



# The Actuarial Review

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## From the President

### The CAS and Regional Affiliates



by Alice H.  
Gannon

**T**he Casualty Actuaries of the Desert States, the CAS's newest Regional Affiliate, held its first meeting on February 18, 2000 in Scottsdale, Arizona. Approximately 20 founding members, along with the organizers, **Julia Perrine**, **Andy Ribaud**, and **Kevin Donovan**, attended this first meeting, which included discussion of the group's purpose and future activities. I was also fortunate to be there and was struck by how similar this first organizational meeting was to the first meeting in 1985 of the Southwest Actuarial Forum, the Regional Affiliate of which I am a founding member. I suspect it was also similar to the first meeting in 1964 of the CAS's first Regional Affiliate, the Actuaries Club of Philadelphia (now named the Casualty Actuaries of the Mid-Atlantic Region).

For the last 36 years, as the membership of the CAS has grown and become more geographically diverse, Regional Affiliates have formed to help meet the needs of casualty actuaries. As president of the CAS I have so far visited 9 of our 14 Regional Affiliates and am newly aware of the important contributions these groups are making

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## CAS Rejects Mutual Recognition

**SAN FRANCISCO, Ca.**—The CAS Board of Directors approved the recommendations of the CAS Task Force on Mutual Recognition and decided against a proposal to implement a program of mutual recognition at its Board Meeting in November 1999. As a result of the task force's findings, the CAS will not seek to enter into bilateral agreements with other actuarial organizations for reciprocal Fellowship status to Fellows wishing to practice in the host country of the other organizations. The Board also approved continuation of several initiatives regarding examination waivers and insuring that qualified actuaries are not barred from practice in the U.S. or in other jurisdictions.

In 1998, leaders of the Institute of Actuaries, the Faculty of Actuaries, and the Institute of Actuaries of Australia approached the CAS to consider establishing a program of mu-

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## Nontraditional Practice Initiatives Endorsed

The Board of Directors has approved new CAS initiatives to better support members in relatively nontraditional practice areas. Acting in November and February on the report of the CAS Task Force on Nontraditional Practice Areas, a task force created in 1998 by the Board and chaired by **Mike Miller**, the Board agreed to create four advisory committees to pursue the practice areas considered to have the greatest potential benefit, which are:

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## CAS Convenes Annual Leadership Meeting

**PHILADELPHIA, Pa.**—Sixty CAS leaders met here on March 23 to brainstorm and discuss the future of the CAS. President-Elect **Pat Grannan** welcomed the attendees, who were committee chairs, Regional Affiliate presidents, exam committee general officers and part chairs, and members of the Executive Council. The attendees discussed the CAS's international role, future research and continuing education, and alternative approaches to basic education.

In his report on the actions of the CAS Task Force on Nontraditional Practice Areas, task force chair **Mike Miller** said that his group determined that it was impossible to identify all areas into which actuaries would move. Among the task force's recommendations, Miller related that proactive councils for each practice area

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# The Internet and the Actuarial Societies

by Walter C. Wright

There are obviously many ways that the Internet is changing our professional lives. Perhaps not so obviously, the Internet is also changing the format of information exchange among actuaries. This offers the distinct possibility of improving communications among the memberships of the various actuarial societies, thereby enhancing the ability of the various societies to work together for their mutual benefit.

The uninhibited free flow of ideas via the Internet is phenomenal. For example, go to the "Water Cooler" section of the Student Discussion Forum, on the CAS Web Site. This has a slew of ongoing discussions, some frivolous, others serious. It's just like real "water cooler" talk, with the key difference that there is anonymity for those who want it, and no restriction on participation. It is open to anyone, anytime,

anywhere in the world. Here is a small sampler of what you might find:

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**"The uninhibited free flow of ideas via the Internet is phenomenal."**

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- "My greatest fear of the Big Tent is my long, hard road to membership will seem like a waste if others can waive exams and be credentialed..."

- "I believe that if actuaries expand their core knowledge then they are positioned to expand the field. That is fundamentally different from the Big

Tent's idea that 'If you can't beat them, join them' (or ask them to join you)."

- "If the Big Tent is partially about bringing these sorts of noninsurance analytic people under a broadened banner of the actuarial profession, as well as identifying credentialed actuaries as being potential candidates for such roles, I'm all for it."

- "I do like some of what the Big Tent philosophy encompasses—expanding the actuarial profession, finding better ways to train and credential new actuaries, and better PR are all things we should be doing. If I have a major issue with the Big Tent, it's the sponsorship. Shouldn't this sort of an initiative be coming out of the Academy, rather than the SOA?"

This dialogue gives us a lot to think about. For one thing, it's a good exchange of ideas among CAS members and students. I believe the discussion would be even more interesting if more people joined the discussion, especially if it included occasional contributions from the CAS leadership.

Second, this exchange is in the Student Discussion Forum, which is open to everyone, rather than in the Members' Discussion Forum, which is restricted to CAS members. I don't know why, but it is rare to find good discussions in the members' forum, even though members participate actively in the student forum. Do participants prefer sharing ideas in a more open environment?

Third, the thread starts with a reference to an article in an SOA publication, which is easily accessed by any CAS member. Both the SOA and the CAS have opened their newsletters, and other publications, to the general public. With just a few mouse clicks, any CAS member can find out what ideas the SOA is espousing to its members, and conversely.

Distrust between groups is almost always accompanied by a lack of open communication. For many years, at least since I entered the profession, some CAS members have not trusted the SOA, and have been skeptical about the strategic inten-

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## VFIC Seeks Input

The Valuation, Finance, and Investment Committee (VFIC) is undertaking a project whose goal is to provide the CAS membership assistance in their day-to-day work. This project includes:

1. Identifying accounting and financial reporting rules that are considered unclear (that is, how to comply is not clear).

2. Developing appropriate materials and providing them to the CAS membership. The materials developed will depend on the specifics but will likely include written explanatory materials (brief paper on how to) and/or spreadsheets demonstrating an actual application.

As a first step, VFIC is asking the CAS membership to provide suggestions of such rules. VFIC's focus is on rules related to valuation, finance, and investment. Input should include clear identification of the rule/regulation, a brief explanation of what is unclear about the rule, and what assistance (a paper, spreadsheet, other) is desired.

Members can provide input by completing the online form at <http://www.casact.org/research/vfic.cfm>, by sending an e-mail to [office@casact.org](mailto:office@casact.org), Attn.: VFIC, or via fax to (703) 276-3108. ■

## In My Opinion

From page 2

tions of the SOA. The Internet, coupled with the fact that the various actuarial societies are making their respective newsletters and other information publicly available, opens the lines of communication. That is healthy for the profession and may lead to increased cooperation as we pursue our joint interests in the years ahead. ■

## 2000 Reinsurance Seminar Slated For Boston

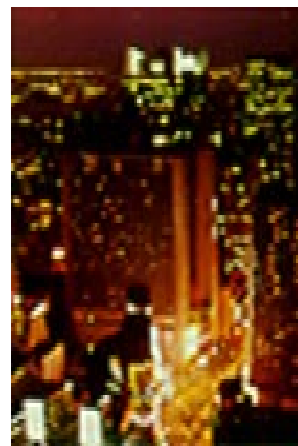
The Copley Place Marriott in Boston will host the 2000 CAS Reinsurance Seminar, June 14-16. A welcome reception will kick off the seminar on Wednesday evening with full sessions beginning Thursday and ending Friday. Dinner and a reception will be held Thursday night at the Top of the Hub Restaurant and Skywalk.

