let's all take a few minutes from our busy schedules to read the candidate information, and to think about who is best suited to guiding the CAS. Our recent voting turnout of only 40 percent may be equal to an average exam pass ratio, but it represents a "failure ratio" for CAS Fellows. ■

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See What's in the Cards for the 2001 Ratemaking Seminar

The Mirage Hotel, Las Vegas, Nevada

The luxurious Mirage Hotel in Las Vegas, Nevada will be the site of the 2001 Ratemaking Seminar, March 11-13, 2001. The sessions being presented, the venue, and the Sunday through Tuesday format make this an "odds-on" bet to be the best Ratemaking Seminar ever! Promotional materials and information on the seminar will be available at the beginning of next year.

Two general sessions are planned. On Sunday, a thought-provoking mock Actuarial Board of Counseling and Discipline (ABCD) hearing will be presented. Monday's general session is a round table discussion of regulatory current events, including commercial lines deregulation, NAIC changes, data privacy, and financial services reforms.

A revamped group of concurrent sessions features many new topics, such as: Generalized Linear Modeling, Nonstandard Auto Pricing, Product Management, Nonhurricane Catastrophe Modeling, Credit Scoring, Patients' Rights Issues, and four new commercial liability ratemaking sessions. A new four-part introduction to ratemaking that provides a detailed, comprehensive rate review is also being introduced. Call papers from the Ratemaking and Data Management Research Committees will also be presented. Look for information on the CAS Web Site and in the mail in late December or early January.

Actuarial Education and Research Fund to Finance Actuarial Case Study Series

The Actuarial Education and Research Fund (AERF) (www.aerf.org) and The Actuarial Foundation (www.actuarialfoundation.org) have recently authorized funding to create an "Actuarial Case Study Series." The AERF Board of Directors will oversee this process. As this board has two directors from each North American actuarial organization (**Gary Josephson** and **Bob Miccolis** represent the CAS), all areas of actuarial practice should be covered. The individual completed case studies will be distributed electronically, with the possibility of future print distribution.

Case study authors and reviewers are needed to make this project a success. Ideally, each case study will be a collaborative effort between a practicing actuary and an academic correspondent. To encourage this, the AERF will maintain a list of practicing actuaries and academics who seek to develop partnerships. Single-author cases are also welcome, but please keep in mind that cases involving routine methodological applications (for example, automation of loss development factor selections) will receive lower priority. Similarly, applications involving the most recent techniques but lacking a serious business context are not suitable for the actuarial case study series. Guidance in the development of case studies will be available to case study authors via an editorial board.

This series will benefit the profession in both professional and academic settings. For academics, selected cases will help teachers to enliven classes by exposing students to real-life situations. For professionals, the cases may introduce novel applications of methods to problems that they commonly encounter. The case studies series can also serve as a repository to support actuarial educational efforts, such as CAS continuing education requirements.

To become involved in the process for creating and/or reviewing proposals, please contact Judy Yore (business manager of AERF) at the Society of Actuaries office (jyore@soa.org). She maintains a list of individuals interested in creating case studies and can provide the request for proposals that describes the desired case study format. Further questions may be addressed to Edward W. (Jed) Frees at jfrees@bus.wisc.edu or Stuart Klugman at stuart.klugman@drake.edu.

What's Your Story?

Do you or someone you know participate in an interesting hobby or activity outside of actuarial work? *The Actuarial Review* seeks subjects for our Nonactuarial Pursuits column. Please e-mail your leads to esmith@casact.org.

From the Readers

Issues on Rate Levels

Dear Editor:

There is an assumption contained in the fact pattern presented in [Ethical Issues Forum, *The Actuarial Review*, August 2000,] which I would like to question—the assumption is that Joe Actuary's time on the project can be imputed from his bill and his hourly rate. This assumption does a grave disservice to the honorable consulting actuaries who have built the several distinguished consulting practices operating today.

The casualty actuaries with whom I have served in the consulting ranks have often found it necessary to work long hours "over budget" without hope of being able to collect their nominal hourly rate, mostly due to their determination that they were going to deliver a good quality work product, and at the expense, if necessary, of their "spare time" (or family time). The actuaries who have made such sacrifices for the sake of "doing a good job" have often, but not always, succeeded in recouping their financial sacrifices in the form of more adequate budgets, or more satisfactory work plans, in later years' engagements.

To indict Joe Actuary on the basis of looking at his time billed, without examining his work papers for evidence of the kind and amount of work performed is unfair to him, and arguably unfair to other consulting actuaries who have found a way to deliver good work in the face of unrealistic budgets.

James A. Hall III, FCAS

Note: "Ethical Issues Forum" author, ***Chad Wischmeyer,*** *thanks Mr. Hall for his response and has no disagreement with his contention. In his scenario, Joe Actuary would have a professional obligation to invest whatever time was necessary to provide a professionally acceptable work product regardless of the agreed upon fee.*■

Latest Research

New Research Column Launched

by Roger M. Hayne

CAS research should not just be for eggheads. That message came across loud and clear from member surveys and focus groups conducted in 1999 by the Research Policy and Management Committee (RPAM) as part of their comprehensive review of CAS research efforts. RPAM's "Review of CAS Research" report, which includes recommendations to increase its effectiveness, is available on the CAS Web Site at www.casact.org/research/rpam/report.htm.

One of RPAM's most significant recommendations is that CAS research committees actively work to make research more accessible to practicing actuaries. The recommendation was a direct result of member feedback stating that simply publishing research in the *Forum* and *Proceedings* is not enough. Practitioners want faster and easier access to practical solutions to actuarial problems.

In response to this feedback, RPAM plans to develop a series of articles for *The Actuarial Review* dealing with breaking research news. This first article will discuss other key themes that emerged from the review of CAS research that will guide us in the future.

The report concluded that the CAS's research effort is fundamentally sound and is world-renowned for its practical emphasis. Papers in CAS publications are practically oriented and often written to solve an immediate problem. At the same time, CAS members are busy and may not have the time to learn and implement these new methods. The result is that new methods, even if they are "better," do not seem to be found in wide use.

If a method is actually better, how can we get it into wider use? The answer is simple—GET THE WORD OUT. The CAS Web Site is an excellent place to find research results, as the Committee on Online Services has focused on making the site a primary resource for research. However, though the Web Site may "pull" you there to get information, we need to utilize "push" technology such as articles in *The Actuarial Review* and e-mail broadcasts.

Those familiar with CAS research find that it is actually useful and answers important questions. For example, the original research commissioned by the Committee on Theory of Risk (COTOR) dealing with aggregating correlated exposures illustrates how well the process can work. First, COTOR identified a key question: How do you calculate aggregate loss distributions if the various risks are not independent? COTOR then identified a researcher, Shaun Wang, and worked closely with him to achieve the results. The final paper (www.casact.org/cotor/wang.htm) introduces a sound theoretical presentation that is easy to implement. Just to prove this, a spreadsheet was developed (www.casact.org/cotor/FFTCalc.htm) that shows the implementation of Wang's algorithm.

