SOCIETY OF ACTUARIES

The Actuary

JUNE/JULY 2014 VOLUME 11 ISSUE 3

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Knowing what you want can open doors.

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The benefits of working in public service

THE FRONTIER OF SURVIVAL

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June/July ’14

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June/July 2014
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DEPARTMENTS

Editorial

THE ACTUARIAL PROFESSION: MANY ROADS CAN LEAD TO ROME

BY LLOYD SPENCER

"If a man empties his purse into his head, no man can take it from him. An investment in knowledge pays the best interest."
—BENJAMIN FRANKLIN

My oldest daughter graduated in May with a bachelor's degree in elementary education. As we prepared to celebrate this achievement, I asked her if she thought the investment she'd made in a post-secondary education would yield a satisfying career. She replied, "I don't know. But I can't imagine what I'd be facing if I hadn't made the choice to attend college."

A recent Pew Research Center report evaluated the rising cost of ***not*** going to college.[1] In a nationally representative survey of adults, supplemented by Pew Research Center analysis of economic data from the U.S. Census Bureau, researchers found that "On virtually every measure of economic well-being and career attainment … young college graduates are outperforming their peers with less education." This is especially true for millennials (those born in the United States after 1980), which the report refers to as "the best-educated generation in U.S. history," with 34 percent holding at least a bachelor's degree and 26 percent holding a high school diploma. Among millennials ages 25 to 32, those with at least a four-year college degree enjoy median annual earnings 62.5 percent higher than those with a high school diploma.

One of the strengths of the actuarial profession, in my view, is diversity of educational experience enjoyed by those who have sought membership in its ranks.

This assessment makes a compelling argument for the pursuit of a college degree—without considering either the financial outlay necessary to obtain a degree or the future economic value of earnings that may result from holding a college degree.

Regarding the former consideration, research conducted through the Assets and Education Initiative at the University of Kansas suggests that four-year college graduates with outstanding college loan debt have "about 40 percent less equity in their homes" and "about 52 percent less in retirement savings" when compared to peers with no debt.[2] William Elliott, the initiative's director, notes that these students are "better off than if they didn't go to college, but they're not doing nearly as well as they could be, and as their peers are doing, if they have no debt."

These statistics convey a stark financial reality faced by many recent graduates of the traditional post-secondary education cycle in the United States.

In many parts of the world, apprenticeships continue to provide a financially efficient point of entry for employment in a number of trades and professions. Have you ever considered that the actuarial profession provides such a case in point? In many jurisdictions around the world, actuaries are considered to work in a self-regulated profession, built on a foundation that combines apprentice-like supervised work experience and a specialized, largely self-study education validated by examination. While components of the actuarial education are predicated on completion of collegiate coursework (for the Society of Actuaries, those courses are "Validated by Educational

Experience”), there is no actuarial professional requirement that a candidate hold a bachelor’s degree.

Actuaries enjoy relatively low barriers of entry to initial full-time employment. Employers routinely hire actuarial interns who have completed one actuarial exam, and often make offers of full-time employment to those with nearing attainment of a college degree with two actuarial exams completed. In addition, many individuals find the actuarial profession after having pursued careers in a variety of other fields. This suggests to me that there is some degree of independence between the collegiate course of study one may have pursued and one’s potential for success as an actuarial professional.

I conducted a highly non-scientific survey of some of the FSAs in my office, asking if they would be willing to recommend someone to our employer for full-time actuarial employment—an individual who meets our employer’s hiring criteria—yet doesn’t have a college degree. Four of five indicated they would, provided the candidate had a reasonable backstory to justify the candidate’s lack of a collegiate degree.

Where does this leave us? Should actuarial employers consider recruiting high school students directly into the profession? This seems extreme. However, one of the strengths of the actuarial profession, in my view, is diversity of educational experience enjoyed by those who have sought membership in its ranks. Holding a bachelor’s or master’s degree—while a significant educational achievement—is not a guarantee of future career or professional success, actuarial or otherwise. Nor is the lack of a degree necessarily an indicator of future career disappointment. Attaining professional success is a distinctly personal achievement.

Our actuarial colleagues in the United Kingdom recently introduced a “Certified Actuarial Analyst” (CAA) designation through the Institute and Faculty of Actuaries (IFoA). According to Derek Cribb, CEO of the IFoA, this new type of actuarial designation is intended to allow employers to professionalize those individuals who compose a “growing pool of technical, analytical and actuarial support roles.”[3] According to the IFoA, the pool of candidates for the CAA designation would be drawn from current para-actuarial employees of actuarial organizations, as well as those individuals with an aptitude for actuarial work who have dropped or never started collegiate studies. Perhaps it is time for the SOA to consider a similar approach, one that has the potential to attract qualified students to the profession regardless of their educational background. A

Lloyd M. Spencer

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END NOTES

1 Pew Research Center, February 2014, “The Rising Cost of Not Going to College” (*www.pewsocialtrends.org/2014/02/11/the-rising-cost-of-not-going-to-college/*)

2 National Public Radio, April 11, 2014, “Paying Off Student Loans Puts a Dent in Wallets, and the Economy” (*www.npr.org/templates/transcrip.php?storyId=301439981*).

3 “IFoA’s Certified Actuarial Analyst Trailblazing Around the World,” March 5, 2014 (*www.actuaries.org.uk/news/press-releases/articles/ifoa%E2%80%99s-certified-actuarial-analyst-trailblazing-around-world*).

Letter From The President

MY THOUGHTS ON CONSOLIDATION OF THE ACTUARIAL PROFESSION

BY MARK J. FREEDMAN

DURING MY VISITS to actuarial clubs, employers and Society of Actuaries (SOA) events such as the recent Life and Annuity Symposium, I typically focus my remarks on explaining key aspects of the SOA's strategic direction. Members often ask me about my views on consolidation of the profession or, more specifically, of the U.S.-based actuarial organizations. In this letter, I will discuss the SOA's strategic plan and the topic of consolidation, since they are interrelated, as well as practical implications.

STRATEGIC PLAN

The SOA has an excellent strategic plan and we are focused on it. We are the largest professional society serving the global actuarial profession. Of the world's 60,000 or so actuaries, almost 25,000 are members of the SOA. We are committed to the betterment of the global actuarial profession and to serving the public. Our strategic plan provides the framework to do this by identifying critical areas of focus and we concentrate our attention (and resources) in these areas.

The SOA's strategic plan calls for us to be a premier global educator of actuaries, covering all actuarial disciplines to our candidates and students wherever they may be in the world. This part of the plan led us in 2012 to launch the General (or Property/Casualty) Insurance specialty track. This track is our sixth specialty track and allows us to join virtually all other actuarial professional societies in the world in offering education and credentials covering all actuarial disciplines. Doing this will, over time, help the profession provide more actuaries trained in general insurance throughout the world, meeting the needs of employers, regulators and the public for this vital discipline.

In addition, the General Insurance track will give SOA members and candidates more flexibility in their careers. When I first started my career, many candidates wanted to become pension actuaries and perform valuations of defined-benefit pension plans. While the pension specialty remains a very important part of the profession, many pension actuaries have successfully shifted their areas of focus as the demand for defined benefit plans has significantly declined. It is quite possible that future property-casualty insurance company consolidation in North America will ultimately impact property-casualty actuaries in a similar manner. If that ever occurs, property-casualty actuaries would be able to change their career paths much more easily in an organization that has several tracks/options available to them.

Our strategic plan also calls for us to become stronger with regard to developing and offering research that informs public policy and policymakers. Our board and our members saw an important opportunity in this area for the actuarial profession. There are major public issues in the United States (e.g., health care reform, public pension funding, catastrophe risk and climate change) where actuaries and actuarial research can offer real value to policymakers and the public.

As actuaries and as a profession, we have a duty to offer our insights in these areas; and as a research-focused organization, the SOA has a duty as well. Our recent SOA Member and Candidate Survey showed that 80 percent of our members support public policy research by actuaries and the SOA. While we have been and remain interested in collaborating with other organizations, we have to understand in practice this does not always work. We have the resources and ability to offer independent, objective and quantitative research, in addition to these collaborative efforts, and we look forward to continued success in this initiative.