General and concurrent sessions will cover valuation of reinsurance companies; capital market products; insurance products for credit enhancement and project finance; and weather theory and hedge products. Other topics covered in sessions include reinsurance reserving; finite risk reinsurance; aggregate distributions; the new ISO ILFs; and pricing reinsurance of property, workers compensation, and professional liability. Intermediate track sessions will review the basic techniques of reinsurance pricing. Two ceded track sessions will also focus on how DFA and property catastrophe modeling are used to design reinsurance programs. Other highlights include a session on current events and a research corner.

More information on the seminar will soon be mailed to members and will be available on the CAS Web Site ([www.casact.org](http://www.casact.org)). ■

## DFA Seminar Set For New York City

New York City is the site of the 2000 Dynamic Financial Analysis Seminar on July 17-18 at the New York Marriott Marquis. Sponsored by CAS and the American Risk and Insurance Association, the seminar's goal is to enhance the actuary's role in the strategic planning process by integrating traditionally less familiar asset-based concepts with the more familiar liability concepts. This year, the seminar will highlight the numerous recent contributions of authors responding to the CAS Call for Discussion Papers on DFA, entitled *Evaluation of Strategic Alternatives and Presentations and Conclusions of DFA*. The seminar will also include an expanded Basic DFA track, and other tracks geared toward model "builders," "users," and the perspectives of "outsiders" on DFA. These sessions will provide numerous examples of how primary and reinsurance company personnel have utilized DFA applications.



The New York City Skyline

The keynote speaker for the general session is Peter Bernstein, author of *Against the Gods: The Remarkable Story of Risk*. Bernstein's first book has been widely acclaimed in many sectors of the financial services industry and was reviewed in *The Actuarial Review* (February 1999). He will address, among other topics, his thoughts on the convergence of financial and insurance markets and how this will affect the measurement and management of risk.

In addition to furthering the educational pursuits of actuaries of all experience levels on practical DFA applications, the seminar will also present some of the latest research on DFA from the academic arena. More detailed information on other interesting session topics will be mailed to CAS members soon. ■

## From the President

From page 1

toward the purposes of the CAS. The Regional Affiliates usually hold two meetings a year. Most of the meetings I have attended included high-quality educational sessions covering either technical actuarial issues or professionalism issues, or both, and thereby provided a very convenient and inexpensive way for many casualty actuaries to meet part of their continuing education needs. The meetings also provided a forum for communication and exchange of ideas among casualty actuaries as well as opportunities for socializing.

At the meetings I also heard about the other activities in which the Regional Affiliates are engaged. It is an impressive list of activities. Many of the Regional Affiliates are very active in promoting basic education of casualty actuaries by offering exam seminars and facilitating formal or informal student study groups. Many of them are promoting the casualty actuarial profession through their work with colleges and universities in their geographic area—several even fund scholarships for students who show promise as future actuaries. Some are involved in reaching out to high school students with an aptitude for mathematics to make them aware of the actuarial profession and its rewards.

Even though the Regional Affiliates are largely independent from the CAS, they are all involved in activities that directly support the goals of the CAS. The CAS has never really taken a formal look at all the ways in which the Regional Affiliates have been helping the Society, however, nor has it thoroughly considered how the CAS might work more effectively with the Regional Affiliates to achieve even more progress toward our mutual goals. We have now launched such an effort.

The Regional Affiliate Task Force has been formed to conduct such a study and recommend to the CAS's Executive Council how the CAS could work more effectively with the Re-

gional Affiliates. This effort will also help us address one of the issues in the CAS's Strategic Plan. The section in the plan on Regional Affiliates includes the following: "The balance between what is done at the affiliate level, at the national level, and at the continuing education seminars should be developed."

Under the excellent leadership of **Ramona Lee**, the task force members have already begun their work. They have formed a preliminary list of ques-

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tions to be addressed and have begun soliciting input from the leaders of all the Regional Affiliates. I am looking forward to the task force's findings and recommendations and am excited about the possibility of making the partnership between the CAS and its Regional Affiliates even more productive.

I hope all CAS members will support the activities of the Regional Affiliate in their geographic area and share with Ramona and the other members of the task force any suggestions on how the CAS and the Regional Affiliates can work even more effectively together.

Please send your suggestions and comments to Ramona Lee at [Ramona.Lee@comm6.state.ia.us](mailto:Ramona.Lee@comm6.state.ia.us) or call (515) 281-4095. The members of the Regional Affiliates Task Force are: **Nolan Asch, Jerry Degerness, Gordon Diss, Dave Hafling, Therese Klodnicki, Michael Lamb, David Mohrman, Julia Perrine, and Ken Quintilian.**■

## Nontraditional Practice Initiatives

From page 1

- Asset/liability management and investment policy
- Valuation of P/C insurance companies
- Enterprise risk management
- Securitization/risk financing

These advisory committees will oversee an expansion of CAS education and research functions to support the new practice areas, much like the earlier DFA Advisory Committee functioned in support of the dynamic financial analysis practice area. These committees will develop a list of initiatives needed in education and research for review by the Executive Council and assignment to the appropriate CAS committees for action. The objective is to develop skill sets that have general applicability to a wide range of practice areas.

The Board also supported the task force recommendation to include general business skills instruction in the CAS education program. The first sessions in response to this thrust will be offered at the 2000 CAS Spring Meeting in Las Vegas. A task force is being formed to address further the providing of continuing education opportunities for general business skills, such as presentation and salesmanship, business writing, marketing strategies, production and productivity measures, process management, and financial statement analysis.

Staffing of the four advisory committees and the business skills task force commenced in March in response to a letter to the membership from CAS President-Elect **Pat Grannan**. Additional volunteers are welcome. Members are encouraged to contact Jane Brooke at the CAS Office for more information on serving.

A copy of the task force report with a summary of the approved implementing actions is available on the CAS Web Site at <http://www.casact.org/private/reports/ntpa.htm>.■



# Election, Recognition, and Education

by Charles L. McClenahan

I would like to take advantage of the opportunity afforded by the good folks at *The Actuarial Review* to discuss a few topics of current interest to casualty actuaries.

## Contested Elections

I have a unique perspective on this issue. Many of our younger members may not know (and most of the older members have forgotten) that I was, in November of 1981, the losing candidate in the only contested vice-presidential election the CAS has had. At that time the vice-president was the president-elect-elect—the office being the first of the three-office, three-year term. I bring this up because one of the concerns raised about the prospect of contested elections is that the losing candidate(s) might suffer “insult” or “hurt feelings.”

Now it may be true that back in the “olden days” (when we didn’t have PCs and had to keep track of loss experience by carving notches in trees) we may have taken ourselves a bit less seriously than do the present-day putative purveyors of professional power, but I can assure you that I felt neither insulted nor hurt in my loss. I suffered no career-ending backlash (my employer’s reaction being relief that I would be available to do my job over the next three years) and I walked off the field feeling nothing but pride (tinged with amazement) that I had been nominated by a grassroots effort.

My only regret about the process was that there was no mechanism to allow the candidates to promulgate their personal visions for the CAS. The grassroots nomination process does not lend itself to the organized airing of issues. And there are issues! *The Actuarial Review* is full of issues. Doesn’t it make sense to offer the membership an option or two?

And to my friend **Sholom Feldblum**, who has expressed concern about insulting his nominated friends, I would point out that I never asked

people to tell me for whom they voted. But if I had, and if they had said they did not vote for me, I would think them better friends than those who would lie to protect my fragile ego.