CAS research has historically been "bottom-up," with ideas arising from the committee members and other volunteers. This is in contrast to "top-down" research where topics and efforts are defined by CAS leadership and implemented accordingly. The CAS has been successful in its bottom-up approach but it may not always meet our members' needs. In order to do this, we need your input. If you have an idea for research that needs to be done, please visit the CAS Web Site at www.casact.org/research/suggest.cfm to suggest your idea. And then watch this space—a future article may just have the answer to your problem.■

Opinion

The Market Relevance of the Actuarial Profession

by Donald F. Mango and Thomas Struppeck

Sholom Feldblum's opinion piece in the August 2000 issue of *The Actuarial Review* questions the market relevance of the new joint Exams 3 and 4 (Actuarial Models and Actuarial Modeling). Feldblum expresses concern that the difficulty and apparent irrelevance of these exams will drive students to alternative careers. We will first address four specific points Mr. Feldblum raises. Then we will discuss what we believe is the core issue: not whether our current process drives away candidates; not even our process at all; but the market relevance of our *exam content* and hence our profession.

Specific Points from Mr. Feldblum's Article

1. "*The skilled college graduate from Harvard or Yale, from Stanford or Princeton, adept in mathematics and eager to join our global economy, has a choice. Three CFA exams give practical investment expertise and a secure job at over $100,000 a year, with much advancement potential.*"

This is an unfair comparison. The CFA designation is too easy to obtain to be in itself highly valued by the job market. It is also secondary to actual work experience in setting salary levels. Many CFA designees are stock analysts, whose value to their firm is their industry reputation in providing investment advice. Others are fund managers, whose compensation is tied to the performance of their funds. To suggest that the CFA designation on its own confers such status and job security in the volatile investment world is, at best, somewhat misleading.

2. "*The first four actuarial exams teach esoteric statistics that most employers deem unrelated to the job.*"

Exams 3 and 4 teach the fundamentals of the "actuarial approach," unique to our profession. We both have worked with financial engineers and capital market quantitative professionals, at firms such as Centre, RiskMetrics, and Goldman Sachs, who expressed great interest in learning these actuarial techniques.

3. "*Our advanced modeling and simulation exams—with study time and pass ratios out of proportion to work requirements and financial rewards—lead the best students elsewhere.*"

What leads students away? Study requirements, pass ratios, or difficulty? Every profession puts up barriers to entry. If the goal isn't difficult to attain, it is typically not highly valued—the two are inextricably bound together. Perhaps the CAS can be more open about the nature of the difficulties, but reducing the difficulty would devalue the designation. That is not in the best interest of the membership nor (paradoxically) of the students. They work hard towards designation because it is so valuable. But its market value is to some extent a result of the difficulty. Making it easier would make it less valuable for current and future members alike.

4. "*I meet hundreds of students [who ask]: should we continue in the actuarial career path, or should we take the CFA exams? What can I answer them?*"

Mathematically inclined students considering actuarial careers must first ask, "Insurance, yes or no?" No variations in exam order or question style can disguise the content. If your interests lie in the capital markets, please look elsewhere.

Inherent Conflict of Interest?

Student opinions about exams are important, but we mustn't ignore the opinion of *the major stakeholders* in this process: the employers. The actuarial designation program amounts to protracted, company-sponsored graduate work. University-based graduate students must pay for their education. Who pays for actuarial education? Our employers do.

Study time and exam fees are non-trivial expenses. How many employers feel they are getting their educational money's worth from their actuarial investments? The CAS's recent CEO survey suggests we may not like the answer. As Mark Jones, a CAS actuarial student, put it in his September 19, 2000, CASNET posting, "Our purpose is to make money for our employers. If we can't equate the exam system back to that goal then there is no point."

Members have a stake in the exams' staying difficult—maintaining the value of the designation. But are our interests at odds with those of our employers? Is our rigorous training a net benefit to our employers, after recognizing the costs? How relevant is the material we teach ourselves? How much feedback do we solicit from our employers? Where does "independence" end and "indifference" begin?

Progressive, a leading automobile insurer, employs university-educated statisticians—not actuaries—to develop their classification plans. This illustrates the point: professional relevance is first and foremost a marketplace issue. Whether we think our exams and designations are relevant is immaterial. *The marketplace decides.*

Potential changes to the exam process—fewer exams, easier to pass exams, or no exams—are immaterial in comparison to a more fundamental concern: the relevance of our exam content—whether the skills employers want are available more cheaply elsewhere. That will determine the future of the actuarial profession.

Editor's Note: The Actuarial Review *would like to hear from those members who hold CFA designations. Please send your comments to the CAS Office or send them by e-mail to esmith@casact.org.* ■

2001 Budget Reflects Exam Structure Changes and New Initiatives

In approving the 2001 budget, the CAS Board of Directors authorized exam fee increases, funds for hiring an outside education consultant (as reported in the August issue of *The Actuarial Review*), and a discontinuation of the print version of the *Notice of Examinations* and the *List of Passing Candidates*.

The CAS Finance Committee faced a challenge this spring in developing the exam-related section of the 2001 budget. The number of candidates taking exams exclusively administered by the CAS is expected to drop more than 50 percent with the implementation of the new education and examination structure in Spring 2000. In the past, Society of Actuaries candidates sat for some of the CAS exams to receive SOA credits. This bolstered CAS exam finances. Now, while the first four exams are jointly administered by the two societies, neither society grants credit for the other's higher exams. Thus, the number of candidates sitting for CAS exams is reduced.

In addition, expenses for exams have risen sharply over the past few years. Until recently, not only did members of the Examination Committee annually volunteer thousands of hours to the exam process, their companies also were expected to contribute their expenses as volunteers. Many of the "rank and file" members of the committee are relatively new Fellows. Expecting employers to fund the volunteers' expenses became a problem in recruiting new members. The CAS Board recognized this inequity and in 1997 approved a policy of reimbursement for travel and hotel expenses. This policy was extended to the Syllabus Committee in 1999 and to a greater extent within the Examination Committee in 2000.

The examination consultant is a significant new expense item in the 2001 budget. The November 1999 report of the CAS Task Force on Education and Examination Process and Procedures recommended that the CAS should consider hiring a staff actuary. The Executive Council decided as a first step to hire an education consultant for specific assignments on a contract basis. Initially, the consultant will assist CAS members with constructing appropriate learning objectives and exam blueprints, training Examination Committee members to devise good "thinking" questions, and developing an objective measure of exam length and difficulty for the Examination Committee. The education consultant is scheduled to be hired by the end of 2000.

Beginning with the Spring 2001 examinations, the traditional Study Kit will be divided into two parts—"Web Notes" and "Study Kit." Material previously included in the Study Kit and copyrighted by CAS will be available free of charge in the Students' Corner of the CAS Web Site. For those without Internet access, a printed version of these "Web Notes" will be sold from the CAS Office. The Study Kit will contain material not owned by the CAS but for which the CAS has been granted permission to reprint.

