Editorial

Actuarial education should not rest on current success

by Robin B. Leckie

What does the Society of Actuaries mean to us? For most actuaries it is probably viewed as our professional organization - it represents membership settings, publications, research, sections, and the threat of discipline. It also qualifies us and gives us our professional standing. At least for Fellows, study notes and examinations are a distant memory.

But it is the education and examination of new entrants, and the continuing education of members, that gives the Society its purpose. Without new entrants there is no renewal, no future. We are therefore devoting this issue of The Actuary to an exploration of the activities and issues surrounding the education of actuaries. Included are a survey of the universities offering actuarial programs, the story of two remarkable actuarial schools, articles from SOA education officers and staff, and an update on the Fellowship Admissions Course (FAC) program and continuing education. In addition, a special insert reporting on "Exam performance under FES" is included in this mailing of The Actuary.

A few years ago, the membership dumped down the Board of Governor's proposal for an experimental "alternative course" allowing examination credit for university courses. I am not sure why, but I suspect it was a combination of a concern for maintenance

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Foreseeing the future of the E&E system

by Esther H. Milnes

As general chairperson of the SOA Education and Examination Committee, I get many questions about the future of our E&E system. People ask, "What's up with E&E?" "Where do you think we'll be five years from now?" "What are your concerns about the E&E system?"

I don't have a crystal ball with the answers. I do see some trends affecting us now. And I have some questions about the future of the E&E system.

Increasing enrollment
The number of students taking exams has increased from 9,700 in May 1985 to 18,600 in May 1990. This is a very positive development for the profession. But this also has increased considerably the administrative workload.

Over the past several years, most examination administrative functions have shifted from volunteers to the SOA office staff. Volunteers no longer sort exam papers or maintain grade statistics. This shift has streamlined procedures, improved control, and positioned us to handle the increased workload and its associated problems. Will we need to shift even more work to the SOA office staff?

Our continued reliance on volunteer proctors and donated examination center space raises some concerns. Changes in exam structure and increased security concerns have complicated proctoring procedures. Increased enrollment makes it more

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difficult to find appropriate space. Financial pressures may make companies reluctant to donate space. Will we have to increase exam fees to cover the increased costs of administering the exams? As this student population wave reaches the Fellowship examinations, an increased need for volunteers to grade essay examinations is evident. Will we be able to muster the resources?

Expanding role for universities in educating actuaries
The role of universities in educating actuaries is expanding. In Canada nearly all new FSAs have received university education in actuarial science. In the United States more schools are setting up actuarial programs and encouraging students to pursue actuarial careers. Schools with programs already in place find enrollment growing. The Society is encouraging closer ties with universities and fostering communications among actuarial faculty. Our current E&E structure, with mathematics examinations which parallel typical college course offerings, has supported this development.

What might this expanding university education role mean for E&E? For one thing, it contributes to the increased examination enrollments.

Will it mean a reduced role for the Society in the educational process? As more universities offer courses covering the mathematical content of the SOA exams, fewer students follow a self-study approach. Almost everyone who passes those examinations now received education in these subjects primarily in a classroom rather than by self study. For Courses 100 and 110 (formerly Parts 1 and 2), the Society's role is simply to specify a list of topics to be covered, set minimum proficiency standards, and select questions to be included in the examination. It is up to universities (sometimes high schools) to select text books and set course content.

When self study is the major method of preparing for the examinations, the Society has traditionally taken a more directive approach. The Society outlines specific references to be mastered and provides study notes on subjects where no appropriate self-study material has been published. As universities become the primary educators on more subjects, the SOA role may diminish. How far will this go?

Increasing pressure for alternative ways to qualify
The only ways to earn credits to qualify as an FSA now are: (a) pass a standardized examination which is sponsored or recognized by the SOA; or (b) write a research paper which is accepted by the SOA for credit. (The intensive seminar requires both a paper and an examination to receive credit).

The standardized examinations now recognized by the SOA include:

- SOA examinations
- The basic Graduate Record Examination (GRE) with sufficiently high scores (for Course 100 only)
- Some examinations of actuarial organizations in countries outside North America, such as the Institute of Actuaries.

The debate continues on whether we should allow additional ways to qualify. The expanding role of university education is creating pressure to accept university credits in lieu of examinations. The membership objected and the Board withdrew approval of an experiment to allow credit for university courses certified by the Society. Canadians are debating the issue now.

Whatever the outcome, the E&E system is ready to handle the situation. Our flexible system means the debate can be conducted on its merits. No structural barrier to granting credits in other ways exists, and there's no structural requirement for allowing such credits either.

Will increased enrollment and administrative burdens make alternatives to SOA examinations more attractive in the future?

This continuing emphasis on the SOA examinations as the primary means of qualifying puts pressure on the E&E Committee to maintain the high quality of the examinations. In recent years, we have increased our training efforts and tried to use more conceptual questions. How well do the questions we ask really allow candidates to demonstrate their knowledge and their ability to apply it? Would alternative qualification methods be better at distinguishing qualified from unqualified candidates?

Increasing knowledge base
Actuaries need to know more than they used to. The need for continuing education has been recognized by the profession. The Society's Continuing Education Committee has begun to publish Professional Actuarial...
Specialty Guides and syllabus synopses to help FSAs keep their knowledge up-to-date.

What is the impact of the increased knowledge base on the E&E system? It has led to specialization within the profession. We've seen the development of special interest Sections in the Society and the practice councils in the AAA. The E&E system has followed this trend as we continue to channel students towards increased specialization. Our three specialty tracks are individual life and annuities, group benefits, and pensions. The Board has discussed whether to have an investment track. Some new elective courses on investments are being developed.

The E&E system has already changed to accommodate the increased knowledge. We now have course content committees for each of the core courses and Fellowship tracks. Our discussions focus more on educational issues than in the past. We have set regular review dates for each item on the syllabus. The special interest Sections have established education committees which provide valuable input and resources for the E&E process.

In spite of the changes, this increased knowledge base and the trend toward specialization is still putting pressure on the E&E system. The fundamental question is, "What does a person need to know to qualify as an FSA?" The education committee struggles with decisions about the following:

- What math is most relevant? (ASA requirements)
- What must every actuary know? (core requirements)
- What else must every pension (or life or group) actuary know? (specialty requirements)
- What other basic education (as opposed to continuing education) should be provided?

Pressure to add more topics mounts. Rarely do we agree on topics to delete.

Study notes have been an important means of dealing with the knowledge explosion. They enable us to condense and consolidate material that would otherwise be too voluminous to include on the syllabus. They also can be used to present material in a more instructional way than might be found in published material. Will the E&E system continue to fill the role of publisher of actuarial educational material? Will publishers in the actuarial field become more important?

Volunteer resources
Will volunteer resources keep pace with the demands? So far, the answer has been yes. Over the last few years we've added these new committees:
- Course Content Committees, 38 volunteers
- Fellowship Admissions Course Committee, 13 volunteers
- Research Papers Committee, 5 volunteers

The total number involved in E&E committees in 1990 was 490, or 7.6% of the total number of FSAs. That compares to 321 or 6.2% of FSAs in 1985.

Our increased enrollments will increase the pool of potential E&E volunteers. Will those people volunteer? Or will financial pressures on their employers limit their participation? Will more work shift toward the paid SOA staff? Will we have a system run entirely by professional staff instead of by volunteers?

Growth
All of these trends involve growth. The E&E system is well prepared to grow, and growth inevitably means change. I am prepared to make one prediction about the future. Will the E&E system change in the '90s? Yes!

Esther H. Milnes is Vice President and Associate Actuary, Prudential Insurance Company.

Universities respond to survey
by Robin B. Leckie

For this special actuarial education issue, I contacted universities listed in Section IX (Universities & Colleges) of the 1990 Yearbook. Seven said their actuarial programs were currently inactive, although there was an interest in resuming their programs. The 29 responses with active programs are summarized in this article.