## Mutual Recognition

Again I find myself with an unusual, if not unique, perspective on this issue. First, I come from an era where the only recognition issue was trying to get the

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**“If the country  
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actuaries?”**

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SOA to recognize CAS members as real actuaries. And second, it is currently my privilege to chair the American Academy of Actuaries Committee on Qualifications.

Here’s the situation as I see it. There is no legal recognition of necessary and sufficient credentials to call oneself an actuary in the U.S. and there are no standards of practice or codes of conduct applicable to noncredentialed ersatz actuaries. So if we don’t recognize a foreign-educated actuary, he or she may ply the actuarial trade with impunity.

But, if we recognize the foreign-educated actuary with some level of CAS membership, the Code of Conduct, the Actuarial Standards of Practice, and the Qualification Standards become applicable to work done by that actuary in this country. I think that is a good thing.

For those of you who believe that mutual recognition will cheapen the value of the ACAS or FCAS designation I would point out that no employer,

no client, and no jury believes that all FCASs are identically talented. If the education provided by the CAS examination structure is demonstrably superior to that provided by alternative means, the marketplace will reflect that superiority.

## Math Education

I am increasingly concerned about the state of mathematical education in this country. In the public school system we see a disturbing trend toward nonjudgmental mathematics with names such as “Math Land,” “Connected Math,” or “Everyday Math” and referred to generically as “whole math” or the “new new math.” In a misguided attempt to eliminate math anxiety, and thereby to foster self-esteem, these programs avoid placing the student in a situation where he or she can be wrong. Everyday Math, for example, offers fifth graders a worksheet with the following fill-in-the-blanks questions:

- A. If math were a color, it would be \_\_\_\_\_ because \_\_\_\_\_.
- B. If it were a food, it would be \_\_\_\_\_ because \_\_\_\_\_.
- C. If it were weather, it would be \_\_\_\_\_ because \_\_\_\_\_.

These new programs eschew the teaching of basic computational methodology and concentrate on invention and creativity to solve problems. In a January 4, 2000 *Wall Street Journal* editorial “Math Wars,” Steven Leinwand, a member of the federal Education Department mathematics and science expert panel charged with recommending nationwide curricula, is quoted as saying: “It’s time to realize that, for many students, real mathematical power, on the one hand, and facility with multidigit, pencil-and-paper computational algorithms, on the other, are mutually exclusive.” The following sentence of Mr. Leinwand’s statement, which was not included in the *WSJ* editorial, is even more disturbing: “In fact, it’s time to acknowledge that continu-

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# CAS Welcomes New Affiliate Members

Thirteen actuaries from around the world have been accepted as the first CAS Affiliate members. The Board of Directors approved the creation of the Affiliate membership class in May 1998, and CAS Fellows approved appropriate revisions to the CAS Constitution and Bylaws on November 13, 1998.

Affiliates are qualified actuaries who practice in the general insurance field and wish to be active in the CAS. Affiliates do not hold Fellow or Associate designations but have attained the highest actuarial designation of an organization that is a member of the International Actuarial Association. Affiliate members must be sponsored by a CAS Fellow and must show evidence of significant practice in the property/casualty field. Affiliate members receive CAS literature and notices, and may attend CAS meetings but are non-voting members. They may also participate in all programs and commitments with the exception of the Board and Admissions Committees. They are assessed the same dues as Fellows and Associates.

As of March 7, 2000, the following actuaries have been accepted as CAS Affiliate members:

**Muhammad Amer Ahmed**

RiverStone Management Limited  
London, England  
Fellow, Institute of Actuaries

**Mark R. Atkinson**

Royal & SunAlliance  
Charlotte, North Carolina  
Fellow, Institute of Actuaries

**Natalie S. Bradford**

Royal & SunAlliance  
Charlotte, North Carolina  
Fellow, Institute of Actuaries

**Robert A. Buchanan**

Robert Buchanan Consulting  
Pty. Ltd.  
Goulburn, New South Wales,  
Australia  
Fellow, Institute of Actuaries;  
Fellow, Institute of Actuaries of  
Australia

**Simon J. Day**

PricewaterhouseCoopers LLP  
Boston, Massachusetts  
Fellow, Institute of Actuaries

**Tim Owen den Dekker**

Oliver, Wyman & Company  
New York, New York  
Fellow, Institute of Actuaries

**Alison T. Drill**

Tillinghast-Towers Perrin  
Irvine, California  
Fellow, Institute of Actuaries of  
Australia

**Bradford S. Gile**

American Family Insurance Group  
Madison, Wisconsin  
Fellow, Society of Actuaries

**Bhavini V. Kamarshi**

Tillinghast-Towers Perrin  
San Francisco, California  
Fellow, Institute of Actuaries

**Simon M. Lambert**

PricewaterhouseCoopers  
Hamilton, Bermuda  
Fellow, Institute of Actuaries

**Dimitris Papachristou**

Benfield Greig Ltd.  
London, England  
Fellow, Faculty of Actuaries

**Andrew J. Turnbull**

XL Insurance Company Ltd.  
Hamilton, Bermuda  
Fellow, Institute of Actuaries

**Jerome Vignancour**

Tillinghast-Towers Perrin  
Paris, France  
Fellow, Association des Actuaire-  
France■

## Journal Issues Call For Papers

Actuaries are invited to submit papers for possible publication in the *Journal of Actuarial Practice*, an international refereed journal. Papers may be on any subject related to actuarial science or insurance. Papers do not have to contain original ideas. Preference will be given to those papers intended to educate actuaries on the methodologies, techniques, or ideas used (or that can be used) in current actuarial practice. The journal also accepts technical papers, commentaries and book reviews. All papers are reviewed and must have some relevance to actuarial practice.

Please send an abstract of the paper by July 1, 2000 and five (5) copies of the completed paper by October 1, 2000 to:

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*Journal of Actuarial Practice*  
P.O. Box 22098  
Lincoln, NE 68542-2098, USA  
Phone: (402) 421-8149  
Fax: (402) 421-9190  
E-mail:  
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## Random Sampler

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ing to teach these skills to our students is not only unnecessary, but counter-productive and downright dangerous.” (Source: *Education Week*, February 9, 1994, <http://www.edweek.org/ew/1994/20lein.h13>.)

So where are the actuarial societies on this issue? If the country persists in

“dumbing down” our mathematical education, where will we get future generations of actuaries? Isn’t this an issue on which our profession ought to be heard? Or perhaps we are too busy helping our kids try to figure out what color math is to worry about something so trivial.

For those with further interest in this topic I recommend the Web site <http://www.mathematicallycorrect.com>.■

# Training Future Actuaries: The New Actuarial Exam Structure

by Richard W. Gorvett

What do you think of the new exam structure? While that question might elicit a strong response (either positive or negative), chances are good that the majority response from CAS members involves a shrug of uncertainty.

As CAS members are aware, as of this spring the structure and content of the actuarial exams have changed. For those still taking exams, this change has had immediate and important personal implications. For those whose exam days are behind them, the change may seem to have little relevance. The new exam structure will have a far-reaching impact throughout the actuarial profession, however. For example, how will universities respond to the new exam requirements? What are the implications for recruiting future graduates of actuarial programs? These issues are critical for the profession.

While a number of changes occurred with respect to the upper-level Associateship and Fellowship exams, this article concentrates on the first four jointly sponsored exams. First, a review of the facts with respect to these new exams:

- *Course 1: Mathematical Foundations of Actuarial Science.* This exam covers calculus and probability, within a risk management context. Essentially, this includes material covered on the old CAS Exam 1 and much of Exam 2, and also requires a basic knowledge of insurance and risk management concepts and terminology.
- *Course 2: Interest Theory, Economics, and Finance.* This exam includes material from the old CAS Exam 5B (finance), parts of Exams 4A (interest theory), and 5A (economics, both micro and macro).
- *Course 3: Actuarial Models.* This exam covers a variety of model types: contingent payment, survival,

frequency and severity, compound distribution, stochastic process, and ruin models. In addition, simulation topics are covered. This includes material from parts of the old CAS Exams 4A, 4B, and 5A, along with some other material.