When Future Fellows (formerly the *Student Newsletter)* was conceived in 1995, it was designed to increase communication between the CAS and candidates and to replace the *Notice of Examinations* by containing information on exam study materials and review seminars. In a Web-savvy era, the CAS leadership is now comfortable with eliminating the print version of the *Notice* and *List of Passing Candidates*—but keeping the electronic version posted on the CAS Web Site. This will save approximately $22,000 annually in printing and postage.

Exam fee increases were still necessary, however, to stem the red ink. The Executive Council recommended and the Board approved an increase to $400 for Spring 2000 and $450 for Fall 2000 exams Despite these increases, a net loss of $104,000 is projected at the end of fiscal year 2001 for the CAS admissions department.■

2000-01 Woody Scholarships Awarded

Four college seniors will receive $2,000 scholarships, established by the estate of the actuary, John Culver Wooddy. The Actuarial Education and Research Fund (AERF) administers the scholarships as part of its mission to carry out research and education projects in the field of actuarial science on behalf of the actuarial profession and its sponsoring organizations.

The 2000-01 Wooddy Scholarship recipients are: Alexandre Aquereburu, Heriot-Watt University, Edinburgh, Scotland; Neil Gohill, University of Calgary, Alberta, Canada; Shannon Naujock, Bryant College, Smithfield, Rhode Island; and Benny Wan, University of Waterloo, Ontario, Canada.

The next round of applications will be accepted in March 2001. Previous Wooddy Scholarship recipients are listed on AERF's Web Site at www.aerf.org/prizes&awards.■

CAS Continuing Education Calendar

Bookmark the online calendar at www.casact.org/coneduc/cal.htm.

November 12–15—CAS Annual Meeting, JW Marriott, Washington, DC

January TBD—Seminar on Practical Applications of Loss Distributions,* TBD, TBD

March 12–13—Seminar on Ratemaking, The Mirage, Las Vegas, NV

*Limited Attendance

Committee Considering Feedback to White Paper on Academic Relations

by Dale Porfilio

The White Paper "A Partnership between the Academic Community and the Actuarial Profession" was developed by the Joint CAS, CIA, SOA Task Force on Academic Relations and released for comment during the spring. The White Paper was distributed to all members of the Casualty Actuarial Society (CAS), Society of Actuaries (SOA), Canadian Institute of Actuaries (CIA), and the Actuarial Faculty Forum (AFF). Nearly 150 responses were received. A summary of the responses is available on the CAS Web Site at www.casact.org/academ/wpfeed.htm.

All of the current programs between the academic community and the actuarial profession, such as the CAS Academic Correspondent and University Liaison Programs, received strong support. The Academic Correspondent program allows academics to receive publications, submit papers, and attend meetings with registration fees waived or reduced, and makes grants for an academic who attains the Fellow or Associate designations. The University Liaison program provides the materials needed to make a presentation about the career to students. The program that received the strongest support was to continue the list of colleges and universities offering an actuarial science program.

Of the proposed new programs in the White Paper, the creation of a clearinghouse that would link faculty and business actuaries to work on practical actuarial projects received the most support, with nearly 85 percent of respondents approving. Another new program designed to involve individual members directly with academic institutions received support from over 80 percent of the respondents. However, a proposed program that would give credit for all jointly sponsored CAS and SOA examinations, by means of taking a comprehensive exam, received favorable support from only 49 percent of responses.

The Joint CAS, CIA, SOA Committee on Academic Relations is reviewing the responses. This committee will develop recommendations for implementing some or all of the proposed new programs.■

Board Launches Online Question and Answer Forum

The CAS Board of Directors has launched a question and answer forum on the CAS Web Site that has opened the lines of communication between the Board and CAS members. The new feature, "Questions and Answers with the CAS Board of Directors," can be accessed through the member section of the Web site at www.casact.org/private/boardqanda.htm.

The Board encourages participation in the forum because input from the membership shapes the Board's position on current issues and can alert the Board to other matters of importance. The Board is particularly interested in members' thoughts on issues such as the education process, emerging practice areas on which to focus more research and continuing education, the CAS's international role, and how the CAS can better serve its membership.

The online forum is an extension of the open question and answer sessions traditionally held at CAS meetings. With the advent of the online forum, the sessions at meetings will only be scheduled when needed for discussion of pressing issues.

Members can submit their questions to the Board by completing an online form. The question and answer will then be posted to the Web page. A listing of previously submitted questions and answers will be maintained so that all members can see past discussion.■

D.W. Simpson Makes CAS Trust Donation

The Trustees for the CAS Trust (CAST) are pleased to announce that D.W. Simpson & Company has donated $10,000 to the Trust on September 8, 2000. This brings the total contribution of the D.W. Simpson & Company to $50,000 to the Trust. The CAST was established in 1979 as a nonprofit 501(c)(3) organization to afford members and others an income tax deduction for contributions of *Proceedings* volumes and funds to be used for scientific, literary, research or educational purposes. A CAS Trust scholarship program will be announced in the near future. The CAS is grateful to the D.W. Simpson & Co. and its employees for their contribution to the advancement of actuarial science.■

From the President

From page 1

where improvements are still needed, and even before the May exam sitting there were many CAS volunteers hard at work to identify enhancements and implement them as quickly as possible. I know some CAS members and students are impatient to see more improvements sooner. What everyone may not be aware of is that there are many improvement efforts already underway.

> **"Special CAS task forces...are aggressively pursuing a wide range of initiatives that will move the CAS toward an ever better education and examination system."**

While in every year the admissions committees work to make the education and examination process better, in 2000 there has been an extra emphasis in that regard. Those efforts will continue into 2001. Special CAS task forces, as well as the standing committees, are aggressively pursuing a wide range of initiatives that will move the CAS toward an ever better education and examination system.

I encourage all Fellows who have any concerns or ideas about our education process to volunteer to work on these committees and task forces. While constructive criticism by itself is always welcome, the CAS members who really make a difference are those who offer not only criticism but also solutions along with their time and energy in the implementation of those solutions.

2. Another change for 2000 was a revised governance structure to better support the CAS's international strategy. The addition of a vice president-international and associated committee structure will provide enhanced services to CAS members working internationally and focus more efforts on the CAS's role in the international actuarial community. With these changes the CAS is already more involved and visible within the International Actuarial Association. We will now be able to respond more efficiently to requests from other countries for assistance with "nonlife" actuarial issues. We also brought a continuing education opportunity closer to our members in Europe by cosponsoring in London a Special Interest Seminar on Dynamic Financial Analysis with the Institute of Actuaries. Plans for another seminar in October 2001 in Scotland are well underway.