WHY CONSOLIDATION MAKES SENSE

I strongly believe the U.S.-based profession would be better served and represented by a consolidated organization representing all practice areas and covering all aspects of the profession's activities, from education to research to public policy and professionalism. Having five U.S.-based organizations and five strategic plans is ridiculous for a small profession.

Please note that this is my personal view. The SOA board of directors has not taken an official position on the matter. However, my statement is not new and it is not unique. Since 1967, I count at least 16 SOA presidents who have recommended some form of consolidation of the U.S.-based organizations in their presidential addresses.

The most important advantage of consolidation is that we could develop a unified strategy applicable to the entire U.S.-based profession, calling on the resources and talents of actuaries across the profession. On a related point, it would give us a way, through a common governing structure for our professional bodies, to address complex and difficult issues as one body, rather than using our energy to resolve disagreements that inevitably arise from those issues. This would make us akin to virtually all of the other actuarial organizations in the world today and would allow us to collectively address all of the same issues with one voice.

Second, the cost of coordination among multiple organizations is extremely high. We spend an inordinate amount of leadership, staff and organizational energy and resources, just to try to coordinate among ourselves. Does the U.S. profession need five boards of more than 100 leaders in total? I am spending on average at least 30 hours a week serving as your president this year. I spend more than 50 percent of this time dealing with coordinating those complex and difficult issues I mentioned earlier as they relate to inter-organizational politics. My predecessors as president uniformly tell me they did the same. I do not think this makes sense at a time when our profession faces so many challenges and has so many great opportunities we could pursue. I would like to spend 100 percent of my time helping to advance the profession.

Third, the public would better understand who we are. Right now, the public and even many of our members do not recognize the differences among the SOA, the Casualty Actuarial Society (CAS), and the American Academy of Actuaries (Academy). They think we are all the same and I wish we were. I would rather they understand the value of the actuarial profession in their everyday lives—not the role of any particular actuarial organization.

PRACTICAL IMPLICATIONS

No matter how great an idea I think consolidation is, there are practical implications I cannot ignore. Some have suggested to me that the best way to get to consolidation is for all of our organizations to take a step back from some of the initiatives underway that might duplicate activities of other organizations. I do not agree.

From the SOA's standpoint, if we go down this route for the short term, it's true that we all might feel better about some things and we might avoid those occasional toe-stubs. But what it would actually mean in the long term is that we would give up on some of the most important initiatives we're doing to serve our profession. That would mean no progress on our public policy research efforts; no progress with the public to explain this research and its implications; and, of course, no progress delivering the full actuarial curriculum to candidates and future members I discussed earlier.

Mark J. Freedman

BOTTOM LINE

Clearly, despite how persuasive I might think I am, I have not seen that the other U.S.-based organizations share my views on the benefits of consolidation. While I intend to continue communicating with them my thoughts about consolidation, I respect their views and their sense of their own best future direction.

Consolidation is a tactic to achieve a plan and not a strategic end itself. While I think it would be easier to achieve the good ends we seek on behalf of the profession with consolidation, we can also do it without consolidation; and the SOA has built a strategic plan to do that. To that end, the SOA will remain focused on its mission and vision to realize a prosperous future for all actuaries. A

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in the public interest growing by serving

For some, public service has proven to be an opportunity to grow both professionally and personally, often in unexpected ways. By Tia Goss Sawhney

For the past four years, I have been a "public service actuary." I am the director of data, analytics and research for the Illinois Department of Health Care and Family Services, better known as Illinois Medicaid. Inside and outside the agency I am often described simply as "the Medicaid data person." Among other things, I am responsible for keeping the largest enterprise data warehouse in the state of Illinois up and running, securing the privacy of health data within, and leveraging the data for the operations and management of the Medicaid program and the benefit of the state. Sometimes we are working with data that has never been previously examined. Although I am highly qualified for my work, I am a political employee whose continued employment is at the discretion of the agency director and the governor. That's the nature of positions at my level.

That said, my service is not to the governor; it is to the public, specifically 3 million of the state's poorest, sickest and most vulnerable residents who are enrolled in Medicaid and to the state's current and future taxpayers. That is a nearly sacred responsibility that I think about every single day. It's a responsibility that influences my professional decisions, big and small. My responsibility, however, is not financially rewarding. I work long hours and earn a fraction of what I can earn in a traditional actuarial role. Irrespective of how well the agency, the team or I do, there are no bonuses. And every year the income differential between government and private market jobs grows as there have not been even cost-of-living raises at my level for nearly a decade.

> i have come to appreciate the value of having diverse perspectives and stakeholders at the table and "bought into" decisions … the decisions are better and more likely to persist.

Yet, this article is about neither responsible service nor sacrifice. It is about what I have found to be the extraordinary rewards of public service. I challenge those who want to believe that work in the public sector at below-market pay is all about sacrifice. For me, public service has proven to be an opportunity to grow both professionally and personally, often in unexpected ways. I am a better actuary and better person as a result of these four years.

Here are some of the rewards.

- **The joy of working with a team of people like no other.** I work with a fantastic, multidimensional team of skilled, passionate people. Surprised to hear that in the context of state employment? I mean it. True to its reputation, the state harbors some employees who work little and contribute less. They are best ignored. In contrast, there are many people in government who are every bit as good and often more passionate than their peers in private industry. Furthermore, cross-functional team work is an imperative. While my work in private industry would likely involve working mostly with people with well-developed analytic skills and often common perspectives, at the agency I work with and learn from people with a spectrum of skills and perspectives.

- **Multidimensional work.** Not only do I get to work with people who are not data or analytic people, I also have substantial nonanalytic responsibilities—responsibilities not traditionally associated with actuaries. Sometimes they are rather ad hoc responsibilities, such as the two consecutive days last summer when we had unannounced protests and I was the senior-most agency representative available to talk with and calm the protesters. This winter I negotiated legislative changes with a group of advocacy groups, including the American Civil Liberties Union. I routinely respond to inquiries from the press and legislators, work closely with our Office of the Inspector General to detect and report potential fraud, manage our relationships with academic researchers and take a lead role in the management of health care privacy (compliance with the 1996 federal Health Insurance Portability and Accountability Act). I am also a strong internal advocate for assorted public health issues. And, most gratifyingly, I am a full participant in our executive-level Medical Policy Group—the group that works through our agency's biggest challenges. Boredom is not a possibility.

- **An inside perspective to government.** Sometimes I read policy reports written by policy groups or academics and simply shake my head. I understand when the public and the press don't understand the realities of government, but these are self-proclaimed policy "experts." When I check their resumes, however, I find they don't have government experience. Whereas I truly value the perspectives, contributions and leadership of people outside of government, I think it is really challenging for someone to credibly claim to be a public policy *expert* without experience within government. Even then, experience with one part of government does not necessarily port to another.

- **Incredible learning and skill development.** As with any position, I have developed new "hard" skills. For example, I had to learn the programming language SQL quickly in order to be able to directly access the vast data on our enterprise data warehouse. Today I teach it to others. However, it's my newly acquired "soft" skills and lessons learned acquiring them that I've found to be most valuable. Here are some.

Data can illuminate, not decide, policy. There is never enough data, it is never clean enough, it is retrospective and not prospective, and, often most importantly, data cannot capture important considerations such as justice, equity and political feasibility. That said, a decision made with reference to data is almost always better than a decision made without data. "Good enough" data can change the entire argument. While the person who can make the data tell a story has incredible value to the team, the data person is only part of the team and the data story is only part of the argument.

Implementation really is complicated. Passing new legislation is a visible and politically complicated process. The political complications, however, often pale in comparison to the more hidden complications of implementation in a complex system. The implementation of President Obama's Affordable Care Act (ACA) is a national example of this principle. The implementation hiccups were not lack of intent or ineptness, but rather the very real difficulty of change in a complex system. No one has any idea how hard implementation is until they are on the inside.

The group process works. Probably like you, I have always been skeptical of the value of meetings, especially large meetings. Yet I have come to appreciate the value of having diverse perspectives and stakeholders at the table and "bought into" decisions. The decisions are better and more likely to persist. I've learned it is better to know of complications in advance and they are only unearthed by talking. Likewise, given discussion, initial resistance to change can be replaced by true partnership.

