

**SOCIETY OF ACTUARIES RESEARCH ACTIVITY:
STRUCTURE AND HIGHLIGHTS**

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I'll begin by noting that several handouts are available to supplement this presentation.

First, as I'll discuss a bit later, there are many ways in which we gather ideas for research activities. One of the ways is by individuals submitting research suggestions on our "Research Suggestion" form which we hand out at meetings and distribute at least once a year with an issue of the *Actuary*. Please feel free to make suggestions.

Of course, we need not only research ideas but volunteers to help provide oversight and management of the activities. I know many of you are involved in various of our activities and we thank you for that - just as the generation and implementation of new ideas are important to the survival of any profession, the support of volunteers is essential to the survival of SOA research activity. If you are not involved and wish to be involved, or are involved and want to be involved more, just complete one of the research volunteer forms and either give it to me or submit it as indicated. And, of course, we have a Research Volunteer Reference Manual, which is intended to be a single source reference to aid research volunteers in fulfilling their responsibilities.

We also maintain a Directory of Actuarial Researchers. As many of you know, we regularly update the list for new names and new information. If you want to be listed, please complete the form and submit as indicated with a current vita or resume. We have started receiving requests to share our list. To best respond to such requests, we have added a question regarding release of information at the end of this update.

A new item is the "Resources from Research" brochure which was developed earlier this year. It includes information about many of the recently completed research activity products and how to obtain them. We plan to distribute a new edition at the annual meeting. We anticipate having two editions each year - one for the Spring and one for the Fall - for distribution at various actuarial meetings.

For a number of years, there has been interest in the SoA conducting research activity related to modeling. This interest has come from several of the research areas. We concluded that a good starting point would be to begin a series of conferences on modeling. The objective of the first conference is to "present issues, raise questions and motivate the writing of papers related to the development and use of models in actuarial and financial work." The conference is dedicated to the memory of Ed Lew, who, as many of you know, was a primary motivator in getting the modeling research underway (and in getting the Actuarial Research Conference and ARCH started). I hope many of you are able to attend the conference.

As many of you know, information about the nature and status of current SOA research activity is in the research or other libraries of Actuaries online. The SOA has now developed a Website on the Internet and that raises the intriguing possibility of somehow creating a single site on the Internet to provide information about as much actuarial research - either in progress or recently completed - as possible. Some of the information may only be as a reference to another Website. The general idea has been forwarded by SOA President Sam Gutterman to those involved in developing the SOA Website. The general idea is to include information about actuarial research sponsored by any actuarial organizations or conducted by any individual researchers (academics, others) throughout the world. There are existing sources that approximate such information. For example, in print is the International Actuarial Association Bulletin. But that publication requires a long lead time and therefore is quickly out-of-date. Any existing Website could be incorporated by reference.

For "structure," I'll just make a few comments on organization and process so that most of the remaining time can be devoted to highlights of current activity.

The new SoA mission and vision statement approved by the Board in May is:

"The Society of Actuaries is an educational, research, and professional organization dedicated to serving the public and Society members. Its mission is to advance actuarial knowledge and to enhance the ability of actuaries to provide expert advice and relevant solutions for financial, business, and societal problems involving uncertain future

events. The vision of the Society of Actuaries is for actuaries to be recognized as the leading professionals in the modeling and management of financial risk and contingent events".

As I understand it, additional explanatory commentary is to be included with any publication of the mission/vision statement. The statement included regarding research is a concise description of the SoA research mission:

"The SOA conducts research to develop studies of historical experience and techniques for projections into the future, to analyze the actuarial aspects of public policy issues, and to provide the foundation for further expansion of the profession."

This statement is consistent with the research general objective listed in the 1996 Yearbook:

"Research. Facilitate the conduct of theoretical and practical research."

This is why we do research. A key challenge is linking the theoretical foundation with practical application.

Key to the SoA governance organization is practice area organization, which is why there are four practice area research committees and a general knowledge extension research committee.

With respect to SoA Research Department Staff support of the research activities, two things are

important to note. First, the nature of staff support is administrative, managerial and actuarial, and the actuarial support is in the form of peer review and guidance. The primary responsibility of the research department staff is to facilitate and manage research, not to conduct research. Second, there are a variety of types of activity supported: experience studies, research projects (which are essentially new initiatives, some of which may become ongoing experience studies), and special activities such as the Ph.D. Grants program and identification and articulation of actuarial principles.

A key component in the research project life cycle process is the Project Oversight Group or POG, which, as many of you know, is a group of three to five individuals who have interest, experience and expertise related to a specific research project and are asked to provide definition, peer review and guidance for the project. Tom Edwalds, the staff actuary who supports the research activities for the Health Benefit Systems and the Retirement Systems practice areas has pointed out that there are essentially four phases to the process: **definition** - from ideas to a description; **organizing** - from budget and timetable through selection of researchers; **execution** - management and management reporting, and **distribution**. As you might guess, in some respects the most difficult phases seem to be **definition** and **distribution**.

Now, I'd like to mention a bit about the scope of the SoA research activity.

We often talk of people, ideas and funds as the three components of our research effort - and our goal is to get the optimal combination of the three. The following chart quantifies the three

components for all research areas combined.

Scope of Research Activity:

	Total
People/Roles	400/430
Activities	120
SoA Research Funds Committed* (thru 95/96) and Budget (96/97) for Activities Not Yet Completed (including Experience Studies)	\$1,900,000
Section funds Committed* thru 95/96 for Activities Not Yet Completed (including Experience Studies)	\$300,000

*In general, amounts contingent on cost sharing

The difference between people and roles is that some individuals are involved in more than one research activity.