3. In 2000 we launched four new advisory committees to support CAS members who already work or who want to work in four key nontraditional practice areas. These four committees will identify research and education initiatives the CAS should pursue in the areas of Asset/Liability Management and Investment Policy, Valuation of P/C Insurance Companies, Enterprise Risk Management, and Securitization/Risk Financing. Casualty actuaries are already well suited to the analysis and solution of a much broader array of risk challenges than those in our traditional practice areas. With the CAS now committed to a well-focused effort to expand casualty actuarial science and the associated education of casualty actuaries further into these four new areas, there will be even greater value for casualty actuaries to bring to a wide range of business and financial risks.

4. This year saw the introduction of a dues discount for members who chose to receive the *Forum* and *Discussion Paper Program* books electronically. The CAS's Committee on Online Services also continued their expansion of the information and services available to members and the public via the Web site with the addition of the complete collection of the ASTIN *Bulletin*, more back issues of the CAS *Proceedings*, numerous CAS surveys, *Future Fellows* publications, and the list goes on and on. The CAS has a very active and effective group of volunteers and staff to assure the best online service possible and they definitely delivered that in 2000.

Online Dues Payment Form Available

CAS members now have the option of paying their membership dues electronically through a secure form on the CAS Web Site. CAS Subscribers and Academic Correspondents can also take advantage of this new service. Every member was mailed a dues notice that included information on paying dues online. Access the online form at www.casact.org/aboutcas/dues.htm.■

5. Growth of our society continued at a rapid pace with Mike Walters' 1987 prediction that the year 2000 would see the CAS gain its 2,000th Fellow coming true. Our Fellowship rolls have risen from 1,923 at the end of 1999 to 2,068 today. Our total membership grew from 3,282 to 3,468. To assure continued excellent staff support of the CAS membership, we acquired additional office space (same location at 1100 North Glebe Road, Suite 600) and expanded the staff by three positions. The CAS has one of the most outstanding staffs of any professional organization. It is a small but incredibly productive and skilled group of individuals. I encourage all CAS members to get to know them and thank them for their great service to our organization.

There are many more activities I could mention, but I think this list gives a sense of how exciting and productive the year 2000 was for the CAS. Due to the efforts of many dedicated volunteers accompanied by strong staff support, it was a really great year. Having accomplished so much in a year that was, in fact, the dying breath of the old millennium, just think how much we can accomplish in 2001 when the new millennium begins!■

Loss Reserve Survey Reveals Diverse Solutions to New LAE Definitions

Effective January 1, 1998, the NAIC adopted a change in how loss adjustment expense (LAE) is split into categories within Schedule P of the property and casualty statutory Annual Statement. Through 1997, LAE was split into Allocated Loss Adjustment Expense (ALAE) and Unallocated Loss Adjustment Expense (ULAE). Starting in 1998, new categories were introduced that are now called Defense & Cost Containment (DCC) and Adjusting & Other (A&O). Generally, DCC expense includes all defense and litigation-related expenses, whether internal or external to a company, while A&O expense includes all claims adjusting expenses, whether internal or external to a company.

Earlier this year, the CAS Committee on Reserves surveyed loss reserve practitioners on how the change in the definition of loss adjustment expense affected loss reserving since 1998 and how it may impact future years and other aspects of actuarial work. This survey will be discussed at the upcoming CAS Annual Meeting at a concurrent session entitled, "NAIC Redefinitions of Loss Adjustment Expense." The survey was a 17-item questionnaire developed by the Committee on Reserves and approved by the CAS Executive Council. Out of 3,239 questionnaires mailed, 74 were completed. The survey also contained several open-ended, write-in questions. The following are the key findings of the survey:

- Of the respondents, 63.5% reported that they were company reserving actuaries, while 25.7% reported that they were consulting reserving actuaries.
- In describing how their company classified ALAE vs. ULAE prior to the change on January 1, 1998, 58.1% reported using claim-specific/nonclaim-specific as their criteria as opposed to external vs. internal classifications (13.5%) or a combination (23%).
- For 56.8% reporting, the major change for their company was to reclassify External Claim Adjusters from ALAE to A&O.
- 82.4% reporting said that they implemented changes with the 1998 Annual Statement.
- 55.4% said that their company selected the Calendar Year (all accident years for calendar year 1998 and beyond) method to implement the new LAE split.
- 54.1% reported using an Expense Tracking System, while nearly one-quarter (23%) used Formula Allocations.
- 55.4% said that their company is currently maintaining internal expense reporting under the former categorization while adopting the new categorization for statutory reporting.
- Over half (58.1%) said that their company was not using the new expense categorization for any purposes other than Annual Statement reporting.
- As to areas they believed needed further research regarding the impact of the new LAE categories, the most popular responses were Reinsurance Contracts (18.9%) and Ratemaking Practices (13.5%).

For the write-in questions, respondents were asked to explain how their companies accomplished a reclassification of expenses from categories where claim detail was not maintained (for example, internal defense attorney costs, formerly categorized as ULAE) to categories such as DCC, where at least some detail (for example, accident year) would be required.

A sample of the answers follows. It illustrates the wide range of solutions among the respondents.

- Claims staff estimate their time between the categories DCC and A&O—not revisited in 1999. Use loss payments to allocate between accident years.
- Estimate Total Paid ULE/DCC as a percent of Total Paid ULE using Salaries plus Overhead. Allocate Paid ULE/DCC to Line of Business using judgment percentages. Allocate Paid ULE/DCC to Accident Year using Calendar Year Closed Claim Costs + Open Counts.
- Obtain as much detail as possible and use interviews of claims personnel and gut feeling to make projections.
- Make a wild guess. Make data look like what it *should* look like or what they *want* it to look like.
- Characterize insignificant internal expenses as DCC and call all internal expenses A&O. Continue to use the old ULAE accident year allocation rule of 45/5.
- For treaty reinsurance, use an arbitrary formula reallocation, varying by subject treaty. (The treaties follow the old definition!) Survey MGAs. If they respond, use what they gave. For those who didn't respond, prorate following the pattern of those who did.
- If the detail is unavailable, just use allocation procedures to put the new DCC dollars somewhere. Nothing in the regulation says what type of detail one has to maintain on the new expenses.
- Calculate ULAE reserves under the old definition by coverage and accident year, then estimate the percentage attributable to internal defense attorney costs, based on input/claims data from our law department. These percentages are mainly based on actuarial judgment.

The next write-in question gave the following background and then asked what the reserving challenges of dealing with this are and what solutions they had found. It also asked how they had changed their reserving practices.

On a calendar year basis, the new categorizations apply to the incremental calendar year change across all accident years beginning January 1, 1998. From a Schedule P standpoint, this

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means for accident years 1997 and prior, the 12/31/98 evaluation of ALAE (that is, the current column) and all future evaluations (or columns) will reflect a *mixed* definition. Accident year 1998 and future accident years will be under the new DCC definition. On an accident year basis, the new categorizations will apply to only accident year 1998 and future accident years. Prior accident years will continue to runoff under the old definition of ALAE.