At first it appears there is no common denominator among these programs. However, the responses show there are many similarities. Enthusiasm, interest in the career, and the marriage of instruction and research are evident at most of the responding schools and, of course, the important role universities can play in the development of our future professionals.

Degrees – Most of the schools offer degrees in actuarial science within the science or business schools or both. Some also offer masters degrees, and a few have Ph.D. programs. Almost all of the schools provide courses and instruction that complement the Associateship examinations for the Society of Actuaries and the Casualty Actuarial Society.

Instruction – Since the survey was sent only to Society members, all of the programs include staff consisting of one or more Society members. Most of the programs also are supported by Ph.D.s in mathematics or statistics, as well as economics and business. Many of the universities also provide instruction from local part-time practicing or retired actuaries.

Students – The number of students registered in the respective actuarial programs varies widely. Possibly some of this reflects differing definitions of what constitutes an "actuarial student;" mostly it is how the university is perceived by students to support the actuarial career. An interesting note is the number of graduate students. Some of these are Johnny-come-latelies, but most have been seriously committed actuarial students from the beginning of their education. A fair number are international students. A few of the more successful universities have cooperative programs where students alternate university sessions with work terms.

Research – "Publish or perish" is generally the dictum in the actuarial

Continued on page 4 column 1
programs just as it is in other fields. A few universities contract work for companies, government, or insurance associations. Our profession is well served by the interest shown by the academics and their students in advancing the horizons of actuarial science. In some cases the university may conduct research but it was not mentioned in the response.

Support - Many of the schools have some financial assistance, primarily from local insurance companies and consulting firms. For the most part these funds are used for scholarships or to fund research.

Almost all of the responses indicated the importance of professional and community support for their programs. Some of the respondents, primarily from universities with inactive programs, were looking for ways in which to get launched — needing both an interest from prospective students, and support from their faculty and university. It also appears they need active support from local actuarial employers. Bob Batten of Georgia State comments, “Academic actuarial programs are performing their functions of preparing young people for the profession in a very effective manner... Establishment of more high quality programs should perhaps be a goal of the Society in particular and the profession in general.”

It is interesting to note that the two schools with the largest actuarial enrollment (Waterloo and Laval) commenced their programs relatively recently. Their stories are so interesting that an article for each is included in this issue. No university comes close to the nine full-time Fellows on the faculty at Waterloo.

No concern appears to be present about the future need for actuaries or the attractiveness of the profession. A concern that the number of interested students may be increasing at too fast a rate has been expressed. This is apparent when it is noted that the number of students writing actuarial examinations through the Society has increased by 60% in the past three years. Paul Campbell’s (Hartford) response reflects a current strategy of the Society. "We must grow laterally as well as vertically; uncertainty will be a fact of the future, but we must redefine our role in managing it."

The Society asks all students to note their university on their exam applications. Unfortunately, most do not. But for those who do, I have prepared a table of the number of students in each of the past four years from a university with 40 or more mentions in 1990. Waterloo and Laval are not surprises, but some of the others are. A significant number of students come from universities without formal actuarial programs (or from schools that did not respond to the survey). Probably this is because of the size of the school and its proximity to actuarial employers.

Universities with actuarial programs or who desire to institute programs deserve our support. Let’s all get behind them.

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<td>Laval</td>
<td>B.A.S., M.S. Ph.D.</td>
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<td>U. of Manitoba</td>
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Profile of two actuarial schools
The French connection
by Gaston Paradis

The teaching of actuarial mathematics at Laval University dates back to 1951 and is due to the efforts of the late Professor Adrien Pouliot, then dean of the faculty of Science and Engineering. He learned that Industrial Life Insurance Company with its head office in Quebec City had three actuaries, all anglophones, who had received their actuarial education at the University of Manitoba. This convinced him that there was a need for actuarial teaching at Laval. For the first few years, the actuarial mathematics courses were attended by only a few students. They gained in popularity in the mid-'60s after the first full-time professor was hired in 1962 and as Quebec was entering into what is now known as its "Quiet Revolution."

At first, the offerings consisted exclusively of general mathematics, probability, statistics, and actuarial mathematics courses. Courses were gradually added in economics, finance, law, management, computer science, and insurance.

Université Laval

Laval University made a major step forward in 1968 when the actuarial program would become a "specialized" program leading to the bachelor of actuarial science degree. Casualty courses were added to the program in 1970 and in 1976 and an actuarial option was introduced in the graduate program of mathematics leading to the master's of science (actuarial mathematics) degree.

The most significant development happened in 1988 when the Council of Laval University formed the School of Actuarial Science, making it independent from the Department of Mathematics, of which it had been a part for 37 years. There are 9 schools at Laval compared to 61 departments. All the schools have a strong professional connotation and are run by a "Bureau de direction" composed of professors, students, and practicing actuaries from outside the university. The "Bureau de direction" gives its advice on every matter of academic concern.

Continued on page 7 column 1

New kid on the block
by Harry Panjer

The University of Waterloo, founded just 34 years ago, is one of the new kids on the block. New kids need to be especially creative to be successful.

Established in 1957 as an engineering school, the University of Waterloo quickly expanded to include undergraduate and graduate programs in mathematical science, natural sciences, and humanities, all taught on a cooperative basis. In the co-op system, students alternate semesters between studies on campus and work experience in industry. With approximately two-thirds of its 16,000 undergraduates in the cooperative system, Waterloo has the largest number of co-op students world-wide, followed by Northeastern University in Boston.

The actuarial programs attract about 10% of the 4,000 undergraduate and graduate students majoring in the mathematical sciences. Waterloo boasts the largest number of math majors in the world, followed by a Soviet university.

From the beginning, Waterloo worked hard to attract the best students and faculty members in the mathematical sciences. Waterloo is nearly always in the top five universities in the annual Putnam undergraduate competitions, along with Harvard, Cal Tech, MIT, and other prestigious U.S. schools.

It is in this context that actuarial science was started in 1964 and flourishes today at Waterloo. There are 9 actuaries out of a total of 170 professors in the mathematics faculty; each is a Fellow of at least two professional actuarial bodies. They teach a variety of courses in five actuarial programs: undergraduate, master's, Ph.D., post degree professional diploma, and part-time "exam prep" programs. Actuarial courses cover the Society of Actuaries Associateship syllabus and much of the Casualty Actuarial Society Associateship syllabus, as well as topics in pensions, loss reserving, life and property and casualty insurance, selection of risks, financial reporting, and solvency. Some courses, such as financial reporting, have a Canadian focus.

Classes covering SOA courses 100-135 are not taught by actuaries, but by specialists in these areas, such as numerical analysts or statisticians. The course content does not always correspond to the SOA syllabus. Waterloo's courses are designed to maximize the educational value to the student, with professional examination demands playing a secondary role. We believe that a well educated

Continued on page 7 column 1
Laval cont’d

One of the strengths of the Laval actuarial program in the '60s and '70s was its constant evolution and adaptation to change. We tried to keep pace by introducing subjects that the industry needed, and we did not hesitate to go further than required. For instance, we were aware in 1970 that we were taking a risk in introducing compulsory casualty courses in our program. We were convinced, however, that the casualty insurance industry needed casualty actuaries. The time soon came that they were in demand, especially when legislation was passed in the early '80s for certification of the reserves of casualty insurance companies by actuaries.

Laval's actuarial program has been attracting many good students for several reasons. First, the students know they will find a job when they graduate from the program. Second, they are aware of the difficulty of the program and this tends to attract the best students. Students entering the program have consistently ranked academically in the top 20 percent in their previous studies. Consequently, the rate of success at the SOA and CAS exams has constantly been well above average. This in turn made the program more attractive for the students and made the graduates more attractive for the employers.