- *Course 4: Actuarial Modeling.* This exam covers estimation and fitting of models; regression, forecasting, and time series; credibility theory; and simulation. This includes material from old CAS Exam 3A, part of 4B, and some other material.

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**"The new exam structure will have a far-reaching impact throughout the actuarial profession...."**

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Currently, Course 1 is planned as a three-hour exam and Courses 2-4 are scheduled to be four hours in length. All four exams are sponsored by the CAS and the Society of Actuaries.

This overhaul of our examination system has a huge potential to affect the education and recruitment of future students and actuaries. It raises a number of issues:

*What courses will colleges and universities offer?*

The new format of the early exams provides a significant challenge to those of us in academia. Should we offer courses sufficient to cover the material on all of the first four exams? For many schools, this could be a strain on their resources, especially for schools with smaller actuarial programs that do not have enough students to permit efficient delivery of the more advanced courses. Even if schools do offer courses covering all of this mate-

rial, a question arises regarding how many of these can or should realistically be *required*—especially if a broad-based education is desirable from a long-run life and career perspective. For example, preparing for Exam

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## CAS Continuing Education Calendar

**Bookmark the online calendar at [www.casact.org/coneduc/cal.htm](http://www.casact.org/coneduc/cal.htm).**

**May 7-10**—CAS Spring Meeting, Bellagio Hotel, Las Vegas

**June 15-16**—Seminar on Reinsurance, Boston Marriott Copley Place, Boston

**June 19**—U.K.-CAS Seminar, TBD, London, England

**June 25-27**—Principles of Finance, Westin O'Hare, Chicago\*

**July 10-11**—Loss Distributions, Hilton Suites Detroit Airport, Detroit\*

**July 17-18**—DFA Seminar, New York Marriott Marquis, New York

**August 15**—Seminar on Reinsurance, Downtown Association, New York\*

**September 11-12**—DFA Seminar, Westin Atlanta Airport, Atlanta\*

**September 18-19**—CAS/AAA/CCA Casualty Loss Reserve Seminar, Hilton & Towers, Minneapolis

**September 21-22**—CIA/CAS Appointed Actuary Seminar, Hilton Airport Hotel, Toronto, Canada

**October 16-17**—Seminar on Issues Associated with Funding Catastrophe Risk, Providence Biltmore, Providence

**October TBD**—Advanced DFA Seminar, TBD, Chicago

**November 12-15**—Annual Meeting, J.W. Marriott, Washington, D.C.

\*Limited Attendance

# Joint Task Force On Academic Relations Releases White Paper For Comment

The Joint CAS, CIA, and SOA Task Force on Academic Relations recently released "A Partnership Between the Academic Community and the Actuarial Profession," a white paper identifying eight objectives of a partnership between the actuarial profession and the academic community. The paper concludes that a strong relationship between the profession and the academic community is critical to the success of the profession, for three reasons: it is essential to the development and communication of the scientific foundation of actuarial practice; there is new competition for future jobs from other disciplines that have developed academic programs focused on quantification of risk and its financial consequences; and models of actuarial education in the rest of the world are much more university-focused.

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). In the paper, the task

force articulates its vision of the academic/actuarial partnership by 2005, the partnership's objectives, and some initiatives to make the vision a reality.

Members can find the white paper and feedback form in the Academic Community section of the CAS Web Site ([www.casact.org/academ/acadcov.htm](http://www.casact.org/academ/acadcov.htm)). The task force will refer comments related to the alternative basic education issues to the CAS Education Policy Committee and to a new SOA Task Force on Education and Qualification 2005, which will have liaisons from the CAS and CIA.

The leadership of the three actuarial organizations wants feedback from their members before the organizations take action on the white paper. The white paper's cover letter points out that some ideas in the paper may be controversial. For example, one of the initiatives calls for an expanded role for universities in the basic education of actuaries. CAS President **Alice Gannon**, CIA President Stuart Wason, and SOA President Norman Crowder state in the cover letter: "The Boards

have not had full discussion of the content of the white paper, and members should not interpret the distribution of the paper to be an endorsement of the vision or recommendations in the paper."

Completion of the white paper signals the dissolution of this task force, which included **Fred Kilbourne**, **Bill Wilkins**, and **Dale Porfilio** as the representatives of the CAS. To carry forward the work of the task force, the CAS, CIA, and SOA approved the formation of a new Joint CAS, CIA, and SOA Committee on Academic Relations with a charge to encourage and facilitate a partnership between the actuarial profession and the academic community. This committee will develop recommendations for new initiatives based on the white paper, member comments, and additional research. The new committee will be chaired by Dale Porfilio and will include **Nasser Hadidi**, **Don Mango**, and **Alice Underwood**. ■

## Training Actuaries

From page 7

2 could conceivably require five or more semester-long courses all by itself (not including some basic prerequisites).

At the University of Illinois, where I am a professor of actuarial science, our goal is to *offer* courses sufficient to cover essentially all of the material on the first four exams—but we do not and cannot *require* all such courses as part of the actuarial science curriculum. Our course requirements involve the material on the first exam, much of the material on the second, and some of the material on the third and fourth exams. Elective courses cover the remaining basic actuarial material. In addition, we have separate weekly review and problem-solving sessions that help students prepare for each of the first two exams.

*How many exams will students complete prior to graduation?*

Given the volume of material on the four basic exams, it will be much tougher for students to graduate with numerous exams completed. Four exams passed will be, I suspect, extremely rare, and three exams passed could be somewhat infrequent. It is entirely possible that the mode, especially initially, will be just one exam passed!

*How will recruiting be affected?*

This means that one signal employed by companies to evaluate actuarial graduates—number of exams passed—might be more difficult to use. It could be helpful for companies to become more involved with local college and university programs on a regular basis. This would be mutually beneficial: the students would appreciate the real-world insights provided by practicing actuaries and companies

would get greater exposure to the students (allowing both parties a better chance to appreciate each other). Such contacts could take a variety of forms: presentations to actuarial science classes, case studies applying classroom theory to real-world situations, an actuarial advisory committee, mentor relationships, and increased internship and work-study arrangements.

*How will students pay exam costs?*

The registration fees for the new Exams 1 and 2 are \$75 and \$100, respectively. The fee for Exams 3 and 4 are \$275 each (although full-time students receive a 20 percent deduction, to \$220). These fees, especially for Exams 3 and 4, are significant and could impose a hardship on some students. And the exam registration fees are not the end of it. For example, the study

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# Working—and Not Working—In Europe

By Victoria Stachowski (with Alice Underwood)

On the fourth Thursday of November, instead of watching football and eating pumpkin pie, I was in the office. Fortunately, the employee restaurant was considerate of the American members of the workforce and served turkey and stuffing as one of the options on that day. They did a pretty good job with it, too.

One of the unsettling things about living and working in a foreign country is that many of the holidays from one's childhood are not celebrated. Thanksgiving is a particularly North American holiday (held in October in Canada); the four-day holiday weekend is something I truly miss. Naturally the Fourth of July is irrelevant—although some people do shoot fireworks then over Zurich—as are the American Labor Day, Memorial Day, and Thanksgiving. Halloween hasn't traditionally been celebrated in Switzerland either, though it's making inroads in some places.