The following are a few of the many detailed responses we received on this topic. The feedback illustrates the diversity of reserve challenges that companies are facing.

- CY Basis: Compare total LAE projections—new vs. old definition—to benchmarks that have not changed (premium, loss reserves, paid LAE, etc.). We've found that percent of total LAE which is A&O is greater than that which was ULAE. We apply "paid-to-paid" method to determine A&O/Loss ratio as the basis of projecting A&O reserves. We have tried to establish "paid-to-paid" DCC/Loss factors as well.
- The company has maintained internal expense reports that utilize the old ALAE/ULAE segregation. They will continue to do this until sufficient experience has been gathered using the new categories.
- Significant judgments are required in the selection of projection factors. We calculate total LAE reserve needs using historical triangle of ULE & ALE (DCC + A&O) and make sure that the judgment calls we're making for DCC and A&O individually, yield an overall LAE reserve similar to what we develop in total.
- Internally we have not changed our reserving practices and still review ALAE and ULAE reserves separately. There is just an extra step required to split ALAE into DCC and A&O for statutory reporting.
- Reserving practices not changed. Still analyze ALAE separately from ULAE. The differences between ALAE & DCC and ULAE and A&O are dealt with in the data reconciliation of the actuarial report.
- For older years we did not have the detail to construct expense triangles under the new definition; therefore we had to combine all expenses to form a LAE triangle to determine expense development.
- Easy for those who don't change. We will let you know when they move to new definitions. On CY basis, restating screws up triangles.
- Won't runoff calendar year 98 and subsequent be under the new DCC definition? Our reserving practices have not changed at all. We are still developing our ALAE/external and ULAE/internal reserves the same way we have in the past. What has changed is that we now have to allocate our developed ALAE/external reserve to the new DCC and A&O categories. We are allocating to these categories based on paid DCC and A&O expenses collected for calendar year 98 and subsequent. We consider all ULAE/internal reserves to be A&O. We are also collecting and building historical triangles of external DCC and A&O paid expenses for AY 1998 and subsequent. As soon as sufficient history is available we will use triangular analysis to develop our external DCC and A&O reserves.
- The biggest issue is separating the A&O component of ALAE reserves. We can separate the historical payments of ALAE by component. We looked at historical A&O payments as percent of total ALAE payments by accident year at different evaluation points (12, 24, 36 uses, etc.) From that, we could derive the percent of total bulk ALAE reserves for A&O by accident years at different evaluation points.
- We analyze our ALE and ULE reserves separately using an accident year change in Paid ALE to Incurred L/R estimate for ALE and a calendar year Paid-to-Paid and Paid-to-Paid plus O/S as an estimate of the relationship of the ULE O/S to Loss O/S for ULE. In all but one Reserve Analysis there appeared to be no distortion in the rate of ALE to ULE. In the one we used the latest year diagonal, which effectively eliminated the distortion. We will probably change to a Paid-to-Paid method and analyze the reserve in total.
- Internally, we have maintained the old definitions, so we have not changed our basic reserving practices. Our challenge is in estimating how much "old definition" ULAE to move to DCC for statutory purposes. Our system can capture ALAE (old definition) moving to A&O, so that hasn't been as difficult.
- We continue our reserving practices based on old definitions and allocations.

As to the impact the categorization change will have on industry Schedule P data as individual companies make different choices on how they will handle the change, a sample of the responses follows:

- Industry Schedule P data for all companies combined will be distorted by the change and by different ways of handling the change. Could impact companies that use industry data for benchmarking.
- A big mess.
- Will only be able to analyze total LAE expenses and reserves for accident years prior to 1998.
- Minimal impact.
- Industry Schedule P data will be a mishmash of various company definitions.
- Industry conglomerate data could be rendered useless for 10 years, especially for small companies who employ outside adjusters.
- Schedule P data will be distorted. The reliability of any triangular analysis based on Schedule P data during the 10-year phase-in period must be questioned.
- This change in practice makes absolutely no sense whatsoever. I have been told that the reason for the change is that ALE is not comparable between companies (some companies utilize outside adjusters more than others). Well, companies are different and though old rule

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measured that difference, the proper place to break out legal and adjusting was in Part 4 (A/S) expense class.

- There will be less consistency in industry data going forward. It was my understanding that the primary reason that this change was adopted was to allow improved direct comparisons between companies. I do not support that reason as being more important than ratemaking, pricing, reserving, underwriting, and reinsurance reasons for continuing allocating as many claim-specific dollars as possible to individual claims. Regulations should benefit policyholders and not simply add to the expense dollars policyholders should pay.

The respondents were also asked how users of Schedule P adjust for possible distortions in the data. A sample of the answers follows:

- The same way you raise teenagers—any way you can.
- Not use Schedule P. Ask for actuarial report.
- Ignore 1998/1999 Schedule Ps for the development of ULAE/ALAE ratios. We've already seen this with a 1998 financial exam—the auditors ignored the 1998 Schedule P and used 1997 Ps to develop ULAE ratios. We were told that this was how they were handling the problem.
- This is a good question. Historically, Parts 2 and 3 have been prepared on a loss plus allocated basis given the fact that, by their very nature, unallocated loss adjustment expenses could only be assigned by accident year on a judgment basis. I am not clear what is expected to show up in Parts 2 and 3 now. To the extent any ULAE-type losses get into Part 2, loss development measures will be distorted. To the extent they get into Part 3, paid loss development patterns will be distorted. Who knows how users will adjust for these distortions, or if they even can?

Twenty-four respondents wrote additional comments. The following comments reflect the consensus of that group.

- In my opinion, this change was poorly thought out and serves no purpose at all. I am unaware of any beneficial purpose that will ultimately be served.
- I think the whole change was pointless.
- This resulted in a greatly increased amount of work on my part and on company personnel parts for no discernible benefit. It also caused great confusion as there is no clear definitions of what is A&O and what is DCC.
- It causes headaches for me regarding statutory reporting but since my company management has decided against making internal reporting changes the burden of the change pretty much falls on me.
- It is possible that companies that have to reclassify internal litigation expenses will find their reserves less adequate and companies reclassifying adjuster expenses will find their reserves more adequate.■

Allen Gould *(left) and* ***Orin Linden*** *won the 2000 Reserves Prize for their paper, "Estimating Satellite Insurance Liabilities" at the CLRS in Minneapolis last September. Read the prize paper and other Reserves papers at www.casact.org/pubs/forum/index.htm.*

CAS Welcomes New Affiliate Member

Sean Ringsted
Tempest Reinsurance Company
Hamilton, Bermuda
Fellow, Institute of Actuaries

FCAS Chosen SOA Leader

SCHAUMBURG, Ill.—W. James MacGinnitie has been elected president-elect of the Society of Actuaries (SOA) for 2000-2001. He is a Fellow of both the Casualty Actuarial Society and the Society of Actuaries. MacGinnitie has also served as the 1979-1980 president of the CAS and the 1988-1989 president of the American Academy of Actuaries.