Although we have been receiving very large contingents of new students each year for the past few years (200 a year for three years in a row), we witness a rate of unemployment approaching zero for the 75 to 85 who graduate each year. We realize that saturation will come soon if this number of new entrants is maintained. This is why efforts toward diversification and graduate studies are needed. Research and continuing education also are among our main interests. To realize our ambitions we must increase our professorial staff to a minimum viable level. We currently have eight professors and we should eventually at least double this number if the present level of 500 or so students enrolled in the program is maintained.

Much effort is being made currently on the development of research in actuarial science. Our recruiting efforts are directed mostly towards candidates that already have a Ph.D. degree in actuarial science or related fields. Recruiting efforts also are directed to candidates obtaining Ph.D. degrees and, at the same time, are already members of a recognized actuarial body or who are on the way to achieve this goal. We strongly believe that research and promotion of graduate studies are the keys to assure continuous development of actuarial science in the years ahead.

All the professors at Laval's School of Actuarial Science enthusiastically welcomed the measures which were taken in June 1990 by the SOA Board of Governors regarding its academic members. We strongly believe that such decisions are likely to enhance the overall mutual interest of actuarial academics and professional actuaries. The end product is sure to lead to stronger actuarial programs and improved actuarial education and professional qualifications. Let us hope that this is but the beginning of a series of measures that will lead to much stronger relationships between the actuarial profession and academic communities.

Caston Paradis is Director, School of Actuarial Science, Laval University.

Waterloo cont’d

student also will be successful in professional exams. Specialization begins early in undergraduate programs in Canada compared to the United States. Freshman students study insurance systems in Canada along with courses such as mathematics, computer science, accounting, and economics. In their second year, the students study probability and statistics, mathematics of finance, and introductory life contingencies, as well as optional courses. Undergraduate students can choose courses in finance, pensions, underwriting, and other areas, in addition to ASA/ACAS topics.

Most Canadian insurance companies and actuarial consulting firms support the undergraduate actuarial program by employing co-op students in their "work terms." Co-op students often spend work terms in other countries, such as the United Kingdom, Germany, and Australia, enriching their educational, employment, and personal experience. Students are ASAs or are close to becoming ASAs at the time of graduation and have studied many topics that will appear on Fellowship exams. All students must study both life and casualty topics, consistent with the one practice qualification in Canada, namely FCIA.

The post-degree diploma program is designed for graduates of non-actuarial programs who wish to become professional actuaries. They take a concentration of actuarial courses over a period of 8 to 16 months depending on their background. The master's program is an academic program requiring that students have a significant background in actuarial science. It focuses on graduate courses and research and can lead to Ph.D. studies. Most master's students become ASAs while at Waterloo.

The relatively new Ph.D. program attracts a handful of students who are interested in research and who will generally become academics. These students focus on mathematical/statistical aspects of actuarial science or closely related areas. On average, we expect to graduate one Ph.D. in actuarial science each year. The three Ph.D. grads to date are all teaching actuarial science. Thesis topics of candidates include risk theory, finance, demography, long-term care, and loss-reserving. Almost all Ph.D. students are ASAs, one is an FSA.

Research is a key component of faculty activity. The Institute of Insurance and Pension Research was formed at Waterloo in 1988. It is funded by annual contributions from insurance companies and consulting firms. Most of its resources are used to fund graduate student research assistantships which in turn support the graduate programs. Further, Waterloo faculty members and students conduct annual inter-company mortality studies and produce an annual report on economic statistics for the Canadian Institute of Actuaries.

As a new kid on the block, the University of Waterloo focused on developing strong academic programs. An attractive co-op system, and excellent support from industry balanced with traditional pure and applied research activities. Actuarial science is sure to continue to flourish in this supportive environment.

Harry Panjer, a Vice President of the Society, is a Professor in the Department of Statistics and Actuarial Science, University of Waterloo.
A view from the E&E office

by Marta Holmberg
SOA Education Executive

The Society of Actuaries' E&E system has changed dramatically in the seven years that I've been involved with it: let me share some of what I've noticed in that time.

With the business environment changing more rapidly, knowledge and techniques quickly become obsolete. People and systems must be adaptable. The Society's Flexible Education System (FES) is a good response to that environment. FES has made the E&E process more vital and relevant by allowing individuals to choose courses and programs to become an ASA or FSA. The process is more responsive to increasing demands. When new topics become more relevant to actuarial practice, elective courses on those topics are introduced.

In the present competitive environment the FSA must be able to demonstrate not only that he/she has endured a rigorous examination but also that he/she brings special skills and knowledge to bear on business issues and problems. The focus of the E&E system has shifted somewhat to education by making subjects more useful to current practice and tailoring the Fellowship specialty requirements to what the new FSA practicing in the area should know and be able to do. The goal is to ensure that the actuary emerging from the system is not only well tested, but well trained.

Greater emphasis on education is one reason for a major increase in the professional E&E staff. We have gone from one to four FSAs who are involved in all aspects of the E&E effort - designing new programs (e.g., the Fellowship Admissions Course) and new courses (e.g., investment topics), defining the course content for each course on an ongoing basis, and reviewing exams.

We have enhanced the staff support for E&E. A significant enhancement from the perspective of the exam candidate is the addition of the E&E ombudsman. The ombudsman serves as an advocate for the candidates, presenting their concerns and ensuring that they are treated fairly, and that individual needs are considered. Through the ombudsman we learn quickly when we have not adequately communicated some policy or practice, or when we have made what proves to be a bad decision. As we want to test candidates' knowledge rather than their patience, we welcome this validity check. When called for, we change things based on what we learn.

Our volunteers are an increasingly valuable resource, so we look for ways to best use their expertise. In terms of the volunteer/staff interface, the energies of the volunteer leadership are focused on policy and issues of major importance. The staff carries out the administrative details, conducts the research, and produces recommendations. Such effective teamwork is essential to the continuing success of the E&E process.

One move we have made to conserve our volunteer resources is to make greater use of testing professionals. ACT (American College Testing) is now developing the examinations on Operations Research, Numerical Methods and Applied Statistics, with the volunteer committee reviewing and approving the exams. We are also exploring with ACT actions we can take to enhance the exams and evaluation tools. Improvements in these areas will strengthen the exam system and ensure that we maintain the high standards set for membership in the Society.

In addition, we are making better use of experts in actuarial education. The Intensive Seminar in Applied Statistics was designed by an FSA/Ph.D. in concert with the E&E Committee. The Seminar uses both academic and business faculty to ensure that participants gain greater facility with the techniques and a keener appreciation of their use in actuarial practice. The Seminar is a program that combines good education with significant evaluation. We hope to expand the Intensive Seminar program and to implement other programs that as effectively combine the two functions of the E&E system.

The E&E system continues to thrive with the dedicated involvement of the volunteers and the staff. Keeping it strong is a challenge, but one that can be met with the able help of all the people who contribute to its success.

FAC or fiction

by Patricia L. Scahill

The first two Fellowship Admissions Courses (FAC) were offered in September 1990 where Fellowship diplomas were awarded to 129 people.

The course was designed to accomplish two primary objectives:

• To provide a more effective means of increasing FSA candidates' awareness of professional ethics than the typical exam format

• To assure that new FSAs have been exposed to unstructured problem solving

As you read in the November 1990 Actuary, the first FAC met these objectives. The FAC Committee, however, will continually refine the course content and structure to maximize the effectiveness of the course. The feedback received from participants - both students and faculty - is an invaluable source of ideas for improvement. Plans for the March 1991 FAC have now been finalized.

There is a long lead time for developing FAC case problems and recruiting facilitators, who are the faculty. Cases begin with a situation called a case lead; then the case is written by a committee member or a professional case writer - is an invaluable source of ideas for improvement. Plans for the March 1991 FAC have now been finalized.

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You ask for it, you get it

by Barbara Choyke
SOA Director of Continuing Education

"We're drowning in information and starving for knowledge."
Rutherford Rogers, Yale librarian

Each day's mail brings a glut of offers from many sources, all advising us of opportunities to increase our personal and professional knowledge. Our "in" baskets overflow with specialized publications, brochures on workshops and conferences, and video and audio tape catalogs. It's a challenge to sift through the clutter and pull out the information we can use to our best advantage, considering the limited time and dollars available.