On the other hand, Easter has more impact on the work schedule than in the U.S. Both Good Friday and Easter Monday are public holidays, resulting in a four-day weekend. A few addi-

**“What would I do with five weeks of vacation? How could I possibly fill so much time?”**

tional religious holidays, including Pentecost Monday (Whitmonday) and Assumption Day, also mean time away from the office. May 1 is a holiday for the workers, the continental version of Labor Day, but instead of outdoor barbecues there are often political demonstrations. So, on the continent, April and May are full of holidays.

The canton of Zurich has a few unique half-day holidays: Sechseläute,

a half-day festival to celebrate the end of winter, during which a snowman is “exploded” on the side of a mountain; and Knabenschiessen, a half-day holiday in September featuring a shooting contest for boys and girls. Other Swiss cantons, and other European countries, of course have their own individual holidays.

How does this all compare to the holiday schedule in the U.S.? My count shows nine full days of holidays in Switzerland. American companies, depending on company policy, often give about that many. One point to keep in mind, though, is that in Switzerland (the practice differs across Europe) a holiday such as Christmas or May 1 that happens to fall on a weekend does not generate a day off work, whereas many U.S. companies would give the preceding Friday or following Monday as a holiday.

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Country	Hrs per Week	Vacation Days	Comments
<b>Belgium</b>	35.5 - >37	20 regular + 1 cultural day + 9 comp + 1 day/10 years 1 day/35 years	The workweek is fixed at 35.5 hours but as employees work 37 hours they receive an additional 9 days off per year. There seems to be a good chance that the workweek will be reduced to 35 hours in 2001.
<b>France</b>	35	25 minimum; often more	The new reduced hours began in 2000 for all businesses with 50 or more employees. Civil servants will be phased in on January 1, 2002.
<b>Germany</b>	37.6	30 days + time for special occasions	Time off is granted for special occasions: birth of a child, marriage (of the employee), funerals, and moving. The hours per week limit does not apply to many salaried positions.
<b>Hungary</b>	40	Starts at 20	The number of vacation days increases with age. At 45, an employee receives 30 days.
<b>Luxembourg</b>	40	30 +	The + refers to the holidays that fall on the weekend but which the employee can take on another day. In 1999, there were 4 of these days.
<b>Netherlands</b>	38 - > 40	25 regular + 13 comp	Legally about 38 hours per week but most people work 40. Because of this extra 2 hours, people receive another 13 days off per year. Some areas have shifted to 36 hours per week, in which Friday is a half-day.
<b>Norway</b>	40, fewer for most insurance companies (37.5)	21 regular + 5 for those older than 60	At the company I asked about, the workweek is 35 hours in the summer and 40 hours in the winter.
<b>Portugal</b>	40	22	
<b>Sweden</b>	40	25	
<b>Spain</b>	40	22	Consider the 40 hours a minimum!

## ASTIN *Bulletin* Online

The CAS Committee on Online Services has recently completed a project to add the entire collection of the *ASTIN Bulletin* to the CAS Web Site's Download Library. Individual articles and entire volumes of the nearly 70 issues of the collection are available for download in PDF format at <http://www.casact.org/library/astin/index.htm>.

The *Bulletin* is published by ASTIN (Actuarial Studies In Non-life insurance), which is a section of the International Actuarial Association. The *Bulletin* publishes papers written from any quantitative point of view—actuarial, econometric, engineering, mathematical, and statistical—attacking theoretical and applied problems in any field faced with elements of risk and insurance. The *Bulletin* especially welcomes papers opening up new areas of interest to the international actuarial profession.

"The addition of the *ASTIN Bulletin* is part of our push to make the Download Library as comprehensive as possible," said **Israel Krakowski**, who chairs the Committee on Online Services. "We encourage suggestions from the membership for further additions to the library."

The Download Library of the CAS Web Site is the most complete collection of nonlife insurance research literature available online. In addition to the *ASTIN Bulletin*, the virtual library contains volumes of the *Proceedings of the Casualty Actuarial Society*, *CAS Forum*, and *CAS Discussion Paper Program*. Papers accepted for publication in the *Proceedings* but not yet printed are also available, as are results of committee research projects, meeting and seminar handouts, and downloadable programs, spreadsheets, and workbooks. The main page of the Download Library can be accessed at <http://www.casact.org/library/library.htm>. ■

### Training Actuaries From page 8

note for Part 2 costs \$75, and additional textbook purchases will be necessary for those students who have not taken college courses specifically aimed at the exam material. Companies and consulting firms can really help here and some already are, by providing monies to help support students with these expenses. Such support is appreciated and more would be welcomed.

*What impact will the exam structure have on graduate actuarial science programs?*

Frequently, graduate-level programs in actuarial science focus on the training of people who did not study actuarial science as undergraduates. It is often more appropriate for students, after finishing an undergraduate program, to enter the profession, rather than to continue on for graduate study. The new exam structure might change that, however. Additional academic

course work, especially in the areas covered by Exams 2, 3, and 4, and the potential for additional exam successes might prove beneficial for some students.

*Does the new exam system meet the needs of the CAS?*

Any professional course of study should be constantly monitored and, if necessary, adjusted. As the new exam system matures, we will gain additional insights into its appropriateness for training property/casualty actuaries. There are certainly many favorable aspects of the new system and there are naturally some questions. Is the life contingencies and survival analysis material beneficial? Are the readings appropriate? Should we have material on policy forms and coverages earlier in the exam process?

Answers to some of these questions may come as familiarity with the new material increases. On a personal note, when I first looked at the new *Loss Models* book, which comprises a big part of the reading list for Exams 3 and

### Marriage Contest Results

Congratulations to **Ellen Evans** who won the contest proposed in the last issue to identify the most married couples in the CAS. Ellen identified 57 married couples and is now the proud owner of a handy CAS duffel bag.

The AR staff thanks all those who participated in the contest. From the lists submitted, we identified 78 married couples in total. We acknowledge that there may be many more married couples who were not identified—not to mention those marriages between CAS members and students! ■

4, I had some concerns, in part, because I thought the prior CAS readings on loss distributions and credibility theory were good and appropriate. Having now taught a full semester course from the *Loss Models* book, I rather like and admire the text. So we might want to avoid jumping to early conclusions.

*How can we attract good students to the profession?*

This is a question that goes beyond the new exam structure. How do we attract good people who, especially in the current economy, have excellent alternative career paths, many of which do not involve a lengthy and time-consuming series of exams? The new exam structure attempts to address this issue by introducing some important subjects—economics and finance—earlier in the exam process. But there is a lot more that can be done, and academics and practicing actuaries need to work together to attract good people to our worthy profession.

\* \* \* \* \*

As we all gain some experience under the new exam system, the answers to many of these questions will become clearer. One thing that will serve us all well as we go forward is a closer and more conscientious relationship between practicing actuaries and academics. Discussion of the mutual issues regarding the new exam structure is a great opportunity to enhance that relationship. ■

## Say "Cheese"

by Brian D. Haney

**P**olish immigrants founded Elm City Cheese in 1896 (for you trivia buffs, the Elm City is New Haven, Connecticut). Elm City Cheese sold dairy products, including various types of cheeses. The business continued through several generations of the family, through the Depression, through two world wars, and operates to this day.

Over the years, Elm City's product line narrowed from various dairy products, to various types of cheeses, to just bakers and Italian cheeses. Today it exclusively manufactures grated Parmesan cheese. By focusing on a narrow product segment, this small company of 14 employees can produce a relatively large amount of a quality product. In fact, they produce over 1 million pounds a year!