The barbarian at the gate has value. Life in government is more difficult due to reporters, protesters, lobbyists, people that file frequent freedom of information requests, political nemeses and assorted others. They can be a pain. They can be detrimental to getting work done. At the same time, I've come to learn their presence provides a valuable perspective and accountability I would otherwise often be missing. The team and I do better because of them.

Leadership is in action not titles. I've found that government is surprisingly nonhierarchical and, as such, quite different from the corporate world. In my experience in state government, no one has the authority to order anything done, let alone quickly. There are various checks and balances that distribute power laterally and vertically. Vertically even includes downwardly! A subordinate can stop a process with little or no consequence. Irrespective of one's title, effecting change requires initiative, persuasion, personality, alliance building, long-term vision and persistence: leadership skills. A title cannot compensate lack of such skills.

Change, even big change, is possible. We are so often told that nothing changes, especially in government, and that bureaucrats primarily maintain the status quo. Even internal to government we sometimes fall prey to that thinking. That is simply not the case. Big change is possible, and bureaucrats such as myself and the people I work with make change happen within complex public systems. We are living big change today with respect to the implementation of ACA and, specifically within Illinois Medicaid, ACA expansion and the transition from highly fragmented fee-for-service care to managed care.

Although the line between professional and personal is often quite fuzzy, the rewards I have discussed thus far have been professional. The next three are much more personal and involve nearly universal human goals of

serving the public

AS AN ACTUARY, do you serve the public in a government policy role or in a non-traditional position doing socially important work? We want to learn more. Write to us at ***theactuary@soa.org.***

uniqueness, gratification and freedom. While I am not claiming that public service is the only path to find these rewards, I am claiming it is *a path*, at least for me.

- **The satisfaction of making a unique contribution.** I am one of only four actuaries employed by the state of Illinois and the only health insurance actuary. The other three actuaries are with the Department of Insurance. Through me, the state and our agency has an actuarial perspective they otherwise would not have. That's a unique contribution. What's really unique, however, is not my credentials; it's the approach I bring to the agency. While I am not responsible for traditional actuarial work (we have outside actuarial consultants), the cornerstone themes of high-quality actuarial work have become mantras within my team and are slowly changing work expectations throughout the agency: whenever possible, substitute facts for impressions, clearly state all assumptions, forthrightly describe analysis limitations, carefully label and document, communicate professionally and in the detail appropriate to our multiple audiences, and review all work before release. This contribution to organizational culture will live on after I am gone.

- **The gratification of doing socially important work.** Illinois Medicaid takes care of 3 million people, people who otherwise would not be able to afford health care. We do so in the context of history of political corruption that continues to cast suspicion, a highly strained state budget, partisan politics and a disgruntled voting public. As a result, wherever I go, my work inspires interest. And while it sometimes inspires the throwing of political bombs, it much more often initiates a quality discussion about difficult policy and societal issues. People across the political spectrum want a well-functioning and managed government. Very often people sincerely thank me for my work. My kids are proud to explain mom's work to their school friends. Simply put, I have found far more public reward with my current work than in my previous actuarial roles.

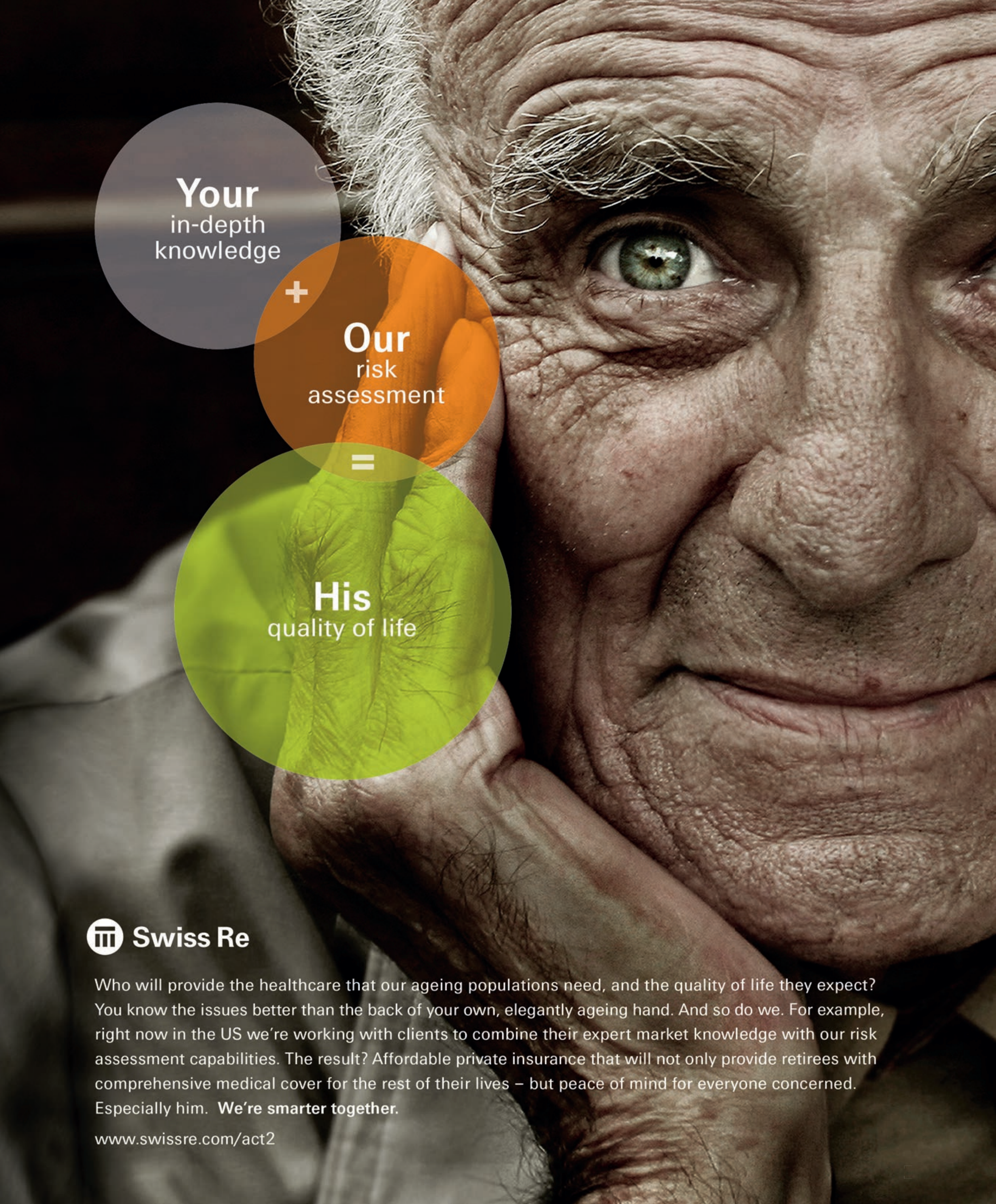
- **The freedom to take a stand.** As already discussed, I earn less than I would in other positions and commensurately have a lifestyle that requires less. I can and eventually will earn much more on the outside, especially with the skills and learning I have acquired. Furthermore, should I seek new work, private market employers know that government appointees come and go and will not hold a relatively short employment term against me. Therefore, when facing a decision to stand for what I feel is right, I can do so without much fear of the income impact of a temporary loss of employment. Because I don't fear losing my job, I have the freedom to stand by principled positions and I can do so in a quietly confident way that generally avoids power plays and showdowns.

As the actuarial profession contemplates ways for actuaries to have more influence with respect to public policy, I will state the obvious: One way for actuaries to be more involved in public policy is for more actuaries to be employed in public service. I hope actuaries reading this article will realize that a public service role might be a growth opportunity for them. ◼

as the actuarial profession contemplates ways for actuaries to have more influence with respect to public policy, i will state the obvious: one way for actuaries to be more involved in public policy is for more actuaries to be employed in public service.