How does the Society's Continuing Education (CE) offerings differ from others? In one very important way - we ask the people who will benefit from our programs what they need to know and design our offerings specifically to meet those needs.

The responsibility for the Society's continuing education program is divided between the Program Committee and the Continuing Education Committee. The Program Committee plans and implements the three spring and annual meetings and the CE Committee sponsors seminars, symposia, and teleconferences on current subjects. Seminar planners rely heavily on the CE Committee and Sections to help target "hot" topics for one- and two-day programs, which are usually co-sponsored by another professional organization with a common interest in the subject.

Each special interest Section is represented on the Program Committee. Consequently, the entire Society membership is the main voice in determining what will be offered at the spring and annual meetings. Meetings are structured from the results of program surveys which indicate members' top choices from a list of possible topics. Meeting sessions range from highly technical to general business management and from small workshop to intensive seminar format style.

Although the Society has no formal continuing education requirements, it makes a conscious effort to offer content that helps satisfy CE requirements of other actuarial organizations. The Society has applied to issue CE credit to CPAs for specific topics. We are already approved to do so in Illinois. By year's end, we hope to include the other 49 states.

Under the Working Agreement signed by the Society and the five other organizations represented on the Council of Presidents, the Society's Encouragement Policy Committee is investigating ways to communicate opportunities among the organizations and to stimulate co-sponsorship of seminars and other CE programs.

Since the CE division is not subsidized by its membership dues, each seminar and meeting must cover its costs. As a result, the financial success of the CE programs is directly linked to the quality of seminar and meeting content. We pay careful attention to comments made by attendees on the evaluation forms provided at each session. Improvements suggested that are currently being implemented include:

- increased quality of speakers with SOA staff taking a pro-active approach toward helping speakers with presentation skills
- stricter guidelines for handouts and audio visual enhancements
- increased effort to coordinate panel members and moderators
- alternative methods for disseminating information, reducing paper flow
- more advance notice of seminars
- more participatory seminars, fewer lecture formats

Both the Committee on Continuing Education and the Program Committee report directly to the Continuing Education and Career Encouragement Policy Committee, where policy issues are discussed and presented to the Board.

Questions, comments, and suggestions on CE issues are welcome. For Meetings, call Karen Blizzard, Manager of Meetings, 708-706-3541, and for Seminars, call Barb Choyke, Director of Continuing Education, 708 706-3546.

Spring 1991 Seminar Calendar

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<td>Asset Liability Management for Life Insurance Companies</td>
<td>Feb 10-13</td>
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<td>&amp; April 7-10</td>
<td>Wharton School</td>
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<td>Multivariate Approach to Duration Analysis</td>
<td>March 6-7</td>
<td>New York</td>
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<td>Product Development Boot Camp</td>
<td>April 16-17</td>
<td>Marriott East Side</td>
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<td>Living Benefits</td>
<td>April 17</td>
<td>New Orleans</td>
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<td>Group Insurance, the Next Decade</td>
<td>April</td>
<td>Sheraton Hotel</td>
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<td>Flexible Pricing &amp; Technical Issues</td>
<td>May</td>
<td>Chicago and Boston</td>
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<td>Chief Actuaries Open Forum</td>
<td>May 6-7</td>
<td>White Sulfur Springs, W.Va.</td>
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<td>Options: Practical Applications for Insurance Companies</td>
<td>May 15</td>
<td>Waldorf Astoria</td>
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<td>Healthcare Financing: Issues for Insurers</td>
<td>June 5</td>
<td>Colorado Springs</td>
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For more information, call 708-706-3545.
Editorial cont'd

...of actuarial qualification standards, and a perceived arrogance of the Board by our members (our best available alternative to kicking out the rascals!). But did we do the right thing?

For the most part, that debate is left in abeyance in this issue. However, I do not wish to see it left altogether unmentioned. At the time of the original debate, I was a past President of the Society who remained silent, mainly because I assumed the bylaw would pass. I agreed with the "rascals." Since then I have retired from active actuarial work, but teach part time at the University of British Columbia as an adjunct professor of insurance and risk management (but not actuarial science). My academic bias may therefore negate my position, but I feel I must at least state my view. An alternate route deserves our consideration. In fact I would go further - the universities ought to be our only route for the bulk of the Associateship qualification.

My reasons for taking this position are:

- The administration of examinations threatens to overwhelm an essentially volunteer administering body.
- The Society should devote its priorities to core actuarial education and qualification supported by the universities, and leave to the universities mathematical and statistical techniques and other fringe area subjects.
- We should seek out a stronger bond with undergraduate university programs, thereby giving our profession a stronger external influence and participation and a broader education.
- We should not worry about a weaker qualification requirement so long as we control the standards for Fellowship (and for some time for Associateship). Other professions survive with a far more delegated role than would ever be appropriate for the actuarial profession.

There is at least one concern with this position. The actuarial profession is currently highly regarded by prospective entrants, perhaps because of the recent publicity as the top rated job by The Jobs Rated Almanac. Would a more active role by universities overtake the profession with more students than jobs?

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**Minority recruiting asks for support**

**by Linda M. Kahn**

The Committee on Minority Recruiting needs help funding scholarships. Since 1977, this committee has been administered jointly by the Society of Actuaries and the Casualty Actuarial Society to encourage qualified minorities (blacks, Hispanics, Orientals, native North Americans, and others) to seek an actuarial career. This encouragement is in the form of individual scholarships and financial support of actuarial summer programs for talented high school students at Howard University in Washington, D.C., and Florida A&M in Tallahassee. Remarkable success is evidenced by 23 scholarship recipients who are now members of the sponsoring societies, with more taking exams.

**Applications to increase**

Donations are needed. Scholarship applications for the 1991-92 school year will be reviewed in June. Of 54 applications submitted last year, 29 scholarships were awarded, for about $36,000. Support for the summer programs was about $42,850. While the committee wants to encourage all well-qualified minority applicants, it is limited to the funds that are available.

**Donations tax deductible**

Contributions are deductible for U.S. federal income tax. If an employer has a "matching contribution" program for contributions to a 501(c)(3) organization, an individual contribution is maximized by an employer match. To make a donation, please make checks payable to "CAS/ SOA Minority Recruiting Program" and mail them to the Society of Actuaries, 475 N. Martingale Road, Suite 800, Schaumburg, IL 60173-2226.

Linda M. Kahn, Chairperson of the Committee on Minority Recruiting, is Director of Program Management, Pacific Maritime Association.

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**26th Annual Research Conference**

The 26th Annual Actuarial Research Conference will be conducted August 8-10, 1991, at the University of Illinois at Champaign-Urbana, Ill. Conference organizers are Esther Portnoy of the University of Illinois and Charles Fuhrer of Washington National Insurance Company. Anyone interested in presenting a paper on any topic of actuarial research, please write to Charles Fuhrer, Washington National Insurance Company, 1630 Chicago Avenue, Evanston, IL 60201, or call 708-570-4864.

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**SOA accepting applications for Ph.D. grants**

The Society of Actuaries is accepting applications for the Ph.D. grants program, one of the academic relations initiatives approved by the Board of Governors in 1990. (See front page article in the September 1990 *Actuary*.)

The purpose of the $10,000 annual grants is to encourage graduate students to complete research in actuarial science and to pursue an academic career in North America. Grants are awarded on the basis of individual merit, with preference given to candidates who have an affiliation with a North American actuarial organisation, and to candidates who are likely to pursue an academic career in North America.

The completed application form and supporting materials must be received by March 15, 1991. Recipients will be notified by June 15, 1991. For more information or to obtain an application form, please call Warren Luckner at the SOA office, 708-706-3572.