Now some of you must think it odd that more than 1 million pounds of Parmesan cheese are consumed annually in the whole U.S. More shocking is that Elm City's 1 million pounds is only a small fraction of the total U.S. production—an astonishing 620 million pounds.\* Most shocking of all is that the company is run by an FCAS.

This FCAS began her actuarial career in 1986 as an intern with Aetna. After graduating from Bucknell in

1988, she went to work full time with Aetna. After six years of the nonstop fun of being a professional actuary, the cheese business began to look more attractive to her.

Just kidding. Actually, a crisis at Elm City Cheese compelled her to leave her job, pick up knee-high boots and a neoprene apron, and become the fourth generation of cheesemakers at Elm City.

This busy FCAS has had to wear many hats, from working with contractors to repair machinery, to preparing monthly financial statements, and handling insurance, legal, and pension matters. She finds managing a small business to be less regimented than being an actuary. In addition to having a broader variety of tasks, her daily schedule is dictated more by what "fires" need to be put out than anything else.

For example, one of the larger crises that Elm City Cheese had to contend with in the 1980s was an odor control issue (no giggling please). You see, all cheese has an aroma—some more aromatic than others. In fact, this FCAS's father's motto was, "if it doesn't smell, it doesn't sell," which applies equally to cheese and Madonna's music, apparently.



*Our mystery actuary and her husband on the job.*

Parmesan cheese has a particularly strong aroma, and 1 million pounds of it...well, you get the idea. The neighbors were not amused when the odor was getting out of the production facility.

Eventually, the odor was contained (how it was contained will remain a trade secret) and life at Elm City went on. Crises have come and gone, but the company is still thriving, entering its 105<sup>th</sup> year as the family business. The FCAS has had a chance to reflect on what the future holds for Elm City. She'd like to add another product line eventually and maybe pass the business to a fifth generation so that **Marjorie Weinstein-Kowal** might someday have a less hectic schedule, and just take time to smell the...oh well.

\* Actually, the 620 million pounds are the annual U.S. production of all non-Mozzarella Italian cheese...if you want to be precise.■

## CORP-Accepted Papers Posted On Web

The CAS Committee on Review of Papers has released its quarterly update of recently accepted papers. The listing below includes authors who have been invited to present papers at the 2000 CAS Spring Meeting. An asterisk indicates these authors.

Electronic versions of the accepted papers are located on the CAS Web Site at <http://www.casact.org/pubs/corponweb/papers.htm>. The CAS Editorial Committee is currently editing these papers for inclusion in the *Proceedings of the Casualty Actuarial Society*. As of April 3, 2000, CORP has accepted the following papers:

1. "Application of the Option Market Paradigm to the Solution of Insurance Problems" by Michael G. Wacek—Discussion by Stephen J. Mildenhall\*
2. "Applications of Resampling Methods in Actuarial Practice"—by Krzysztof M. Ostaszewski, Richard Derrig, and Grzegorz Rempala
3. "Best Estimates for Reserves"—Glen Barnett and Ben Zehnwrith
4. "The Direct Determination of Risk-Adjusted Discount Rates and Liability Beta"—by Russell E. Bingham\*
5. "Estimating U.S. Environmental Pollution Liabilities by Simulation"—by Christopher Diamantoukos\*
6. "Risk and Return: Underwriting, Investments and Leverage"—by Russell E. Bingham\*■

## Mutual Recognition

From page 1

tual recognition. Under mutual recognition, a series of bilateral agreements would be executed between the participating organizations referred to as the "home organization" and the "host organization." Under these agreements, a "home organization" Fellow would become a Fellow in the "host organization" after some period of residency and passing the local professionalism course plus possibly some local law/regulation course or exam.

Articles concerning mutual recognition and other global issues appeared in *The Actuarial Review* (August, 1999). There was also significant feedback from the membership, including letters and e-mail to the task force, letters to the editor of *The Actuarial Review*, comments at Regional Affiliate meetings, and even a petition to the Board of Directors.

After deliberating on the considerable feedback from the membership and taking into account the pros and cons, the task force concluded that the CAS had more to lose by entering into mutual recognition agreements than it had to gain. In particular, the task force found that:

- In the United States and Canada, there is no significant barrier to practice for general insurance actuaries accredited by organizations other than the Casualty Actuarial Society.
- In Canada, Fellowship in the Canadian Institute of Actuaries is afforded equally to Fellows of the CAS, the SOA, the Institute of Actuaries, the Faculty of Actuaries, and the Institute of Actuaries of Australia who meet specific Canadian education and practice requirements.
- In the United States, the American Academy of Actuaries promulgates qualification standards for actuaries signing prescribed statements of actuarial opinion. Membership in the Academy is open to actuaries qualified by numerous organizations, including the Institute/Faculty and soon to include the Australian Institute. The qualification standards address requisite knowledge, experience and continuing education, but do not require membership in a par-

ticular credentialing organization for qualification.

- The credentials provided an actuary through completion of the Casualty Actuarial Society syllabus of examinations differ significantly from those provided by other examining organizations. Specifically, the CAS syllabus is uniquely focused in a particular specialty area, general insurance, while other societies provide a broader education covering multiple areas of actuarial practice with less depth in general insurance.
- Fellowship in the CAS is recognized outside the United States and Canada as a desirable designation for general insurance actuaries in addition to or, in some instances, in lieu of local credentials.
- The CAS recognizes the examinations offered by other actuarial organizations and provides waivers of many of its examinations for actuaries educated under other examination systems. The CAS Education Policy Committee has reexamined the current waiver policies in light of recent changes in both the CAS syllabus and the syllabus of the Institute and Faculty of Actuaries and will recommend that the CAS waive up to seven or eight CAS exams for candidates who have completed the expanded Institute/Faculty general insurance exams.
- The CAS recognizes the qualifications of general insurance actuaries who are Fellows of other organizations and invites them to become Affiliate members in the CAS. Affiliate members are entitled to all the privileges of CAS membership other than voting and membership on admissions committees. Also, Affiliate members do not append CAS initials to their signatures.

In completing its mission, the task force devised a set of recommendations to the Board of Directors that, in addition to recommending that the CAS *not* seek to enter into bilateral Fellowship agreements with other actuarial organizations, proposed that the CAS continue to:

- Recognize the qualifications of general insurance actuaries through Affiliate membership and through

waiver of examinations toward Associateship and Fellowship in the CAS.

- Work with the American Academy of Actuaries and the Canadian Institute of Actuaries to ensure that qualified actuaries are not barred from practice in the United States and Canada.
- Work with actuarial organizations throughout the world to ensure that qualified actuaries are able to practice in all jurisdictions.

The challenge for the CAS going forward will be to communicate the reasons for this decision to the other organizations and to ensure that its position does not hurt the ability of CAS members to compete outside North America.

The complete text of the task force's report is posted on the CAS Web Site at <http://www.casact.org/private-reports/tfmutrecog.htm> and a copy can be obtained by request from the CAS Office. ■

## AFIR Colloquium Set For Norway

Norway will host the 2000 Actuarial Approach for Financial Risk (AFIR) colloquium in Tromsø, making it Norway's third international actuarial colloquium. Guest speakers are internationally acclaimed experts within the AFIR field. Topics will include the background and strategy of the Norwegian Petroleum Fund, solvency in the presence of combined insurance risk and financial risk, securitization of insurance risk, and risk-based capital. The colloquium also offers the opportunity to visit selected cities of Europe through their sightseeing tours and events.