Tia Goss Sawhney, FSA, MAAA, is director of Data, Analytics and Research at the Illinois Department of Healthcare and Family Services. She can be reached at *tia.sawhney@illinois.gov.*

Note: *The opinions expressed here are solely the author's. In addition to being an FSA and MAAA, the author has a doctorate in public health.*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THE LIVING TO 100 SYMPOSIUM EXPLORES LIVING LONGER, SEEKS OUT NEW PERSPECTIVES AND IDEAS, AND BOLDLY PROPOSES NEW PATHS FOR RESEARCH. BY RONORA STRYKER

Every three years, the Society of Actuaries (SOA) issues a call for papers on advanced-age mortality and the implications of a growing aging population. Authors of the accepted papers are invited to present them at the Living to 100 Symposium. Topic areas are usually broad to attract a diverse audience. A sample of the topics from the 2014 symposium held in January range from the technical, such as mortality trends and projections of older age, to the practical, including strategies for managing long-term care needs in retirement.

Leaders from many disciplines are also invited to share their perspectives on the aging process and its implications. When I began working on this project, I did not see the "big picture" and why the other disciplines were involved. I knew the research was providing a benefit but I was not sure it outweighed its cost. I did not have the same passion as the numerous volunteers involved with this project.

My view and outlook quickly changed as I realized that the actuarial profession impacts lives! This message sometimes gets lost in day-to-day actuarial duties, especially given company shareholder needs and other stakeholder demands. As a baby boomer, I am one of the "faces" of the graying population. I think about retirement and financial security, and actuaries play an important role in my financial future and quality of life.

Once I made this connection, I really began to understand what this important research effort was all about. Living to 100 tries to capture the latest thinking on aging. By including other disciplines, it gives actuaries a well-rounded perspective, helping to expand and enhance actuarial practice so that we can better identify the risks associated with longevity, improve our forecasts of what the future may hold for the rate of mortality at older ages and the number of older-age individuals, and provide solutions to complex issues around health care, retirement and supporting the elderly.

The 2014 symposium featured more "rock stars" than ever before. Rock star is the term used by the planning committee for the elite leaders in the other disciplines who attend the event. This article will summarize some of the takeaways from the presentations of four of the rock stars in attendance:

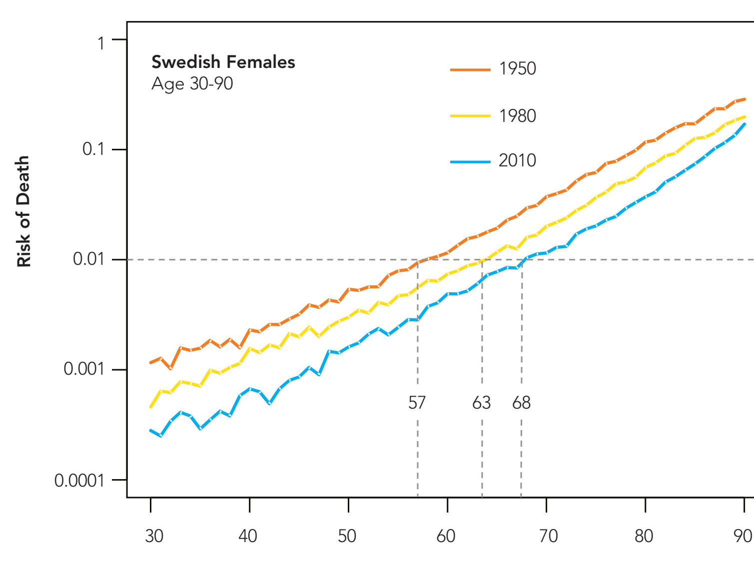
1. James Vaupel, Ph.D., a member of the U.S. National Academy of Sciences and executive and founding director of the Max Planck Institute for Demographic Research
2. Dr. Nir Barzilai, professor of medicine and genetics and director of the Institute for Aging Research at Albert Einstein College of Medicine.
3. Aubrey de Grey, Ph.D., biomedical gerontologist and chief science officer of SENS Research Foundation, which is dedicated to combating the aging process
4. Dr. Anthony Atala, director of Wake Forest Institute for Regenerative Medicine

THE FRONTIER OF SURVIVAL IS ADVANCING

Vaupel began his presentation by identifying three areas of thought regarding human life span.

1. Everyone is born with a maximum life span and nothing can be done about the natural mortality associated with biological aging.
2. Everyone born has a maximum length of life but the natural limit can be evaded and individuals can live longer than the natural limit.
3. The frontier of survival is advancing because senescence (the increase in mortality with age) is being postponed, as shown in Figures 1 and 2.

Figure 1: Postponement of Senescence



Source: Calculations based on Human Mortality Database by Elisabetta Barbi and Giancarlo Camarda (unpublished).

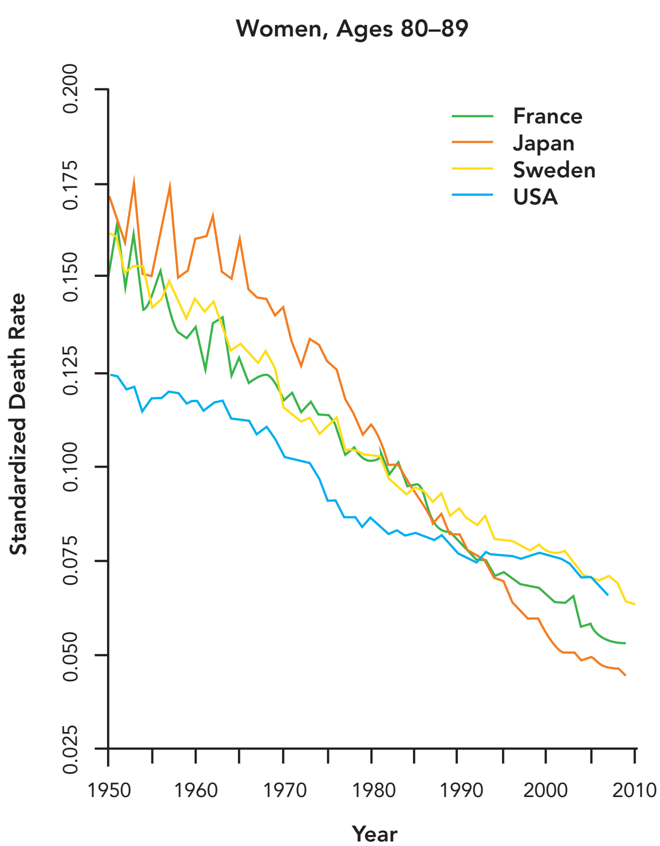
Figure 2: Current Age and Age of Equivalent Mortality 50 Years Ago

EQUIVALENT AGE 50 YEARS AGO								
AGE	FEMALE				MALE			
	France	Sweden	USA	Japan	France	Sweden	USA	Japan
50	42	40	44	23	44	43	44	39
60	49	52	53	43	51	53	51	50
70	59	62	63	53	59	62	60	57
80	71	72	74	67	71	73	73	70
90	83	85	85	79	84	87	85	81

HISTORICAL U.S. OLDER-AGE MORTALITY DECLINE IS UNCOMMON

While the above figure shows that the postponement of senescence happened in the United States, Vaupel pointed out that the mortality decline in the United States at the older ages compared to other countries has been very different. As the figure shows below, it was stagnant for a period and in recent years is similar to the rest of the other countries. This pattern is also true of U.S. octogenarian male mortality and nonagenarian mortality.