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I do not imagine that we will proceed very quickly with any change in approach, but I hope we do not rest entirely on our current successes, and assume all will be right in the future.
Canadian insurance
by William H. Aitken

Canadian Insurance Practices by Franklin Reynolds. Published by Reynolds, Thorvardson, Ltd., Box 773, Waterloo, Ontario N2J 4C2, Canada (519-886-5232), 691 pages. ($70 Canadian or equivalent U.S.).

Canadian Insurance Practices was developed from course notes by Professor Reynolds over the past six years. It is used as a text by first-year actuarial students and by other students in an eight-month course at the University of Waterloo.

The early chapters include some interesting history and some important principles of insurance. The text covers life insurance, casualty insurance, group insurance, and pensions. It also covers premiums, cash values, policy provisions, dividends, and supplemental benefits.

While the emphasis is on breadth, there is more than a little depth in the areas of disability, underwriting, commissions, taxation, investments, and financial reporting.

Just to keep the material interesting, the author throws in an occasional opinion. For example, the actuary's role is modestly mentioned on page 216: "...The raison d'être for establishing an insurance company is to distribute the actuary's expertise...."

Premium and reserve calculations are included and are based on realistic interest, mortality, and expense assumptions. (The net premium plus loading approach is not taken.) The effects on premiums and reserves of varying the assumptions are illustrated.

Did you ever wish to have sets of census, insurance, and annuity q's? All ages and both sexes are included.

The text is timely with regard to an amazing number of recent developments but, of course, obsolescences will creep in as the months go by. A new edition will be needed every three or four years.

This book would be an excellent gift for a new Associate.

William H. Aitken is with the Department of Statistics and Actuarial Science, University of Waterloo.

Career encouragement – How and why
by Bill Kerrigan

The Society's emphasis on strengthening relations between the academic community and the actuarial profession is evidenced through changes to the Career Encouragement Committee, as well as its planned activities for the near future. In the fall of 1990 the committee was restructured and renamed the "Career Encouragement and Academic Relations Committee." Its revised charge is to (1) develop ways of providing information about actuarial careers to high schools, colleges, and universities; (2) examine and coordinate ways of strengthening relationships between the actuarial profession and colleges and universities; and (3) investigate trends, opportunities, and potential new fields of actuarial employment.

The committee, chaired by Daryle Johnson of Pacific Mutual, has developed the following initiatives to achieve progress in the first two charges:

- The committee maintains an ongoing relationship with the Mathematical Association of America (MAA), an association of professors. For the past several years, Robert Musen had served as the Society's liaison with the MAA and as a member of the MAA's Committee on American Mathematics Competitions. The Society is one of the principal financial sponsors of the competitive high school and junior high school examinations.
- The Society will sponsor an exhibit booth at the joint annual meeting of the American Mathematics Society (AMS) and the MAA. Society recruiting material will be distributed and publications displayed. This will be an opportunity for several thousand college mathematics professors to learn first hand about the actuarial profession.
- An article on an actuarial career will be included in the MAA publication FOCUS. In addition, the MAA will feature an actuary in one of its monthly profiles on "Mathematician of the Month."
- The committee has been pro-active in inviting the heads of mathematics departments to Society meetings and arranging for discussions with the Society's leadership at these meetings.
- A review of the four general recruiting books is under way. The objective is to determine ways the material can be made attractive to a broader range of those students who have the skills and ability to succeed in the examination process, by presenting a balanced picture of the exams and the business career which often follows that process.
- The committee reviews and approves applications for educational institution grants for full-time faculty members attaining ASA/FSA status. These grants are part of the
New Education and Research Section

The rumor is true
by Edward W. (Jed) Frees

You may have heard a rumor about the formation of a new Society special interest Section concerning education and research. The rumor is true. You also may have questioned the need for such a Section since education and research are the two primary purposes of the Society of Actuaries. This article offers the rationale for forming an Education and Research Section.

Background
The Society is a professional organization which has more than 12,000 members. Most of the work of the Society is done through its committee structure. About 65 committees exist in the Society and some have a number of subcommittees. In addition, nine special interest Sections exist within the SOA structure. These Sections are: Futurism, Health, Individual Life Insurance and Annuity Product Development, Investments, Life Insurance Company Financial Reporting, Nontraditional Marketing, Pensions, Reinsurance, and now the Education and Research Section. Special interest Sections are intended to be more responsive to the needs of the membership than the formal committee structure allows. They provide a vehicle for a group of Society members to study and discuss common professional interests.

At its June 1990 meeting, the SOA Board of Governors adopted a number of recommendations that were originally formulated by a Task Force on Strengthening Relationships between Universities and the Actuarial Profession. Many of these initiatives reduce barriers that have deterred academic actuaries from becoming directly involved in Society affairs. The Board also approved a recommendation that a separate special interest Section be formed within the Society.

Harry Panjer took the lead and structured the 14-member organizing committee. Bylaws were drafted and approved by the SOA Board of Governors on October 14. The final step in the formal process of creating a new Section is for 200 Society members to pay the $5 Section dues, which has now occurred. All that remains is to elect officers of the Section council.

Why an Education and Research Section?
The purpose of the Section is to provide a forum to bring academic interests closer to the mainstream of regular events within the Society and to foster a greater appreciation for actuarial concerns in the larger academic environment. In addition to full- and part-time academic instructors in actuarial science, it is hoped that the membership will consist of directors of employer-sponsored actuarial programs, participants in the SOA's Education and Examination programs, and all other persons, both academic and practicing actuaries, interested in actuarial education and research. One purpose of the new Section is to provide an umbrella organization within the Society for all individuals interested in education and research, regardless of their field of interest. This is especially important for academic actuaries, who tend to be generalists rather than specialists in a particular field.

Not all leading actuarial researchers have the professional accreditation necessary to belong to the Society. Further, many directors of actuarial and pre-actuarial programs at universities have traditional mathematics training and do not have any formal actuarial affiliation. In the interest of reaching as many of these non-SOA members as possible, the Section also will offer a correspondent/subscriber status. These individuals may not be members of the Section, but will receive the Section newsletter and other information with the hope that those with correspondent/subscriber status would be active participants in many of the Section activities.

The Section will work to enhance research in actuarial science and promote the professional development of the Society membership by enhancing relations with the academic community. The main mechanism for bringing academic interests closer to the general membership will be the Section's interaction with the Program Committee and Continuing Education Committee. We hope to sponsor, both singly and jointly with other Sections, several sessions at Society meetings and continuing education programs.

To survive in a competitive world, the actuarial profession must retain its leadership in the development and application of techniques used for understanding the behavior of financial security systems. In North America, much of the basic educational training and research for this is accomplished in university settings. The Education and Research Section provides a mechanism for the actuarial profession to be more closely linked to the academic community and thus, to use more efficiently the many resources of universities.

Edward Frees is Associate Professor of Business & Statistics, University of Wisconsin.

Contest for best paper announced
The Scientific Committee of the 24th International Congress of Actuaries is sponsoring a contest for the best paper on the topic "New Challenges Facing 21st Century Actuaries." The contest provides an opportunity for actuaries to speculate on the future direction of the profession as we approach the year 2000. There is a monetary award ($1,000 Canadian) for the winner, who will be announced at the Congress. The deadline for submissions is May 30, 1991. Further details, including contest submission forms, are available from Scientific Committee, 24th International Congress of Actuaries, P.O. Box 1296, Station B, Montreal, Quebec H3B 3K9 Canada (Fax: 514-875-2672). The 24th International Congress of Actuaries will be conducted in Montreal from May 31 through June 5, 1992.
A broader scope for actuaries

by Daphne Bartlett

"We are engaged in a novel and noble experiment." Thus begins the first letter from Chairman Jim Hickman to the new Committee for Research on Social Concerns.

The committee, recently established by the Society's Board of Governors, will be responsible for: (1) identifying social concerns with actuarial aspects on which objective analysis, research, and creative input could be provided; (2) forming task forces to prepare white papers on selected issues; (3) reviewing the output of the task forces for compliance with the Society's Constitution; (4) transmitting the resulting white papers to the American Academy of Actuaries and Canadian Institute of Actuaries for use in their public interest activities.