For registrations fees, schedules, and programs, please visit the AFIR 2000 Colloquium Web Site at [www.afir2000.com](http://www.afir2000.com). ■



# Is It Really a “Clean” Opinion?

*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.*

**O**ptimistic Insurance Company, Ltd. (OIC) is a captive insurance company writing workers compensation coverage. OIC is domiciled on the Island of Little Regulation. Little Regulation allows captives to discount their loss reserves on their financial statement at a statutorily defined rate of four percent. Joe Actuary, FCAS, MAAA, has been retained to provide a loss and loss adjustment expense reserve opinion related to OIC.

Joe has completed his analysis and estimates the OIC loss reserve at \$100 million on a nominal or undiscounted basis and \$80 million on a discounted basis. In the scope of services, OIC has requested that a reasonable reserve range be provided. Joe has completed a sensitivity analysis and estimates a reasonable range of \$95 million to \$105 million on an undiscounted basis. Joe translates this into a range of \$76 million to \$84 million on a discounted basis.

OIC has a loss reserve of \$76 million on their financial statement and has asked Joe for a “clean” loss reserve opinion since their figure is within his reasonable range. Should Joe issue such an opinion?

## Pro

*The Statement of Principles Regarding Property and Casualty Loss and Loss Adjustment Expense Reserves* states: “The uncertainty inherent in the estimation of required provisions for unpaid losses or loss adjustment expenses implies that a range of reserves

can be actuarially sound.” The company’s held loss reserve figure is within Joe’s range and as a result, Joe should be comfortable issuing the requested opinion.

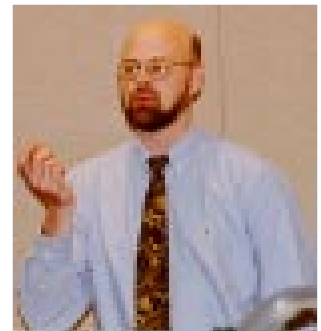
## Con

*The Statement of Principles Regarding Property and Casualty Loss and Loss Adjustment Expense Reserves* states: “If a reserve is to be stated on a present value, it may be appropriate to include an explicit provision for uncertainty in its discounted amount.” Further, ASB Actuarial Standard of Practice No. 20 *Discounting of Property and Casualty Loss and Loss Adjustment Expense Reserves* states: “Discounting

a reserve diminishes the risk margin implicit in a full-value reserve by the difference between the full-value and the discounted reserve. The discounting process itself introduces additional uncertainties. The actuary should be aware that a discounted reserve is an inadequate estimate of economic value unless appropriate risk margins are included.” The \$76 million figure does not include a risk margin and, as a result, a clean opinion can not be issued. Further, the \$76 million is at the very bottom of Joe’s range, suggesting the need for particular care in determining adequacy. ■

## Monaghan Wins Ratemaking Prize

**James E. Monaghan**, ACAS, MAAA, won the 2000 Ratemaking Prize for his paper, “The Impact of Personal Credit History on Loss Performance in Personal Lines.” Monaghan has worked for Metropolitan Property and Casualty Insurance Company in Warwick, Rhode Island since 1987. He has been responsible for pricing, reserving, strategic planning, research, and developing expert systems. CAS President **Alice Gannon** presented the Ratemaking Prize and a check for \$1,000 to Monaghan. Papers can be viewed on the CAS Web Site at [www.casact.org/aboutcas/rtnmkpriz.htm](http://www.casact.org/aboutcas/rtnmkpriz.htm). ■



James Monaghan

## AERF To Sponsor Annual Woody Scholarships

The Actuarial Education and Research Fund (AERF) is sponsoring the 5th annual Woody Scholarship Program, which awards four \$2,000 scholarships to undergraduate students. John Culver Woody, a distinguished actuary, earmarked funds in his estate for scholarships to actuarial students.

Undergraduate students who rank in the top quartile of their class, have successfully completed one actuarial examination, and will have senior standing in the semester after receiving the scholarship are eligible. AERF must receive applications by June 30, 2000. More information and an application form are available in the Academic Community section of the CAS Web Site at <http://www.casact.org/academ/wood.htm> or by calling AERF at (847) 706-3600. ■

Another point is that in my Swiss company, full-time employment currently means 41.25 hours per week. The length of the workweek varies from one European country to the next (see chart, page 9). Also, in many European countries, positions that would normally be “salaried” in the U.S. may be “hourly” positions. While working an hourly position often entails the inconvenience of punching a time clock, it generally also means that extra work hours accumulated can be taken as “comp time” later on.

Holidays and the length of the workweek to some extent reflect the culture of a country. They’re determined by what the people, or at least a large portion of them, consider important. They also demonstrate the influence of various economic theories. For example, the idea that the unemployment problem may be mitigated by legislating a shorter workweek is being hotly debated in France.

Differences from the American standard of “two weeks vacation per year” reflect cultural and theoretical influences as well. In my Swiss company, entry-level employees automatically receive 22 days of vacation. Senior employees receive more depending on their position and age. It’s the law in Switzerland that each employee must take at least two weeks of vacation a year. Moreover, the employee handbook of my company explains that, in the interest of the health of the employee, it is recommended that “two weeks be taken together.”

When I first heard this during my initial interview, I heard nothing else for the next ten minutes, because it seemed so outrageously wonderful. What would I do with five weeks of vacation? How could I possibly fill so much time? I have since learned how, a portion going, of course, to traveling between here and the States. And now having the larger amount of time strikes me as a requirement to civilized living. For me at least, it eases the pain of missing all those football games on Thanksgiving Day.■

## 25 Years Ago In *The Actuarial Review*

(From **Stan Hughey**’s “From the President” column:)

### Yesterday’s Questions

As actuaries, did we individually and collectively do all we could and should have done to avoid some of the staggering underwriting and investment losses our companies have incurred?

For 1974, should we have foreseen the sharply higher fire losses (not just the storms), the continued mushrooming of liability claims, the impact of inflation on auto claims, the additional dollars needed for older compensation claims, and the collapse of the stock market? Should we have suggested ways to blunt or minimize the impact of these factors?

(Still good questions today, even though some of the issues may have changed.)

(From an editorial by **George Morison**:)

### One-Way Communication

It has been emphasized from the beginning that one of the most important functions of *The Actuarial Review* is to provide a vehicle for readers to comment, question, complain about any aspect of property/liability actuarial doings. Each of the three editorials published to date challenged readers to express their opinions on countless topics in these pages.

While the staff can continue to fill the space with items of interest (subjectively selected) the objectives intended in adding this periodical to the list of Society activities would be better achieved if readers would take the time to express their opinions for publication.

(Getting more opinions from our readers is still our major concern. It is also of interest to note that in the issue 25 years ago, **Allen Bell** submitted his first of many double-croscics for the “It’s a Puzzlement” column.)■



Due to the arrival of **Kendra Felisky-Watson**’s new son, “Actuaries Abroad” will not appear in this issue of *The Actuarial Review* but will return in the near future. Matthew Daniel Piper, seven pounds eight ounces, was born on February 4, 2000. Congratulations Kendra!■

## CPCU Society To Broadcast Discussion

The Chartered Property Casualty Underwriters Society (CPCU), a community of insurance professionals who promote excellence through ethical behavior and continuing education, will air a discussion entitled *Financial Services Modernization: Threat or Opportunity* in 48 locations nationwide on May 24, 2000. Panelists at this live satellite broadcast will examine issues concerning the recently enacted Gramm-Leach-Bliley Act, including new redomestication and demutualization rules, safe harbor provisions, financial privacy rules, public policy, solvency monitoring, and standard-setting issues. Experts from the insurance, banking, regulatory, and consumer protection sectors will take part in the two-part broadcast.