Figure 3: Octogenarian Mortality



Source: Calculations based on Human Mortality Database by Roland Rau (unpublished)

LINEAR EXTRAPOLATION IS THE BEST MORTALITY FORECASTING METHOD

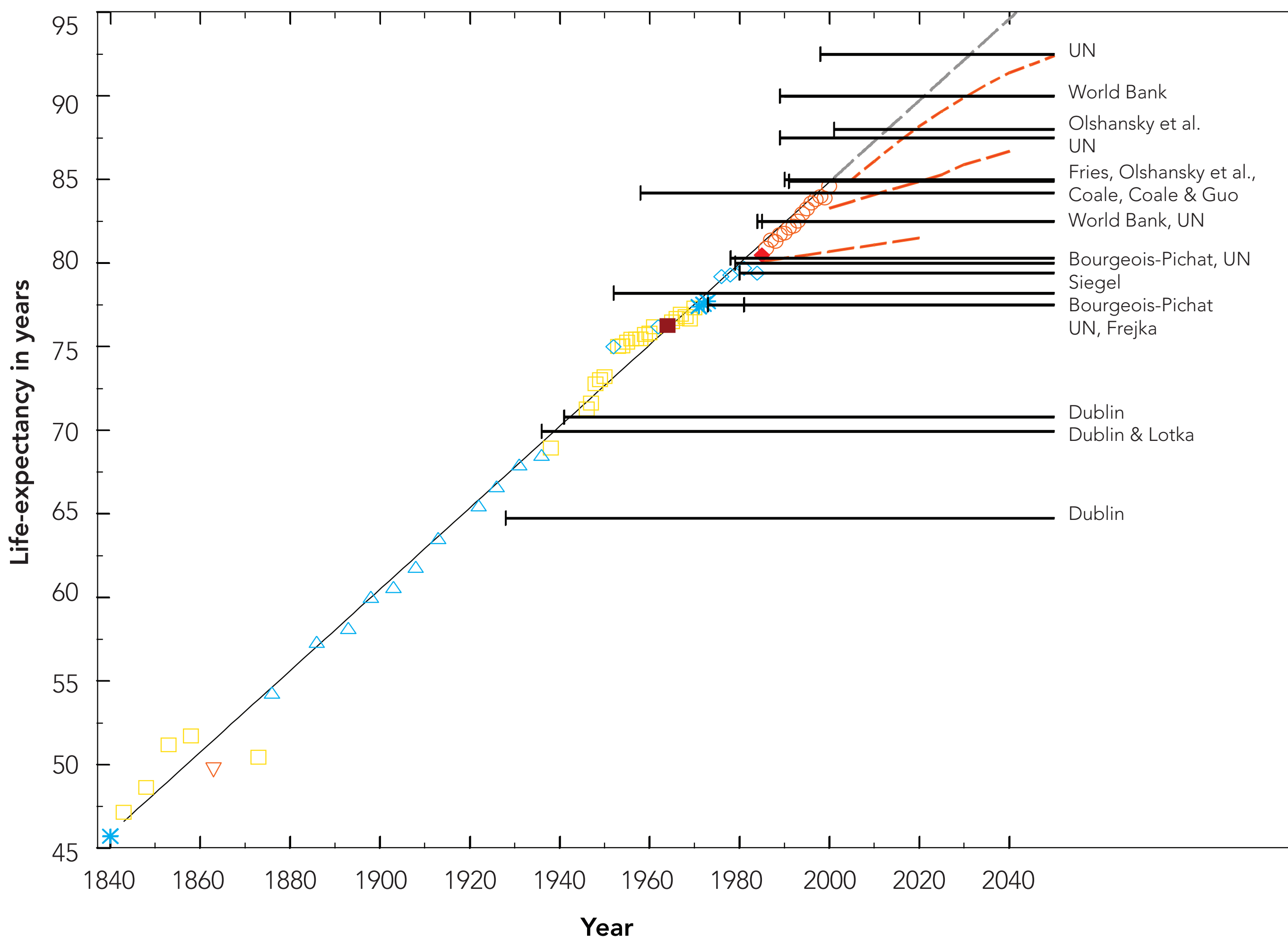
Yes, you read that correctly. Vaupel argues that actuaries and others should be using linear extrapolation to forecast future life expectancy. He explains that since the 1800s there has been a revolution in life expectancy with it *linearly* increasing by three months per year (2.5 years per decade). For rates of improvement in life expectancy at age 65, it is about two months per year. In Figure 4 on page 20, Vaupel shows that mortality forecasts based on expert judgment have been less accurate than linear extrapolation.

The black line is the linear rise in life expectancy since 1840 and the horizontal lines are expert judgments about the ultimate limit to human life. If one went back in time and just used linear extrapolation, this method produced better results. This figure supports Vaupel's argument that the best way to forecast life expectancy is to extrapolate the long-term historical trend, then adjust the result by asking why it might be faster or slower.

Vaupel pointed out the first name in Fgure 4, Louis Dublin. Dublin, an actuary, made a forecast in the 1920s that no country in the world will ever have a life expectancy greater than 65. He was incorrect as New Zealand already had a life expectancy at birth of age 65. Dublin did not have the data for New Zealand and may have made a different forecast if he had. Vaupel used this example to reinforce his view on linear extrapolation and why it is the best method: The data supports it. Vaupel explained:

> Mortality forecasts, based on expert judgment, have been less accurate than extrapolation. In my studies of this field, what I've learned is never trust experts unless they have

Figure 4: Historical Mortality Forecasts



some numbers. You have to be extremely careful about expert opinion because experts know a lot about the past, but experts know very little about the future and experts over and over again have demonstrated a colossal failure of the imagination to try to foresee what the future might bring, so I'm a firm believer in extrapolation.

Of course, many are skeptical of this method, asserting that the future will be very different from the past. Vaupel's rebuttal is that the future has always been different from the past. In the past, individuals would not have foreseen advances that occurred such as antibiotics or the breakthrough in managing cardiovascular disease. But since 1840, future progress has been different from past progress and this has been taken into account in the linear rise in life expectancy. Therefore, linear extrapolation of historical trend already incorporates the unforeseen advances and shocks that will likely occur in the future.

MORTALITY AT OLDER AGES (ESPECIALLY OVER 80) WILL CONTINUE TO DECLINE

Vaupel opened the symposium and actually introduced the theme of the other three speakers: There has been some progress in slowing the rate of aging but there will be substantial progress made in the future. Some examples are genotype-specific therapies for age-related diseases like cancer and regenerating and rejuvenating tissues.

Barzilai is one of the individuals trying to unlock the secrets of the biology of aging and determine how to stay healthy longer. It is recognized that people age differently but it is not known what makes some individuals age more quickly than others. It is known that the age of death of a parent has some correlation with the age of death of their children. If a parent survives to older than 80, there is an impact on the occurrence of age-related disease in their children. It has also been shown that environment impacts the aging process.

THE BIOLOGY OF AGING IS COMPLEX

While biologists can distinguish old bodies from young bodies, there are so many things in the human body that fluctuate it is difficult to distinguish whether the changes are a cause of aging, a marker for aging or actually a protector against aging. Barzilai indicates there have been three areas of focus to date in understanding the biology of aging:

1. Aging of the genome
2. Aging of the cells
3. Effects on metabolism as we age.

Each area has shown to be a cause of aging and also to be affected by each other. This again makes it difficult to determine how aging starts. However, by understanding the biology of aging, we can prevent aging and its diseases, which can lead to healthier aging and more dividends, such as a reduction in health care costs.

BY UNDERSTANDING THE BIOLOGY OF AGING, WE CAN PREVENT AGING AND ITS DISEASES, WHICH CAN LEAD TO HEALTHIER AGING AND MORE DIVIDENDS, SUCH AS A REDUCTION IN HEALTH CARE COSTS.

There has been significant success in emphasizing longevity. Instead of trying to really understand the biology of aging, this perspective stresses looking at how something can be maintained. Maybe along the way, insights into what aging really is will be discovered. Barzilai mentioned that healthy life span has been extended in numerous models.

He also commented on his belief that life span cannot be extended forever. As a species, humans probably have a maximum life span.

MORE ON LONGEVITY RESEARCH

ADDITIONAL RESEARCH on aging and longevity can be found on the SOA's website under completed research projects. Visit ***www.soa.org/research/research-projects/default.aspx.***

The oldest person in the world, Jeanne Calment, died at 122 and, from a biology standpoint, there is probably a limitation somewhere between 100 and 122.

LIVING TO AGE 100 AND BEYOND IS UNIQUE

Barzilai studies centenarians to discover the secrets of aging. He looks for the "best of the best," meaning healthy and living independently, to join the study. There are currently 600 enrolled from ages 95 to 116 (average age is 100). One might think they achieved this by never drinking alcohol or smoking, maintaining the appropriate weight, exercising daily and always doing what their doctor told them to do. They did not.