MacGinnitie is the retired chief financial officer of CNA Financial, Chicago. He was formerly director of actuarial services at Ernst & Young, LLP and a managing principal of Tillinghast Towers-Perrin. MacGinnitie lives in Chicago.

He took office as president-elect on October 17 at the SOA annual meeting in Chicago. His term as SOA president will begin the following October.■

AERF Announces Grants Competition

The Actuarial Education and Research Fund (AERF) announces the 2001 Individual Grants Competition to support the advancement of knowledge in actuarial science. Individuals and groups may apply for a grant.

Grant proposals must be received by November 30, 2000. Obtain application forms and submission guidelines from Paulette Haberstroh (phaberstroh@soa.org). More information is available on the AERF Web site (www.aerf.org) and from AERF Executive Director Chris Huntington (chunt@math.lsa.umich.edu).■

Ethical Issues Forum

Should Reserves Reflect Anticipated Savings?

Editor's Note: This article is part of a series written by members of the CAS Committee on Professionalism Education (COPE) and the Actuarial Board of Counseling and Discipline (ABCD). The opinions expressed by readers and authors are for discussion purposes only and should not be used to prejudge the disposition of any actual case or modify published professional standards as they may apply in real-life situations.

Jane Smith, FCAS, MAAA is a consulting actuary. Jane has been asked to complete an actuarial analysis of Widget Incorporated's (Widget) self-insured workers compensation program. Widget has been self-insured for workers compensation for the past 20 years but has never staffed a risk management or safety department. As might be expected, Widget's self-insured losses are approximately 50 percent higher than losses that would be expected based on industry rates and Widget's level of payroll by job class. Claim frequency is approximately 20 percent higher than the expected level.

Jane has just completed her loss reserve analysis, projecting a required retained loss reserve of $50 million for past accidents and $10 million for the prospective accident period.

Widget has just hired Betty McCormick to fill the newly created position of Risk and Safety Manager. Betty joins Widget from Trinkets, Incorporated (Trinkets), Widget's main competitor. During Betty's tenure at Trinkets, workers compensation costs and claim frequencies were reduced by 75 percent and 50 percent, respectively. Jane provided actuarial consulting services to Trinkets and was able to see firsthand the reduction in losses and claim frequency achieved during Betty's tenure.

Betty has briefly studied the situation at Widget and believes that the programs implemented at Trinkets can also be effective at Widget. She is beginning to implement at Widget the programs that were so successful at Trinkets and feels very strongly that it is appropriate for Jane to reduce her loss reserve and prospective period estimates to incorporate the likely impact of these programs. Betty thinks that it is reasonable to expect a 33 percent drop in the cost associated with historical accidents and a 50 percent reduction in the prospective period. Betty's compensation is partially tied to the reduction in losses that she can achieve.

In addition to the company financial statement accrual, Jane is also required to issue a statement of opinion regarding Widget's loss reserves to the self-insurance regulators.

Can Jane produce a report and corresponding actuarial opinion that incorporates Betty's estimates of the likely impact of these new programs?

Yes

It is appropriate for actuaries to consider operational changes in the loss projection process. At least two specific professional statements/standards give us guidance in this area.

- The Considerations section of the *Statement of Principles Regarding Property and Casualty Loss and Loss Adjustment Expense Reserves*, the Operational Changes paragraph states: "The computation of the reserves should reflect the impact of such (operational) changes."
- Paragraph 3.5.2 of Actuarial Standard of Practice No. 36 *Statement of Actuarial Opinion Regarding Property/Casualty Loss and Loss Adjustment Expense Reserves* states: "The actuary should consider whether there have been significant changes in conditions particularly with regard to claims, losses, or exposures that are new or unusual and that are likely to be insufficiently reflected in the experience data or in the assumptions used to estimate loss and loss adjustment expense reserves." However, Jane should remember to disclose this change as required by paragraph 4.5 in the same Standard.

No

It would be inappropriate for Jane to reduce her figures without any hard evidence of the impact of these new programs. This is particularly true since Betty's compensation is tied to loss experience. It is very common for new risk managers to feel that the changes that they implement will produce significant savings. While incorporating operational changes is appropriate, the statement of principles and the standard of practice do not require the actuary to use an unsubstantiated figure.■

CORP-Accepted Papers Posted on Web

The CAS Committee on Review of Papers has released its quarterly update of recently accepted papers. Electronic versions of the accepted papers are located on the CAS Web Site at www.casact.org/pubs/corponweb/papers.htm. The CAS Editorial Committee will be editing these papers for inclusion in the *Proceedings of the Casualty Actuarial Society*. As of October 1, 2000, CORP has accepted the following papers:

1. "Using Claim Department Work Measurement Systems to Determine Claim Adjustment Expense Reserves" by **Joanne Spalla**.
2. "The Duration of Liabilities with Interest Sensitive Cash Flows" by **Richard Gorvett** and **Stephen D'Arcy**.■

Volunteering in Romania

by Mark R. Shapland

One of the hallmarks of our Society is the tremendous amount of volunteer work that keeps the organization running. Usually, the volunteer work can be done in your office, or in some exotic location like Chicago or New York in the dead of winter. But occasionally, being a CAS volunteer involves traveling outside of the United States.

This past June, I was given the opportunity to serve the worldwide actuarial community by traveling to Bucharest, Romania to put on a workshop for the Romanian Actuarial Association (RAA). The RAA was set up at the end of 1998 as a professional nongovernmental organization. Its main objectives are the recognition, support, and promotion of the actuarial profession in Romania.

According to Adina Lupea, the President of the RAA, "the first priority of the RAA is the training and development process." With this in mind, she contacted the Financial Services Volunteer Corp (FSVC) to ask for assistance. The FSVC subsequently contacted the CAS, who responded by sending out a call for volunteers to put on a workshop covering reserving and pricing topics. The timeline from first contact to departure for Europe was only a few weeks, but since I had already organized workshops covering these topics in the past, I decided to take up the challenge.

The FSVC was founded in 1990 after the historic changes in the Soviet Union and Central Europe. FSVC's mission is to tap into the expertise of financial professionals to help develop the financial infrastructure of countries that are establishing free-market economies. FSVC does this by working with financial institutions, in both the public and private sectors, to help them address practical and policy bottlenecks to development.

FSVC operates with funding from USAID and private sources. By using volunteers like myself, it is able to stretch its resources to help complete the most projects in as many countries as possible. I like their approach to using foreign aid because we are teaching others how to operate an efficient economic system and not just sending food or some other transitory aid (although this also has a place in foreign aid). For the volunteers, FSVC pays for airline tickets and other out-of-pocket expenses, while the volunteers donate their time and expertise. Their Web address is www.fsvc.org.

> **"Actuarial activity is a very new concept in Romania and there exists only a very small group of persons having the necessary skills and capabilities for this profession."**

Upon arriving in Bucharest, I was met by Lupea, who served as my host and tour guide. Bill Taylor, the local FSVC representative, was also there to meet me. Lupea and Taylor provided invaluable assistance and guidance in organizing and putting on the workshop.