The first task force with Judy Faucett as Chair will perform research on life insurance sales illustrations from the perspective of the consumer, with a goal of a completed white paper by the annual meeting next October. It is expected that the task force will objectively analyze the current situation and offer ideas and suggestions for improvement. The end product should assist in public discussion of the issue.

As the instigator of this "novel and noble experiment," I would like to share some thoughts on why and where this fits as a priority in my term of office as your President.

It all started with life insurance sales illustrations. A couple of years ago, I wrote a letter to the Editor of The Actuary suggesting that this issue was one in which the Society should get involved. Nothing much happened. Certainly, more people are talking about the problems today, but no solutions, or even suggestions for solutions, are being offered.

I am using the idea of having the Society perform research on the issue as an illustration of how we could broaden our thinking about our work, research, and professionalism. Feel free to substitute your own favorite "social concern" as you read on.

An actuary is more than a technician. Why are sales illustrations the business of actuaries? Because we have by far the best training and experience to provide meaningful input to the debate. And, if we don't provide input, it will be provided by others who are less qualified, or it won't be provided at all. True, the issue isn't purely actuarial if you define the actuary as a technician. But if, instead, you consider the actuary as a business person with a technical foundation, then what better example of an actuarial issue could there be?

Actuarial research can also cover business problems. Why should the Society be involved, rather than the Academy? Because the Society is a research organization, and what is needed here is research of a somewhat different kind than we have performed in the past. Consistent with the view of the actuary as someone with a broader background than a technician, our research doesn't always have to involve analysis of numbers—it can involve objective analysis of business problems without any major mathematical component. Many of us do this in our daily work activities as actuaries. Why can't we extend the concept to the Society itself?

Serving the public. By addressing the highly controversial issue of sales illustrations, are actuaries creating a situation which could cause competitive difficulties for some employers? This question goes to the heart of the question many actuaries have been struggling with for years—what's our role? Our employers or our profession? Whatever the answer, the latter should always be the latter. Our profession exists to serve the public interest, and we should keep that in mind.

Should the Society even consider addressing an issue if there is the potential for creating conflict? When our contribution could assist the debate, we could be considered derelict in our professional responsibility if we don't speak up.

Broadening our scope. The concepts underlying the relatively simple question of whether or not the Society should address the sales illustration issue are very important to us in the uncertain times ahead. We need to broaden our scope as our traditional employment avenues narrow and our numbers increase. What better way to prove to our present and potential employers that an actuary has both business and technical talents by performing research which uses both types of skills? And, by providing objective input on many issues, we can demonstrate that we are sensitive to our roles as professionals serving the public.

The Committee for Research on Social Concerns sprang from the idea of a task force to tackle the sales illustration question. But the concept led to the creation of a permanent committee with a broader charge. This group is in the process of identifying other issues on which our ideas and objective input will be valuable. If the "novel and noble experiment" succeeds, the public image of the actuary will be improved and our employment opportunities could be broadened. We also will have the personal satisfaction of being part of a profession which has made an impact on some of the important concerns facing society.

Planning for the Society's future. How does this fit among your year's priorities as President of the Society? It is one of the steps in laying the groundwork to achieve my only priority—keeping the Society of Actuaries strong, healthy, and growing throughout the 1990s and the years to come. This may not happen if we, as individuals, do not recognize and make an effort to overcome the difficulties that are likely to lie ahead.

Most of us have had comfortable careers, employment security and, as a result, a reluctance to venture into unexplored actuarial territory. The Committee for Research on Social Concerns hopes that the concepts underlying its work will encourage all members of the Society to broaden their thinking and to support and continue the effort to help ensure our successful future.

Daphne Bartlett, SOA President, is Executive Vice President, Celtic Life Insurance Company.
New additions to SOA library

The following is a partial list of additions to the SOA library. Members may borrow library books by contacting the library, 708-706-3538 or 708-706-3575.

Circulating
- C-Span Video (2 tapes), Senate Finance-Social Security Tax, February 5, 1990. (video)
- Ellis, Charles D., Investment Policy: How to Win the Loser's Game. 1985. (uncataloged)
- Fumento, Michael. The Myth of Heterosexual AIDS: How a Tragedy has been Distorted by the Media and Partisan Politics. 1990. (RA644.A25F85)

Schnitman, L. Seth. How Safe is Life Insurance?. 1933.
- Seal, Hilary L. Survival Probabilities: The Goal of Risk Theory. 1978. (HG8053.54)
- Wright, Elizur. Traps Baited with Orphans or What is the Matter with Life Insurance, 1877.

Faculty position open at Georgia State

Position: Assistant/associate professor in the actuarial science program, beginning fall 1991, at Georgia State University.

Qualifications: Ph.D. and Associate-ship in the Society of Actuaries (SOA) or the Casualty Actuarial Society (CAS), or a master's degree and Fellowship in SOA or CAS.

Applications: Send vita to Professor Robert W. Batten, Georgia State University, College of Business Administration, Dept. of Risk Management & Insurance, P.O. Box 4036, Atlanta, GA 30302-4036. Preference will be given to applications received before March 31, 1991.

REFERENCE
- Syllabus

It's party time!

We note an article in (Waterloo) MathNews in which the Actuarial Science Club describes what it's going to do in the coming months under the presidency of Lisa Chen — from academic talks to sporting events. Why should anyone join? "Help to change the image of ActSci. How many times have you had to explain what ActSci is, only to have people say, 'Oh, that sounds really boring.' We're going to be known as the party people who make loads of cash and have a lot of fun, fun, fun. People will not have to ask what ActSci is about: when you tell them you're in it, they'll say 'Wow! Can I hang out with you?'

Excerpt from the University of Waterloo Gazette, October 1990, submitted by Harry Panler.

SINGLE SLICES by Peter Kohlmaat

Be prepared, Linda... I was born to be wild.

Bob Wilburt, Actuary, showing mid-life crisis early-warning signs.

Transactions
authors profiled

Fifteen papers were accepted for Volume XLII of the Transactions, and 11 authors were profiled in the November 1990 and January 1991 issues of The Actuary. These biographical sketches profile the seven remaining authors of papers not covered in previous issues.

"Statutory Reserves for Nonlevel-Premium Policies," by A. Stephen Beach

A. STEPHEN BEACH, ASA 1988, graduated from Ohio State University with a B.A. degree in mathematics and actuarial science and began his actuarial career with Allstate Life Insurance in group pension valuation. In October 1987, he transferred to the North American Company for Life and Health Insurance, where he was active in individual product development. In November 1989, Beach returned to Allstate Life, where his primary interests are in capital management and assurance of solvency. He is now working toward his FSA on the individual life and annuity track.


RANDOLPH M. FRIEND, FSA 1983, received a B.S. and an M.A. in mathematics from the University of Nebraska-Lincoln and also attended a program in actuarial science there. His first actuarial position was with Capital Holding Corporation (1976-83). Then he was a consulting actuary at Lewis & Ellis, Inc. (1983-85) and following that, vice president and actuary at JTVA, Inc. (1985-90). He is currently a consulting actuary at William M. Mercer, Inc., in Dallas. He is an enrolled actuary and a member of the American Academy of Actuaries.

"An Excess Spread Approach to Nonparticipating Insurance Products," by Mark W. Griffin

MARK W. GRIFFIN, FSA 1983, is vice president of Morgan Stanley & Co. Inc., where he is involved in the development and implementation of investment strategy and asset/liability management for insurance companies. Griffin is a regular contributor to Society and industry meetings, and has authored a number of Section newsletter articles. He is a member of the Investment Section Council. Griffin received a B.Math at the University of Waterloo, and is a chartered financial analyst.