When Barzilai began the study over a decade ago, about 1 out of every 10,000 were centenarians. Now it seems there has been such an increase in the prevalence of centenarians that reaching the age of 100 is commonplace. He argues the numbers are likely overstated and living to age 100 and beyond is very rare.

What has been discovered about centenarians is that there's a strong family history of longevity. While the genetic component of longevity may not be as important at 70 or 80, it is very significant at age 100 and above. So in the study, they hypothesized that the centenarians had a perfect genome, which is why they were staying alive. The results showed this was not the case. Now the emphasis of the study is identifying the genes helping these individuals live to extreme old age.

End-of-life medical costs are another interesting aspect of the centenarians studied. The costs are much smaller than for individuals who die at earlier ages. In comparing the medical costs incurred in the last two years of life, Barzilai said the centenarians in the study have one-third of the costs as those who die between 60 and 70. This supports the "longevity dividend" idea developed by Jay Olshansky and others that by understanding the biology of aging, the aging process can be delayed/slowed, resulting in more healthy aging and benefits such as reduced medical costs.

ARE REJUVENATION BIOTECHNOLOGY AND REGENERATIVE MEDICINE THE FOUNTAIN OF YOUTH?

Another perspective on the "frontier of survival" was presented by de Grey, who believes that age-related disease and aging itself are medical problems and are medically preventable. He has categorized the biological deterioration of aging into seven categories of damage. He claims we currently have the treatments and therapies to remove, repair, reinforce or replace all such damage, thus increasing life span significantly. Although these therapies are still being refined and enhanced and are not yet ready for widespread practice, de Grey indicates even crude rejuvenation therapies would produce mortality-reduction results.

WHILE DEBATE CONTINUES AROUND THE UPPER LIMITS OF LIFE EXPECTANCY AND HOW LONG THE HUMAN SPECIES COULD LIVE, THERE IS GENERAL CONSENSUS THAT HEALTHY LIFE HAS BEEN AND CAN BE EXTENDED AND LIFE EXPECTANCY IS INCREASING.

Atala described the progress made to date in the field of regenerative medicine. He showed video clips of human tissue and organs being "printed" in the lab and how once the tissue and organs were implanted, the recipients were restored to normal health. He indicated that many tissues and organs, including the heart, liver and kidneys, have been successfully generated in the lab.

THE ACTUARIAL PROFESSION HAS A BIG RESPONSIBILITY

While debate continues around the upper limits of life expectancy and how long the human species could live, there is general consensus that healthy life has been and can be extended and life expectancy is increasing. This increases the need for actuarial thought leadership to help extend healthy financial life spans of individuals, businesses, governments and society trying to meet the challenges and opportunities human life extension poses. This is not an easy task given the diverse views on the future of longevity.

Vaupel mentioned failure of imagination by experts in foreseeing what the future might bring. I disagree. Instead of failure of imagination, I think lack of education is the reason for not being able to see the possibilities of the future. As longevity and its implications are both a very personal and public issue, actuaries need to know the latest advancements, data, methodologies, views or policies to ask the necessary questions to be able to envision a future different from the status quo. The SOA has devoted resources to helping members learn about what the future may hold for the frontier of survival, as well as the needs of the aging population and the required support systems. Besides Living to 100, many of the SOA's research committees and sections have sponsored research on this topic in the past and are considering longevity research projects in the upcoming year. The SOA even has a committee that initiates and develops continuing education programs and research related to risks and needs during the post-retirement period.

There is no doubt the actuarial profession has a big responsibility in helping support the aging populations around the world. I think actuaries will deliver as failure is not an option. After all, people are depending on us. A

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Note: *Special thanks to James Vaupel, who kindly agreed to allow the publishing of Figures 1 through 4 in this article.*

To read more about the concepts discussed in this article, visit the Living to 100 page at ***livingto100.soa.org/.***

WHAT'S YOUR DREAM JOB?

BEING OPEN TO OPPORTUNITIES AND KNOWING WHAT YOU WANT CAN LEAD YOU TO THE JOB OF YOUR DREAMS. BY JOEL SALOMON

If someone asked me 20 years ago what my dream job was, I would have answered "hedge fund manager." At the time, I was working as an actuary, having just completed my exams to become a fellow of the Society of Actuaries. After working in a number of departments, including the asset-liability management (ALM) area, for New York Life Insurance Co. (NYL) and taking some courses that today would be part of the investment risk management and financial reporting modules, I realized where my true passion lay.

In the ALM area, I used Bloomberg to access forward curves, or future yield, for modeling the annuity and universal life lines of business and to look up the financial security codes, CUSIPs, for the bonds that NYL had invested in. But the real fun was when I talked to my manager about stocks. She was enamored with Berkshire Hathaway and we debated the merits of the investment (with no "Baby Berkshire" shares at the time, she advised me to scratch together $11,000 and buy a share).

So the key question in 1993 for me was how to align my hobby and career. I talked to a number of actuaries who worked at rating agencies and Wall Street firms. The response was nearly unanimous. If you want to move to the buy side (that is, invest in fixed income or equities securities, especially insurers), the best place to learn is a rating agency. Both Moody's Investors Service and Standard and Poor's Rating Service were touted as great training grounds. The guys on Wall Street gave three majors points for moving to a rating agency, where you would be able to:

- Utilize your actuarial skills to analyze statutory and GAAP (generally accepted accounting principles) statements
- Get access to many insurers' cash flow testing and reserve adequacy analysis
- Determine the creditworthiness of many insurers.

Not only that, they said, but you would have the opportunity to upgrade or downgrade companies, assign initial ratings to debt securities, write up special reports on important industry issues and create research reports on individual companies. And you would be able to travel around the country. Well, the analysis aspects sounded awesome, but my second biggest passion was traveling, and I was hooked.

Eventually, I was promoted and was responsible for my own portfolio of companies, analyzing each page of those statutory statements and writing up research on those insurers.

What to do next? A marketing friend of mine suggested sending a Federal Express package to the head of the insurance division at Moody's with the message: "If you give me two minutes of your time, I will show you I am the best candidate for the senior analyst job." That got me the interview. Unfortunately, it was clear I was not quite ready for a senior analyst role, but I did manage to secure a junior analyst role. Getting in the door was the goal, of course, so I took it.

MOODY'S: A STEP IN THE RIGHT DIRECTION

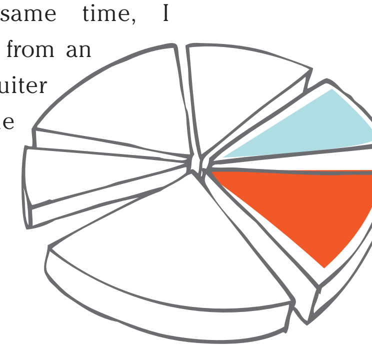
My experience at NYL proved invaluable in my initial days at Moody's. Having the experience working on statutory statements as an actuary helped me know exactly where to look to find the important disclosures, the key reserve interest rate assumptions by product type and, of course, being able to spot the most important scenarios in the insurer's cash flow testing (asset adequacy) reports.

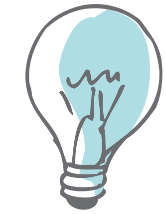
My initial job was to write up research reports on various asset classes, conduct ALM and help the senior analysts. Eventually, I was promoted and was responsible for my own portfolio of companies, analyzing each page of those statutory statements and writing up research on those insurers. And I traveled the country!

After almost four years of getting excellent experience and knowledge across various product types, reserve methodologies and, of course, company cultures, I realized my learning curve was leveling off and I was one step closer to my dream job.