Romania is a beautiful country in Eastern Europe, surrounded by Bulgaria, Serbia, Hungary, Ukraine, Moldova, and the Black Sea. Romania was under the communist rule of their leader Nicolae Ceausescu until the revolution in 1989. The country has been struggling to develop a free-market economy ever since the revolution. One visible sign of how difficult it has been are the many state-owned buildings in downtown Bucharest that have not been completed since construction stopped in 1989.

In Romania, the free-market insurance industry is in its infancy and although the insurance market has been slowly growing, industry profits are on the decline due to increased competition and rising claim costs. Actuarial activity is a very new concept in Romania and there exists only a very small group of persons having the necessary skills and capabilities for this profession. Thus, the volunteer support provided by both the FVSC and CAS was welcomed and appreciated.

A major impediment to the healthy development of the insurance industry in Romania over the past 10 years has been the legal instability and lack of regulations. Many foreign companies have been reluctant to start new insurance operations in this environment. Therefore, one of the goals of the workshop was to set aside time for the group to discuss various regulatory issues and to draft some regulatory proposals.

For anyone volunteering in a foreign country, there are unique challenges that come along with it. First is the language barrier. Even though many people in Romania have very good English skills, the workshop was run using simultaneous translation. This makes terminology and answering questions asked in Romanian particularly interesting. Next are preparation and equipment problems. Our goal was to have all of the workshop materials translated and printed prior to my arrival, but the short time frame made this impossible. Making sure that my computer worked with the Romanian equipment also proved to be a challenge. Finally, we had some last minute scrambling to accommodate the size of the group—the target group was 12-15 participants, but we ended up having over 40 participants. Lupea was indeed delighted by the level of interest in the workshop.

Along with the challenges come some unique opportunities and great benefits. In this case, the opportunity to meet so many of our Romanian colleagues and to help them develop their skills was very rewarding for me per-

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25 Years Ago In *The Actuarial Review*

(From a column by ***Norman J. Bennett****)*

Maunderings

"*Cet article doit être écrit en français entierement. J'éspère que mes coleagues Franco-Canadiens comprenderont et m'excuseront de ne pas le faire.*

For our monolingual readers the above sentences mean that we are going to talk about Canada and its intrepid little band of casualty actuaries. This has only lately become a task for which I could work up any enthusiasm. Actuaries in Canada, until recent days, fell into two classifications: transplanted English life specialists with hyphenated names or two middle initials—and **Carl Wilcken**, who reportedly suffered the loneliness and anxieties of a Maytag repairman.

But suddenly and quite without any promotional buildup that I was aware of there have been appearing here and there in the Provinces typically fair-haired young Associates and Fellows flaunting their new halos and giving Canada a skilled if modest nucleus of casualty actuaries.

It has been my pleasure to work with most of these men in Toronto during the past year at the newly formed Insurer's Advisory Organization of Canada…The entire tactical reserve of Canadian casualty actuaries was called up to form the [actuarial] committee. Since the result was still rather spindle-shanked, three American actuaries of companies with substantial interests in the Canadian market were invited to expand the committee to ten members."

Editor's Note: Norman implied that there were only seven CAS members in Canada in 1975. This might understate the actual number, but probably not by much. The current CAS membership directory identifies 217 CAS members who have addresses in Canada; and they are not all men, as they evidently were in 1975. ■

Actuarial Science Positions Available

The University of Waterloo

The University of Waterloo seeks applicants for a tenure track position in actuarial science at the assistant or associate professor level. Applicants must have a Ph.D. with research in an area of the mathematical or statistical sciences, and interests closely related to actuarial science; professional actuarial qualifications and experience are an asset. Department interests in actuarial science cover a wide range of topics in statistical and probabilistic modeling in insurance, risk theory, and stochastic models in finance.

Applicants must have proven ability in or potential for research, as well as good teaching and communication skills. Duties include undergraduate and graduate teaching, and development of an independent research program; the appointee will also be expected to acquire actuarial qualifications to the level of ASA or equivalent. Salary is commensurate with qualifications and experience. This appointment is subject to the availability of funds.

The effective date is expected to be September 1, 2001 or later; closing date for applications is January 31, 2001. Submit a CV and arrange for three letters of reference to be sent to: Professor M.E. Thompson, Chair Department of Statistics and Actuarial Science, University of Waterloo, Waterloo, Ontario Canada N2L 3G1. Canadians and permanent residents will be considered first for this position. The University of Waterloo encourages applications from all qualified individuals including women, members of visible minorities, native peoples, and persons with disabilities.

The University of Iowa

The University of Iowa has two positions in actuarial science available: a nontenure-track lecturer and a tenure-track assistant professor, starting in August 2001.

The nontenure-track lecturer position requires a Ph.D. or M.S., Fellowship or Associateship in a professional actuarial society, and experience in the industry and university-level teaching. The applicant must also have demonstrated excellence in teaching and professional service.

The tenure-track assistant professor position promises excellence in teaching and creative research. A Ph.D. plus Fellowship or Associateship in a professional actuarial society is required. Training in economics and finance is also desirable.

Selection for both positions begins November 11, 2000, and will continue until the positions are filled. To apply for either position, mail or e-mail a CV and three letters of reference to Actuarial Search, Statistics & Actuarial Science, University of Iowa, Iowa City, IA 52242, or broffitt@stat.uiowa.edu. Visit the Department of Statistics and Actuarial Science at the University of Iowa at www.stat.uiowa.edu for more information. Women and minorities are encouraged to apply. The University of Iowa is an Affirmative Action Equal Opportunity Employer. ■

Election

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will serve three-year terms. They succeed **Paul Braithwaite, Jerome A. Degerness**, **Michael Fusco**, and **Stephen P. Lowe**. As the most recent past president, Gannon will serve as chairperson for the CAS Board of Directors during 2001.

The number of Fellows voting this year was 820, or 39.7 percent of the total number of Fellows. Ballots cast last year totaled 881 or 45.7 percent of the total number of Fellows eligible to vote. Members of the CAS Nominating Committee for the 2000 CAS elections were chairperson **Robert A. Anker**, **Albert J. Beer**, **Allan M. Kaufman**, **Steven G. Lehmann**, and **Mavis A. Walters**.■

Volunteering

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sonally. The quality of their questions and the fact that almost all of them stayed to the end of the workshop showed me how genuinely interested they were in learning new skills. Even those who did leave apologized for having previous commitments and expressed interest in coming to another workshop in the future.

Another benefit is the chance to visit a foreign country and to experience some of their culture. One of the highlights of my trip was a tour of the castle at Sinaia, where I was able to buy a handmade tablecloth for my wife for a mere 735,000 Lei ($35). The timing of my trip also coincided with the 2000 European Cup soccer tournament and we were able to cheer for the Romanian national team along with thousands of fans in the square in front of my hotel as they played the Germans (one of the favorites) to a 1-1 tie. The Revolutionary Square in front of the hotel also has some historical significance, since it is the plaza where the overthrow of the Ceausescu government started back in 1989—hence the name.