"Pricing of Accelerated Benefit Plans," by James B. Keller

JAMES B. KELLER, FSA 1986, is an assistant vice president and individual life reinsurance actuary at Lincoln National Life, a company he joined in 1983 after working at Capital Holding for two years. He received a B.A. degree, summa cum laude, in mathematics and economics from Indiana University in 1981. Keller has been serving on the Risk Classification Committee of the American Academy of Actuaries since 1988. He was a panelist at the SOA 1988 AIDS symposium and a 1988 spring meeting. His published articles include "Mortality Expectations Based on HIV Infection Status at Time of Underwriting" (Product Development newsletter) and "HIV Infection: New Business Mortality Expectations" (Product Development and Reinsurance newsletters).

"Cash-flow Matching and Linear Programming Duality," by Rama Kocherlakota, E. S. Rosenbloom, and Elias S. W. Shiu

RAMA KOCHERLAKOTA, not a member of the Society, is a National Science Foundation post-doctoral fellow and an adjunct assistant professor at the University of California Berkeley. He has a bachelor's degree from Princeton and a doctorate from Harvard, both in mathematics. He worked for several summers at the Great-West Life Assurance Co. in Winnipeg. His article, "Algorithms for Cash-Flow Matching," co-authored with E. S. Rosenbloom and Elias S. W. Shiu, appeared in Volume XL (1988) of the Transactions.

"Pricing of Accelerated Benefit Plans," by James B. Keller

E. S. ROSENBOOUM, not a member of the Society, is an associate professor in the department of actuarial and management sciences at the University of Manitoba. He obtained a B.Sc. (Hons) degree in mathematics in 1970 and a M.Sc. degree in mathematics in 1971 from the University of Manitoba. He obtained a Ph.D. in operational research from the University of Waterloo in 1976. Before joining the University of Manitoba, Rosenbloom taught at the University of Lethbridge and at the University of Alberta. His research interests include manpower scheduling and operational research models in finance. Rosenbloom has been published in Cahiers du Centre d'Etudes de Recherche Operationnelle, Congressus Numerantium, European Journal of Operational Research, Managerial Finance, and Mathematics of Computation.

Continued on page 16 column 1
Review seminars, actuarial classes offered

The Temple Actuarial Science Institute will offer intensive review seminars for the following examinations:
- Course 151, April 12, 13.
- Course 160, April 25, 26.
- Course 161, May 4.
- Course 162, April 27.
- Course 165, April 11.
- Course 200, April 1-6.

All classes will be conducted from 8:30 a.m. to 4:30 p.m. For information, write to Bonnie Averbach, Program in Actuarial Science, Ritter Hall Annex 475, Temple University, Philadelphia, PA 19122, or call 215-787-8153.

The University of Washington Extension has announced its actuarial science classes for the spring quarter. March-May courses offered are in the certificate program in actuarial science: Calculus and Linear Algebra (Course 100), Probability and Statistics (Course 110), and Numerical Methods (Course 135).

For information or to receive the UW Extension catalog, call 206-543-2320, or write University of Washington Extension, 5001 25th Ave., N.E., GH-21, Seattle, WA 98195.

Committee awards first FSA grant

The SOA Career Encouragement and Academic Relations Committee recently awarded the first $5,000 grant to an educational institution in recognition of a full-time faculty member attaining FSA status.

The grant was made to the University of Waterloo, based on the achievement of Professor Keith Sharp, who completed the requirements for his FSA designation at the Toronto Fellowship Admissions Course last September.

The University of Waterloo intends to use this grant to purchase computer equipment and software to be used by actuarial science students and faculty, to provide financial support for attendance at actuarial research conferences, and to provide research assistantships for graduate actuarial students.

The grant program is one of the initiatives implemented to strengthen the relationship between the Society of Actuaries and the academic community. For more information about the grant program or any of the other academic relations initiatives, call Judy Yore at the SOA office, 708-706-3573.

March insert gives elections survey results

Watch for a special supplement to the March Actuary which reports results of a survey about the 1990 elections process. The Task Force to Review and Recommend Changes in the Society's Election Procedures mailed the survey to all Fellows, and the results are based on 1,838 responses, a 29% return rate.

Mail alert

The Transactions 1985-86-87 Reports of Mortality, Morbidity and Other Experience was mailed to members the first week in January. (Note: Because of the date of the Reports, it was not sent to new 1990 Associate members.) The SOA Yearbook was mailed the second week of January. If you have not received these publications, please call Donna Klehr at the Society office, 708-706-3526.
Dear Editor:

SOA nonmembers can submit papers
It was interesting to read the article "Where should I publish my article" by Kenneth McFarquhar (October Actuary 1990).

The article does not mention which publications require a membership in the Society to be eligible to submit articles. It seems to me that the Transactions is treated as a journal for the SOA members, of the SOA members, and by the SOA members. There are many readers who are aspiring to be actuaries but not quite there yet (myself included). Why can't they contribute to the Transactions?

Is any other publication listed there in that category? As a nonmember of SOA. I would like to know.

Editor's note: Papers for Transactions can be submitted by a nonmember of the Society but must be sponsored by a member, or a member may collaborate in joint authorship with a nonmember. At the time the paper is submitted, the sponsoring member must indicate that he or she has reviewed the paper and considers it appropriate for publication in the Transactions. Articles by nonmembers also can be submitted to The Actuary, ARCH, and Society Section newsletters, with content approval by the editors of those publications.

Kuru deserves attention
Although I first heard of AIDS in 1983, like most people I promptly forgot about it until it became a crisis in the media a few years later. In retrospect, everyone in 1983 should have given AIDS the attention it received in 1986.

Just recently, Scientific American reported a disease of similar morbidity – once in an article, "Tainted Feed, Mad Cows," which appeared in the May 1990 issue, and again in "Oravske Kuru," which appeared August 1990.

The disease goes by several names – bovine spongiform encephalopathy (BSE), Creutzfeldt-Jakob disease (CJD), and kuru. The disease is similar to AIDS in being 100% fatal a few years after symptoms begin and in showing no symptoms for several years after being contracted. It is unlike AIDS in that it affects sausage consumers primarily in Britain and Czechoslovakia. (Source: Cryonics, Sept. 1989, "BSE & You" by Mike Darwin.)

Because the behavior that spreads the disease is not addictive, stopping the disease is simple once people are aware that it exists. Nevertheless, many more people stand to be infected, so long as the population remains apathetic and uninformed.

Recently, the insurance industry has given a lot of attention to AIDS. It is time for actuaries to give some attention to BSE/CJD/kuru now before the disease becomes an epidemic and a full-blown crisis in the media.

Thomas M. Zavist

Using satire may bury point
The November 1990 issue of The Actuary devoted approximately a half page of text to three letters commenting on whether $X = Y$.

The first letter claimed that there is a "basic error of calculus." The second letter at least commented that this could be "tongue in cheek" before wondering whether there was an implication that readers were gullible. The third letter spent substantial time developing the "disproof."

The risk of satire and cleverness is that the point may be lost. Are these authors really concerned that anyone may be misled into believing $1 = -1$? Maybe I am missing their satire. Only an actuarial journal would spend time proving that $1$ does not equal $-1$. I don't even think any actuaries are worried about this.

I consider the proof of $1 = 2$ to be a basic litmus test of mathematics competency. This is simply a puzzle that requires more than superficial knowledge of mathematical principles.

Richard Q. Wendt

Exams should remain only way to become an actuary
My attention was drawn to the FEM and the granting of credit for classroom or seminar attendance by the disappointing letter of Linden N. Cole (September 1990 Actuary), as well as by personal observation. This letter is disappointing since it follows Forrest A. Richen (February 1990 Actuary) in linking the learning method with the examination method, even after the letters of Leslie John Lohmann and Walter P. Henry (May 1990 Actuary) clearly developed the distinction. I don't doubt that some students can learn some subjects

Continued on page 18 column 1
Dear Editor cont'd

most easily by self study or by lecture or, perhaps, some other process under greater or less direction. The main point is that Society membership has always been based on demonstrated ability as shown by uniform examinations graded by disinterested and neutral members rather than the subjective appraisals of instructors who provide courses.