SWISS RE: A LITTLE BIT CLOSER NOW

Around the same time, I received a call from an actuarial recruiter who told me that a reinsurer was making





DREAM JOB VOCAB

Catastrophe bonds (CAT bonds)
Securities that are risk linked and high yield and transfer from the sponsor to the investor a set of risks usually associated with catastrophes and natural disasters

CDOs (collateralized debt obligations)
Individual loans such as auto loans, credit card debt and mortgages pooled together and sold to investors; the individual loans are the collateral for the CDOs, with the payments passed on to various classes of owner, or tranches

CLOs (collateralized loan obligations)
A type of CDO, often backed by corporate loans with the payments passed on to various classes of owner, or tranches

Contingent capital
Debt that converts into equity when a specific contingency, such as a natural disaster or a maximum for raw materials, is met

Credit default swaps (CDS)
Considered insurance against nonpayment, the CDS seller agrees to compensate the buyer if the loan goes into default

Dodd-Frank Act (aka, Dodd-Frank Wall Street Reform and Consumer Protection Act)
Federal law, enacted in July 2010, as a response to the Great Recession with the aim to stop significant financial crises with financial regulatory processes at all federal financial regulatory agencies

Finite reinsurance
A form of reinsurance more focused on capital management than on risk transfer, where there is a cap on the reinsurer's exposure

Private equity
Equity capital not publicly traded on a stock exchange

Shorting (short selling; going short)
Sale of securities or other financial instruments not owned by the seller, and subsequently repurchasing them

Statutory statement (statutory insurance statement)
Prepared with insurance companies' statutory accounting principles; the basis for state regulation of insurance company solvency

Volcker Rule
Section 619 of the Dodd-Frank Act, to restrict U.S. banks from making certain kinds of investments that supposedly do not benefit their customers

private equity (PE) investments and was looking for a PE analyst. I jumped at the chance to interview, and realized on the interview that the job was much more than a PE analyst. This group was on the cutting edge of financial markets. They were structuring credit enhancements for individual insurance blocks of business (and trying to do the same for whole companies). They were working with other areas of the reinsurer that hedged insurers' variable annuities, and they were managing the existing PE portfolio. I realized this wasn't public securities but I also realized it was getting me one step closer to my dream job. I took the job.

My experience at Moody's provided me with an excellent perspective for this department. I was able to jump right in and understand the importance of rating agencies in credit enhancement transactions and how to structure the transaction to achieve the highest ratings. It was also quite helpful to have worked on analyzing insurers from a credit perspective since the private equity analysis was a long-term investment from another point of view.

However, less than a year after joining Swiss Reinsurance Co.'s life and health division, they decided to purchase Life Reinsurance Co. Some may look back and view it as a "take-under" given the forthcoming changes in management and strategy. It was clear from the announcement to one particular PE analyst that his division was not "core," as Moody's used to say.

Swiss Re, at the time, was entering into various contingent and direct credit risks around the globe through financial and finite reinsurance transactions without actually having a credit analyst dedicated to analyzing the insurance company counterparties. Knowing there was a PE analyst about to be a free agent, an actuary in Swiss Re New Markets hounded the Credit Risk Department to interview me. Though it wasn't the reason I joined Swiss Re, I realized it was an excellent position to learn about credit from the ones actually doing the transactions. And what transactions they were! High-yield and high-grade collateralized loan obligations

(CLOs), collateralized debt obligations (CDOs), credit default swaps (CDS), finite reinsurance, contingent capital transaction, catastrophe (CAT) bonds, etc. And did I mention they wanted me to analyze these insurers from Zurich? It was supposed to be three months, but don't ask a passionate traveler to spend just three months in the center of Europe. After getting a taste of Zurich (and Schruns) in January 1999, 15 months seemed way too short a visit for someone who felt disappointed *only* getting to 46 countries.

As a passionate investor, having someone whose sole responsibility is the business side eases concerns of existing and potential investors.

After returning to New York City having been recently named a managing director, I was still learning a lot about the ever-changing world of credit products. But when I found an analyst role at a small hedge fund that also structured CDOs and made private equity investments in both banks and insurers, it sounded like the "perfect" job for someone who enjoyed equity investing and had experience in the other businesses.

FINANCIAL STOCKS INC. & CITIGROUP: ALMOST THERE

In October 2004, I started at Financial Stocks Inc. (now known as FSI Group LLC.). And if someone wanted to analyze insurers, you certainly got your chance there. First, they were structuring one of the first trust preferred security CDOs that included banks and insurers in one pool. Second, they were evaluating every private insurer raising money in 2004 and 2005 (remember the "Class of 2005" after hurricanes Katrina, Rita and Wilma?). And finally, though the hedge fund had invested in insurers in the past, the opportunity to grow the portion into a sizable piece of the portfolio was just what I wanted.

From there, it was just a matter of time before Citigroup came calling with my "almost" dream job: managing a portfolio on the proprietary desk of the equities division. I would have responsibility for deciding which insurers to buy or sell or short. I also would be responsible for sizing the positions, and have responsibility for deciding whether the portfolio overall was long or short. Was I up to the task? Well, it was the end of 2007. Can anyone say "financial crisis"? Luckily, years of analyzing credit risk helped this actuary know that ultimately an insurer and other financial institutions are dependent on access to the credit (and equity) markets for their viability. That helped me make money in 2008—when it was not clear to many if *any* financial institutions were creditworthy—and again in 2009 when it was clear the bond market was "healing." After another two years at Citi, the Dodd-Frank Act passed along with the Volcker Rule, which—though to this day is not yet fully written—required almost every U.S. bulge bracket firm to fire their proprietary desk portfolio managers.

SALAURMOR: A DREAM COME TRUE

Happily, this led me—finally, some may say—to my dream job. In 2013, SaLaurMor Capital opened its doors. SaLaurMor, named after my daughters, Lauren, 10, and Morgan, 8, is a long/short equity and credit hedge fund focused on financial institutions with a specific bent on—you guessed it—insurance companies.

As a new fund, SaLaurMor is quite lean with three—soon to be four—employees. Currently, there are two investment professionals and a chief financial officer/chief operating officer. As many of you know, service providers are a key element to any hedge fund in this post-Madoff world. Each fund has a prime broker, fund administrator, auditor, law firm and the obligatory compliance firm. So, one of the key challenges to a start-up hedge fund is ensuring the correct controls are in place to run the business properly. As a passionate investor, having someone whose sole responsibility is the business side eases concerns of existing and potential investors. It has been said that today no one can start a hedge fund in a garage with a Bloomberg machine. So, clearly start-up (and ongoing) costs are higher. Registering with the Securities and Exchange Commission (SEC) when the fund has $150 million in "regulated assets under management" is something that didn't exist 10 years ago.

So, how do I differentiate myself from other financial-sector-focused portfolio managers out there? Well, here are a few ways.

1. I focus on the balance sheet, especially analyzing reserves, and take a credit point of view to equity investments.
2. My goal is to establish

an economic fair value of the equity security and look at various economic and interest rate scenarios to determine excess capital and fair value.

3. I tend to be a long-term investor. At Citi, the average holding period was 15 months, and I suspect it might be longer at SaLaurMor. Furthermore, monthly turnover was just 5 to 7 percent at Citi.
4. I spend a lot of time analyzing the rating agencies point of view of the insurer. What is the likelihood of an upgrade or downgrade? What does Moody's think the excess capital position is of the insurer? As many of you know, the rating agencies are the ultimate arbiter for capital management at insurers.
5. I'm a risk manager first and a portfolio manager second.

To conclude, being an actuary lends a unique perspective to analyzing an insurer from both a credit and equity point of view. While some may be focused on the next quarterly earnings reports, and whether they will be a penny above or below expectations, I tend to consider the value of the insurance company over the next one to three years. Actuaries tend to have a unique perspective, and I know there are many more today who are interested in the buy side. I have interacted with a few who are CEOs of insurers or employed in the asset management division of insurers or buy-side firms. Twenty years ago, these positions were extremely rare. I believe there will be more and more room for actuaries in nontraditional roles. Would you like to be a hedge fund manager? What is YOUR dream job? A

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Education

PROFESSIONALISM EDUCATION: PREPARING CANDIDATES TO MAKE SMART DECISIONS

BY LINDEN N. COLE WITH INPUT FROM JEREMY J. BROWN AND MARTHA SIKARAS

DURING THE MID-1980S, Society of Actuaries (SOA) leadership considered introducing formal education on professionalism into the fellowship curriculum. Other professions had already done so, and the idea quickly gained traction and support from our education and exam volunteers. I was the SOA staff actuary assigned to this group. The development and administration of the course are among the most intriguing experiences I have had during my career as an actuary.