What might be surprising is the number of people involved - this reflects the expansion of research activities over the last decade, and indicates a significant closing of the gap between the number of people involved in each of the two primary components of the SoA mission: Education and Research.

Activities include what we refer to as projects, which are essentially new initiatives, ongoing experience studies and special activities managed through the SoA Research Department - such

as principles articulation and Ph.D. grants. The number of different activities presents a significant management challenge.

The magnitude of the SoA research funds committed through 1995/96 and budgeted for 1996/97 and the section funds committed to researchers for current research activities reflects a significant allocation of financial resources to research.

A few comments about research ideas. The ongoing flow of research ideas is essential to the success of any research program. For the SoA research effort, ideas come from a number of sources. Many of the ideas for current research activities have come from sections. Sections have been an important source of all three of the key components of research: people, ideas and funds. We also want to encourage and facilitate the generation of research ideas from individual members, committees, and external industry, government and academic groups.

The practice advancement committees have also become an important source of ideas, as well as the group that prioritizes all the activities for a given practice area. This annual actuarial research conference has been an important forum for presentation of the theoretical research and also a source of ideas for theoretical research that the SoA might sponsor. We have recently tried a more formalized approach to the generation and development of research ideas by funding definitional research efforts. Finally, the Actuarial Education and Research Fund has been, and continues to be, an important source of research ideas.

An important distinction that has been made is that of "supply driven" research - that is, research that is driven by what actuarial researchers (e.g., academics) are currently working on, and "demand driven" - that is, research that is driven by what some actuarial group (e.g., a practice area or a special interest section) thinks is important to research. The former tends to focus on advancing actuarial science, while the latter tends to focus on advancing current actuarial practice. Both are important - and, as noted earlier, a key challenge is connecting advancements in actuarial science with advancements in actuarial practice. The CKER grants program, although perhaps primarily "supply driven" is also demand driven, because the proposals to be funded are selected, in part, on the basis of their importance to current and future actuarial practice.

The remainder of this presentation highlights SoA research activity, which is organized in several general areas.

Knowledge Extension Research highlights include: eight new research grants to individual researchers on topics such as: Interaction Between Asset Liability Management and Risk Theory, Is Social Security a Regressive System?, and Bounding and Asymptotic Behavior of Ruin Probabilities in Collective Risk Theory, and the publication of the Public Employee Retirement Systems and Public Financial Guarantee Programs monographs, which will be two of the first four monographs in the new SoA monograph series.

Finance Research highlights include active calls for papers on Currency Risk, 100-Year Term

Structure of Interest Rates and Expense Analysis, and a study of the Use of Derivatives by Insurance Companies.

Health Benefit Systems highlights include the Risk Adjuster monograph, which is another of the "first four" of the SoA monograph series, an emphasis on managed care research, including a white paper and symposium, and the report on the study of large medical claims, which will likely be part of the SoA monograph series.

The Life Insurance Research highlights include: the Valuation of Interest-Sensitive Financial Instruments monograph, which is one of the "first four" (and if you've been paying careful attention you know I've now mentioned all four plus a fifth), working with a Mexican actuarial organization to develop Mexican actuarial tables, assisting regulators with the development of an Individual Annuitant Mortality Valuation Table and Standard Expense Table for Sales Illustrations, and a study of the Persistency of Annuity Products, the third in a series of such studies conducted jointly with LIMRA. (The other two are a study of Single Premium Deferred Annuity persistency and a study of Universal Life persistency.)

Highlights of Retirement Systems research activity include: a study of the feasibility of creating a macrodemographic model, creation of a mortality table from the 1990-94 Retirement Plans Experience Study (the so-called GATT- General Agreement in Trade and Tariffs - mortality table), a turnover and retirement rates study, a Canadian pensioner mortality study, and a study of asset valuation methods.

Experience Studies research activity has focused on revitalizing the SoA's ongoing experience studies process, including the creation of guidelines for the identification, management and production and distribution of experience studies. A survey of the value of continuing the various experience studies has also been conducted. Key studies near completion include: 1988/1989 individual life mortality, asset risk of private placements 1986-92 and Group Life 1985-89.

The highlights of the activity of the SoA Foundation include: a multi-author textbook on financial economic theory, a Social Security educational brochure, tutoring program grants to encourage student tutoring programs focused on mathematics and to involve actuaries as tutors, and a new research grants competition, which is just being developed.

Highlights of other research activity include identification and articulation of principles in various areas of actuarial science and practice, and the Ph.D. Grants program.

Policy issues currently being addressed include: charging for research products, creation and distribution of public use databases and coordination with the publication of the new *North American Actuarial Journal*, the new SoA Monograph Series and the *TSA Reports*.

Finally, a research activity that relates to all research areas is modeling, and, as noted above, the first conference in the series is scheduled for December 16-17, 1996 at Georgia State University.

Information about many of the recently completed research activity products and how to obtain them is included in the "Resources from Research" brochure available from the SoA Research Department (847-706-3573). Information about SoA research activity is also included in the Research library and other libraries of Actuaries Online. The new SoA home page on the Internet (<http://www.soa.org>) also includes information regarding SoA research activity. As noted above, the SoA is contemplating initiating the development of a single source on the Internet of information about world-wide actuarial research in progress (or recently completed). Your suggestions in that regard are welcome and should be directed to Jim Weiss (847-706-3530; 71333,3462@compuserve.com) or Steve Strommen (414-219-1944; 74017,2177@compuserve.com).