The learning of material from published papers has the virtue of being readily accessible to any student, rather than open only to a few who can afford the time and expense of attending an infrequently offered course at a distant location that happens to fulfill some vague selection criteria. This self study also has a strong parallel to the type of learning that students will be called upon to do in their work careers. It should be made clear to students that it is their responsibility to find the means to understand the topics and not someone else's to spoon-feed them.

It is stated that learning statistics requires working on extended projects under the direction of an experienced teacher, but such projects are typically done over a period of months and by experienced statisticians. There is not that time available to most students nor is there available such an expert staff readily vetted by any group as strict as this Society or likely to be uniformly deemed acceptable to our members.

It should be repeated that we don't bar any education method and even expect the use of other education methods adopted at the initiative of the student. To the end of furthering competing education methods, the detailed topics and viewpoints of the coursework should be disclosed by publication. The definition of the subject matter should not be placed on interpretations of professors at colleges or on the private conversations of tutors at seminars. None of this should require that we relax our standards of examinations.

It is stated that some of our exams can be passed with no working knowledge of the subject. This is a very disingenuous argument by an opponent of the exam, but, after all, it is a type of argument or boast made by many students to their peers during their exam careers and impossible to verify. I must wonder that such a student could bluff his way through any other type of exam as well as or, perhaps, easier.

If any panel or other small group is to exercise its judgment in passing students, how is the membership to evaluate its opinion and, further, how are we to convince others of our strict standards. It wasn't so long ago that the wording of the phrase "proctored exam" was used to aptly distinguish our strict standards from those of competing actuarial groups with exams of a more vague nature.

I am greatly disturbed by instructors who will teach a course in the expectation that they also determine who is to pass that course. The very high passing percentage of the statistics seminar lead me to feel that the teachers merely find it hard to fail someone who has been made familiar with and indoctrinated to their particular viewpoints. This is surely an invitation to a conflict of interest that would not be tolerated in any of the financial fields in which we work.

William S. Wright

Reply from Bob Campbell,
ASA Education General Officer

The Intensive Seminar on Applied Statistical Methods (Course 121) is one aspect of the Flexible Education Methods (FEM) approved by the Society's Board of Governors in 1986. Along with research papers and the Fellowship Admissions Course, the intensive seminar approach represents an attempt to enhance the educational development of aspiring actuaries by applying educational techniques that are particularly appropriate to selected subject matter. In the case of Course 121, the primary educational motivation for adopting the intensive seminar approach was to offer students the opportunity to enhance their knowledge of statistical methods by applying them to actual data sets.

As is the case for all other courses in the syllabus, both the course content and all aspects of the student evaluation process of Course 121 are the responsibility of the Society's Education and Examination Committee. The textbook, class notes, and any other study aids to be used in the course are reviewed by E&E Committee members (and supporting staff) prior to their use in the course. The 1½ hour in-class examination (given on Friday morning of the seminar) and the student project (to which Thursday afternoon and most of Friday are devoted) are reviewed in advance. Preliminary scoring of papers is conducted by several graders, using a common grading outline developed in advance. This is followed by second readings of borderline papers (again by multiple independent graders). The final pass mark is determined by agreement among designated General Officers of the E&E Committee.

All of these procedures are intended to apply the time-tested standards of the Society’s E&E system to the intensive seminar format. In particular, in order to receive credit, students must demonstrate adequate knowledge as measured by evaluation instruments and procedures under the direct control of the Society of Actuaries, through its E&E Committee.

The intensive seminar approach will continue to evolve in response to suggestions from students, faculty, E&E Committee members, and the Society's membership. We welcome suggestions for increasing the value of this approach in the preparation and certification of actuaries.

Puzzles live on

R. Graham Deas, the wonderfully proud father of Daphne Bartlett, died in Folkestone, England, on December 6, 1990, about seven weeks after his daughter officially became our Society President. Graham has been entertaining, intriguing, and beguiling a greatly increasing number of our members, and in some cases, their spouses, relatives, and friends, for more than a decade with his Actu-crossword puzzle. In the past 10 years, the number of solutions to his puzzles submitted to your competition editor has increased almost tenfold. Fortunately, when Graham had his first mild stroke several years ago, many of his regular solvers gave him great satisfaction with their personal thanks, along with many gracious comments. Even though Graham was unable to continue supplying his puzzles since that time, we will be able to publish his Actu-crosswords for a number of years into the future. His puzzles will be identified with his name, in memory and in appreciation of his past efforts.

Charles Groeschell
Competitions Editor

In memoriam

R. Graham Deas. ASA 1952*, FFA
Mitchell Dezube FSA 1954
David Ball Mansur ASA 1932
Donald Kevin Monson ASA 1982
Paul N. Williams ASA 1984
ACTUCROSSWORD

Across
1. Understand divining rod? (4)
3. Sportsmen sinking shots here get awaited pleasure (10)
10. Literary biased sequel to pride (9)
11. Gold derivative for which C.I.A. returns to Biblical city (5)
12. Land set in oblique pattern (7)
13. Abnormal setting of sun due at this stage (6)
15. This ceremonial arrangement sounds in 24 (4)
19. Dead cute and clever, in a way (8)
20. A giant who feels 16 (4)
23. Runs away but not towards the South-East pole (6)
24. Found in cargo of carbon derivatives (7)
26. Puree in current circulation (5)
27. Princess of Ethiopia and Rome, Damascus, etc. (9)
28. French home of filled pastry appointment and improper sin (4,1,5)
29. Put a bet on this river. Easy as ABC (4)

Down
1. Ornamental coverings undone in striptease (10)
2. Nice tax, but not quite right (7)
4. French pronoun, single publicity for Greek epic (5)
5. Terminate existence of about four in position of power (9)
6. Changes certain in The Times (8)
7. Where infants and grafters may be found (7)
8. Pledge with wine (4)
9. Fat not right in the Rockies (5)
14. Transportation for dramatic tutor (5,5)
17. Group end game for early companion (9)
18. Processed bean soup served for appearance (8)
19. Form of spell that is broken (7)
21. Correct result from Hagen tee leading golfers use (7)
22. In this show Olga does a brilliant backbend (5)
24. Regulation, monastic or battle (5)
25. Put back a portion of gin (4)

January's Solution


Send solutions to: Competition Editor, 8620 N. Port Washington Rd (312), Milwaukee, WI 53217
ACTUCROSTIC

A. Cover up; gloss over.
B. Small probability. (2 wds)
C. Inside dope; scoop. (hyph)
D. Ravenous; starving.
E. Peacefulness; quiet. (3 wds)
F. What we call our own mistakes.
G. The past; bygone times.
H. Touch; greatly impress; change residence.
I. Where none of us wants to be caught. (hyph)
J. Astute; sharp as a tack.
K. One of four identical copies.
L. Number at top of integration symbol, eg. (2 wds)
M. Affront, slight.
N. Risky; hair raising. (3 hyph wds)
O. Too much medicine, eg.
P. Standard; benchmark; measuring device.
Q. Not destroyed or lost.
R. What is the crime when a sailor buys a Diehard? (4 wds)
S. Den of iniquity; brothel.
T. From stem to stem; backwards and forwards.
U. Mure elevated; lofty.
V. Flatterer; yes man. (hyph)
W. Communication enclosure rarely seen along the streets these days. (2 wds)
X. Hindu woman's garment.
Y. Demanded; required.
Z. Do carelessly; impmvise; mix. (2 wds)

JANUARY'S SOLUTION: Joshua Fischman, Cutting Edge: "Ninety percent of the time, the cause of high blood pressure is a mystery. But neurosurgeon Jannetta thinks he's found the problem and he's got an operation to fix it. He raises up a looping section of artery. Underneath is a groove in the flesh of the brain. Exactly what he said he would find."
DISCOVER, November, 1990.