For registration fees, speaker information, and downlink locations, please visit the CPCU Society’s Web Site at [www.cpcusociety.org](http://www.cpcusociety.org) or call (800) 932-2728.■

should be allowed to evolve into special interest sections, which could be the primary vehicles for delivering continuing education and research (see story, page 1).

**Mavis Walters**, chair of the CEO Advisory Task Force, presented some of the key findings of the CEO Survey. The task force was charged with identifying the needs of potential customers and employers of actuarial services and exploring how actuaries might best meet those needs. Task force members conducted interviews in 1999 with 14 P/C insurance industry leaders.

Walters related that to some CEOs it seemed that actuaries were risk averse in their own careers. In general CEOs tapped actuaries for nontraditional roles and promotions—actuaries did not approach management. Walters also spoke of the need for younger actuaries to have opportunities to solve problems and the importance of their developing strategic business skills and focusing on customer issues. (To view the entire report, see <http://www.casact.org/pubs/actrev/feb00/ceoreport.htm>.)

**LeRoy Boison**, vice president-international, asked CAS leaders to deliberate on how to help CAS members practice abroad and whether the CAS should work with developing nations and assist in teaching actuarial practice. Questions of whether the CAS should be more proactive internationally and how much the society should take on were also discussed in breakout sessions.

**Dale Porfilio**, chair of the new Joint CAS, CIA, and SOA Committee on Academic Relations, spoke on the relationship of the CAS with the academic community. He urged members to offer feedback on a white paper developed on the subject (see story, page 8).

Robert Brown, SOA president-elect, revisited the “Big Tent” concept in which actuaries would be recognized as the leading professionals in modeling and management of financial risk

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Brainstorms

# Why DFA?

by Stephen Philbrick

**D**ynamic Financial Analysis (DFA) is probably the fastest growing area in actuarial science. Yet to some, it seems like a solution in search of a problem. It is easy to show graphs of output and make the argument that distributions of future results convey more information than point estimates. Yet, at the end of the day, senior management makes decisions. Demonstrating the implications of decisions may fascinate risk-averse actuaries but it provides only incremental value to CEOs who are willing to make decisions with limited information.

DFA will provide more value when it indicates *different* decisions than those arising from traditional analysis.

One potential example involves the asset allocation between taxable and tax-exempt bonds. In **Manny Almagro** and **Tom Ghezzi**'s excellent paper on federal income taxes (<http://www.casact.org/PUBS/proceed/proceed88/88095.pdf>), they illustrate the optimum mix of taxable/tax-exempt bonds under a variety of circumstances. A number of factors affect the mix, but I'll start by illustrating the effect of the underwriting results. Their paper included a specific hypothetical example of a company with \$200 million in bonds. They calculated the optimal mix for several possible underwriting results:

**“Demonstrating the implications of decisions may fascinate risk-averse actuaries but it provides only incremental value to CEOs who are willing to make decisions with limited information.”**

Underwriting Gain (Loss)	Taxable Bonds	Tax-exempt Bonds
(\$10 Million)	\$44 million	\$156 million
(\$15 Million)	\$80 million	\$120 million
(\$20 Million)	\$116 million	\$84 million

For those companies with good crystal balls, one could “predict” the underwriting results for the next year, and plan the investment portfolio accordingly. Most companies are not so fortunate as to be able to predict their underwriting results with any certainty. For simplicity, let us assume that this company determines that the underwriting result will be either –\$10 million or –\$20 million, with equal probability. Thus, the expected underwriting result is –\$15 million.

The optimal taxable mix differs for the two results, however. The company would want \$44 million in taxable bonds if the underwriting result turns out to be –\$10 million, but \$116 million if the underwriting result turns out to be –\$20 million. While a company can alter its mix during the year based upon emerging experience, shifts of these magnitudes are probably higher than prudent invest-

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# Exact Ranking

by John P. Robertson

**D**avid Bickerstaff had the following puzzle published in the *American Mathematical Monthly* in 1961. It is based on an actual incident. He asked the editor of a college magazine to tell him the exact ranking of the five top placers in a contest. The editor declined but offered to pass judgment on his guesses. His first guess was *A-B-C-D-E*. He was informed that he was most skillful at being wrong, as he had each person out of her true position and not one in his ranking followed her immediate predecessor. He then asked if it were *D-A-E-C-B*. Now he was told that he had two in the correct position and two correctly following her immediate predecessor. David was then able to

determine the correct ranking. What is it?

## Two Fuses

The puzzle involved two fuses. Each would burn in exactly one hour, but not necessarily uniformly, and the two did not necessarily burn at the same rate over corresponding segments. The question was how to time 15 minutes. For extra credit an additional problem was to time 15 minutes using just one fuse.

Abbe Bensimon's solution to the first problem was to light one fuse at both ends, and the second one at one end. When the first fuse burns out, light the second end of the second fuse. From this point until the second fuse burns out will be 15 minutes. For the



second problem she suggests lighting both ends of one fuse, and, at the same time, lighting that fuse somewhere in the middle. When one segment burns out, light the remaining one in the middle. By keeping four ends burning in this way, the one fuse will burn out in fifteen minutes.

Steve Fallon, Leigh Halliwell, Greg Hansen, Noel Hehr, Michael Lewis, Orin Linden, Doug McKenzie, Dave Skurnick, and Anthony Yau also submitted solutions.

## Springs and Strings

A number of solvers were not listed in the last issue. They are Jason Israel, Paul Ivanovskis, Ignace Kuchazik, Aaron Schindler, and John Soutar. ■

## Brainstorms

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ment policy would suggest. Consequently, the company wishes to select a single taxable mix and hold it throughout the year.

One option is to select the taxable mix associated with the expected underwriting result. In this case, the indicated taxable amount would be \$80 million. This amount does not maximize the expected net income given the two possible underwriting results, however (the calculations are beyond the scope of this column). In this simple case, with only two possible underwriting results, we can use an optimizing technique in a spreadsheet to find the best taxable/tax-exempt mix. In realistic

situations, however, the underwriting results are represented by a distribution of possibilities. In very special cases, it may be possible to find the best answer analytically. But in general, the interactions are too complex and are not easy to represent analytically.

Even this observation does not provide the complete motivation for DFA analysis. Using dynamic assumptions to solve for the decisions that will lead to the maximum net income is one approach. In a dynamic world, however, risk is important. A particular choice

may produce the maximum expected net income, but the risk associated with that choice may be high enough that another choice is preferable. A DFA approach can highlight the risk and return trade-offs.

In summary, DFA provides *some* value when it can be used to illustrate better the potential results of various decisions, but DFA becomes a critical tool when the optimal strategies in a dynamic framework vary materially from the strategies associated with a static approximation of the world. ■

## Leadership Meeting

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and contingent events. Offering a modification of the concept discussed at last year's meeting, Brown described several proposed tactics to create an organization to accommodate Big Tent, including inviting groups like the CFAs, the International Association of Financial Engineers, and the Global Association of Risk Professionals to become members. Members of these groups could be recognized either with an FSA, honorary FSA, or Affiliate memberships.

Another proposed tactic involved starting new practice areas within the SOA, such as for financial engineering. These practice areas would be highly independent and would be responsible for determining their own qualification requirements. Using a concept he named "Alpha" with the visual diagram of a flower, Brown showed how the various practice areas would radiate like petals around a core organization.

Summaries of the meeting's breakout sessions are being compiled and will be reviewed by the Long Range Planning Committee, Executive Council, and Board of Directors. ■

## In Memoriam

**Paul S. Liscord Jr.**

(FCAS 1955)

February 23, 2000