Based on my experience in Romania, if you have the opportunity to volunteer in a foreign country, I highly recommend it as a very rewarding and fulfilling experience.■

Brainstorms

A Question of Balance

by Stephen W. Philbrick

I was recently in a session where we were discussing the pricing of a sizable piece of business. The speaker discussed various aspects of the potential transaction, and remarked that one of the concerns is the impact it would have on our line of business "balance." As part of our strategic plan, we had goals relating to the proportion of business in various segments. This piece of business would add to a category that was "overrepresented."

He remarked, however, that if the price were sufficiently high, it could make up for the lack of balance. This conclusion seemed reasonable, but it wasn't immediately obvious how to quantify the trade-off. I decided to give some thought as to how to calculate the additional price needed to make up for a reduction in a balance goal.

"I thought this would be a quick exercise....It turned out to be more complicated than I imagined."

I thought this would be a quick exercise—finding some way to quantify the concept of "balance," then calculating how much additional premium a particular risk would require if it were adversely affecting balance. It turned out to be more complicated than I imagined. I'll share the progress I made, and ask for additional thoughts.

A portfolio (in our hypothetical case) is considered balanced if the proportions of premium by line of business (LOB) match the business plan goals. For simplicity, assume that the company only writes two lines of business, Line A and Line B. The business plan includes a total premium goal, to be equally written in each line. Near the end of the year, the company has met its premium goals in Line B, but is short in Line A, by an amount equal to 10 percent of total planned premium. Underwriters are discussing two potential accounts, each representing 10 percent of the total business for the year. One account is in Line A and the other in Line B. Obviously, selecting the account in Line A will lead to a balanced book, while selecting the other account will lead to an unbalanced book. If the pricing of the two accounts is identical, then the choice is obvious. However, suppose the underwriters believe that more favorable pricing is possible for the account in Line B. The question is how much higher the premium would have to be to make the Line B account equivalent to Line A. In other words, what additional premium would induce the company to accept an unbalanced book?

I assumed perfect correlation between risks within a line, and complete independence between the lines. I also assumed that the capital needs of the company were proportional to the standard deviation of the portfolio results. The capital needs of the unbalanced portfolio will be higher than the balanced portfolio, so the company will need a higher profit load to compensate the increased need for capital.

I'll spare the math, but my first calculation indicated that I needed roughly 1/4 percent more premium to cover the additional risk. My first reaction was that this amount seemed miniscule—far smaller than the margin of error in the pricing. If this was the right amount, it seemed not worth worrying about. After reflection, I realized I had blundered. The entire portfolio requires only a modest amount of additional premium, but I must collect all of it from this particular account. Given that this account represents 10 percent of the book, I need 2.6 percent more pre-

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It's a Puzzlement

Loaded Die

by John P. Robertson

This issue's puzzlement is to determine how you can use a loaded die (which has faces that come up with probabilities that might not all be 1/6) to fairly select numbers from 1 to 6 at random. This puzzle is attributed to Al Zimmerman and appeared in Frank Morgan's Math Chat.

Parrondo's Paradox

The puzzlement was to consider three games, each of which involves flipping coins. You start with some amount of capital, say $1,000. Your capital goes up by $1 if the coin comes up heads, and goes down by $1 if the coin comes up tails. Game A uses a coin that comes up heads with probability 0.495. Game B uses two coins, one that comes up heads with probability 0.095, and another that comes up heads with probability 0.745. If your capital is a multiple of 3, use the first coin, otherwise use the second coin. Game C uses a fair coin to determine whether to play Game A or Game B (play one round of whichever game is selected, and then flip the fair coin again, etc.). **Stuart Klugman** provided the following solution.

1. Why is it a paradox?

Simulations can reveal that games A and B are losers and game C is a winner. This is already a paradox. How can randomly selecting between two losing propositions make one a winner? But there is an additional paradox and that concerns game B. Assuming one's fortune is a multiple of three one-third of the time, the probability of a win on a randomly observed turn is (1/3)(0.095) + (2/3)(0.745) = 0.52833 and so game B appears to be a winner, not a loser. Why is game B a loser?

Game B is a loser because more than one-third of the time is spent having a fortune that is a multiple of three. This seems reasonable. When one's fortune is a multiple of three, it is likely that the next play will be a loss, moving the fortune to being one less than a multiple of three. But then the most likely next move is a win, getting one back to a multiple of three sooner than expected.

2. Why is applied probability on the new Exam 3?

So all new actuaries can analyze game B. It is a Markov chain. There are three states, being one's fortune mod 3. The following table provides the matrix of transition probabilities.

Next State	**Current State**		
	0	**1**	**2**
0	**0**	**0.255**	**0.745**
1	**0.095**	**0**	**0.255**
2	**0.905**	**0.745**	**0**

The steady-state probabilities are the eigenvector that goes with an eigenvalue of 1 and has elements that sum to 1. Equivalently, if A is the matrix above, solve the equation $Ax = x$ constraining the elements of x to add to one. The solution is 0.383612, 0.154281, and 0.462108. The probability of winning on a randomly selected turn is 0.383612(0.095) + (0.616388)(0.745) = 0.495652 and we see that indeed, game B is a loser.

Game C can be analyzed the same way. The transition probabilities are different. For example, if in state 0, the probability of going to state 1 (winning) is 0.5(0.095) + 0.5(0.495) = 0.295. When in states 1 or 2 the probability of winning is 0.5(0.745) + 0.5(0.495) = 0.62. The steady-state probabilities are now 0.34507, 0.254108, and 0.400822. The probability of winning on a randomly selected turn is 0.507852.

This was also solved by **Nolan Asch**, Don Glick, **John Herder**, **Glenn Meyers**, **Ira Kaplan,** and **David Skurnick**.

Exact Ranking

In the last issue we failed to note that a correct solution was sent in by **Amy Angell**.■

In Memoriam

Olaf E. Hagen
(ACAS 1939)
January 2000

Phillip B. Kates
(FCAS 1957)
August 28, 2000

Thomas E. Murrin
(FCAS 1954)
July 18, 2000

John H. Rowell
(FCAS 1947)
Date of Death Unknown

Irwin T. Vanderhoof
(ACAS 1964)
September 24, 2000

James M. Woolery
(ACAS 1925)
January 11, 1999

Brainstorms

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mium just to break even.

However, as I reviewed my calculations, I realized they were dependent on the relative mix of the LOBs, on the distribution assumptions for each LOB, on the correlation assumptions, as well as the risk measure/capital allocation assumptions. I had hoped to come up with a rough rule of thumb, or some formula to evaluate the trade-off between price and balance, but it now appears to be more complicated than I originally thought. Has anyone else tried to quantify this?■