At that time, several proposals for improving actuarial education were described to the membership. Of all the proposals, the development of what was to become the Fellowship Admissions Course (FAC) received the greatest support. The volunteer group that developed the proposal recognized that the exam system at the time measured the candidates' ability to respond to well-defined questions in a specified period of time. But real-life issues are not structured this way, not in the past or now. Actuaries face broad, sometimes ill-defined problems with perhaps more than one right answer. The FAC was developed to fill in that gap in our education process. The first FAC was offered in September 1990.

> At that time, several proposals for improving actuarial education were described to the membership. Of all the proposals, the development of what was to become the Fellowship Admissions Course (FAC) received the greatest support.

Case studies were determined to be an effective way to address these concepts (much more effective than a textbook/exam approach), and the committee decided to make case studies the center of the FAC, to be the final requirement for fellowship. Professors at the University of Western Ontario business school coached us on the construction and use of case studies. We were urged to base the cases on things that really happened, rather than making cases up, and we continue to do that, two decades later. Each case presents an actuary confronted with an awkward situation involving professionalism issues, with many possible ways to resolve the issues. We could not have received better training in the use of case studies.

To teach with a case study, skilled facilitation techniques are essential. A trained facilitator can help the candidates discover the nuances of a case. Even though the facilitator might have a better grasp of the issues in the case than the candidates do, he or she functions as someone with no advantage over the candidates as the group works through the case. The facilitator starts by asking the pre-assigned small groups (each with five or six candidates) to work on their own, identifying the issues and evaluating all possible alternatives, with no advance analysis of the situation by the facilitator. This discussion might last 15 or 20 minutes.

Then the small groups move back into the total group (maybe 20 or 30 people), which discusses the case, with the facilitator leading the discussion and working through the alternatives with the group.

One of our original facilitators, the late Dan McCarthy, once said:

> Real life is a great teacher, and the case studies are much closer to real life than simply reading the document. The case studies provide the opportunity for feedback from other people. You participate with other people. They think of things you don't think of, you think of things they don't think of, and, as a result, you may wind up at a different point than that which you would have arrived at alone. I've often thought that one of the deficiencies of the process by which people become fellows of the SOA is that we study alone, we take examinations alone, and yet most of what we do in life we don't do alone as professionals. The FAC has moved us well beyond that.

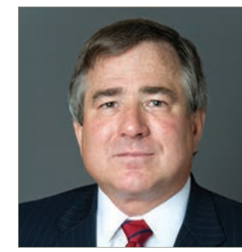
A separate idea came up along the way: to include in the course a celebration for the brand-new FSAs upon completion of the course, and this has worked very well. Attending an FAC graduation banquet gives a whole new perspective to the phrase "actuarial meeting"! As you might imagine, most new FSAs celebrate the moment with tremendous enthusiasm. At each graduation banquet at least one candidate seems to find a way to accent the occasion in a way we have never before seen (or imagined!).

The FAC program addresses the central theme of professionalism. We have always shown the "Billion Dollar Bubble" movie, watching the actor James Wood trying to look like an actuary (!). It's startling to realize that actuaries can get involved in outright fraud, and serve jail sentences. The movie illustrates how slippery the slope can be once the first wrong step is taken.

Naturally, the candidates especially appreciate the networking and meal times where they can relax and meet some others who will shortly be new fellows. Actuaries enjoy talking to each other, and there was at least one instance where we went on so long that we were finally asked to leave the dining room because the wait staff wanted to go home.

The modern FAC program today shows some differences. All the case studies are about one hour long, involving ethical/professional issues. In the first afternoon, candidates hear a lecture on how to make an effective presentation. For half of day two, the candidates are divided into groups of 10, and each of the 10 makes a brief presentation about their Decision Making and Communication (DMAC) module project, which is critiqued by the others in their group. For those who are not experienced or at ease with public speaking, it is really helpful to have this experience in front of a sympathetic group.

Linden Cole



Jeremy Brown

Martha Sikaras

The "Billion Dollar Bubble" movie is still shown, and there are now two professionalism lectures: one on legal aspects and requirements and another on the more practical implications of the Code of Conduct. The banquet at the end of the program continues to be a wonderful celebration, with diplomas presented and a message from the current SOA president. Family members frequently attend the banquet, celebrating with the new FSAs.

After the FAC was up and running, some felt that the presentation of issues of professionalism should come sooner in a student's career, and that the FAC should be moved earlier. We resisted this, since the total package was working so well for about-to-be FSAs, and we decided to add a one-day program for students close to associateship. The Associateship Professionalism Course

Professionalism Education

AS MOST FAC ATTENDEES have heard, "the learning never stops." Professionalism education in particular should have a prominent, lifelong focus. The SOA offers members many different ways of meeting your CPD requirement in the topic: e-Courses; meeting sessions and webcasts, to name just a few approaches. Please visit the PD calendar *SOA.org/calendar* for more information.

Course Directors Share FAC Highlights

CURRENT AND FORMER FAC course directors have a lot to say about the value of this professionalism rite of passage for new FSAs.

Jerry Brown, the current FAC course director, notes that speaking with candidates at FACs about ethical issues, working with them to complete their fellowship requirements, and calling them up to receive their diplomas are more rewarding than anything else he has done as an SOA volunteer.

"In building and maintaining FAC, we have stressed that the issues come alive with stories, hence the use of case studies reflecting actual experiences of actuaries. Discussing the cases creates learning opportunities for candidates and facilitators alike. I recall that the first time I served as course director, the attorney who spoke about professionalism and malpractice avoidance relayed that as an attorney, she would never do anything that she couldn't tell her grandmother. That struck a chord for me, and I have applied the "nana" test to my actuarial work for the last 18 years."—*Debbie Liebeskind, FSA, past FAC course director*

"The banquet and certificate presentation at the end of the Fellowship Admissions Course are especially meaningful to me. They provide the opportunity for the spouses, parents, grandparents and children of the new FSA to share in celebrating this great accomplishment."—*Robert M. Beuerlein, FSA, past FAC course director*

"What an awesome opportunity for new FSAs to celebrate with their peers and the SOA president. This course gives an opportunity to make connections and gain contacts that will last for their entire career."—*Nancy Behrens, FSA, past FAC course director*

(APC) is, to some extent, a mini-FAC, with easier case studies and an explanation of the Code of Conduct, standards of practice, discipline and similar topics. The Canadian Institute of Actuaries delivers a similar one-day course for Canadian-based candidates that is fully recognized for credit by the SOA.

We believe that introducing the APC was a good decision. The few years of work experience between associateship and fellowship add significantly to a student's appreciation of professionalism issues in the business world, which adds to the value of the lessons taught at an FAC. The lessons taught in the APC serve our new associates well. Some issues that might go over the head of someone at the "new associate" level will be very significant to the same person at the "new fellow" level.

Students who are spending all their spare time studying for the exams may resent having to attend this one-day course, but the near-universal reaction afterwards is, "It was better than I expected." This is high praise, coming from an actuarial student.

The number of our actuarial students in other countries continues to grow astronomically. We have trained local facilitators who offer the APC several times per year in Hong Kong, Shanghai and Beijing. The FAC has also been offered in Asia, every other year. The international FAC sessions have been surprising only in the numbers of North American attendees. While these sessions are typically much smaller than their North American counterparts, they have had surprisingly large numbers of candidates from North America, Europe and the Middle East. Conversations with candidates at these programs have served to strengthen our belief that a common core of professionalism issues is universal. Resolution of those issues has multi-cultural components and thus proves to be a learning experience as much for the faculty as the candidates.

We do need a stream of new case study ideas! If you have encountered an experience that presented professionalism problems and that did not have a single best obvious solution, please get in touch with Martha Sikaras at *msikaras@soa.org*.

To sum up, the FAC and the APC have succeeded in presenting important concepts and principles effectively, early in the careers of our members. If we weren't sure at the beginning that the programs would be successful, we certainly are now. A

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Coming soon …

SOA ELECTIONS 2014

Watch for the election ballot announcement and election details soon coming your way!

This year, elections open Aug. 18 and close Sept. 5 at 5 p.m. CT. Visit ***soa.org/elections*** for elections information.

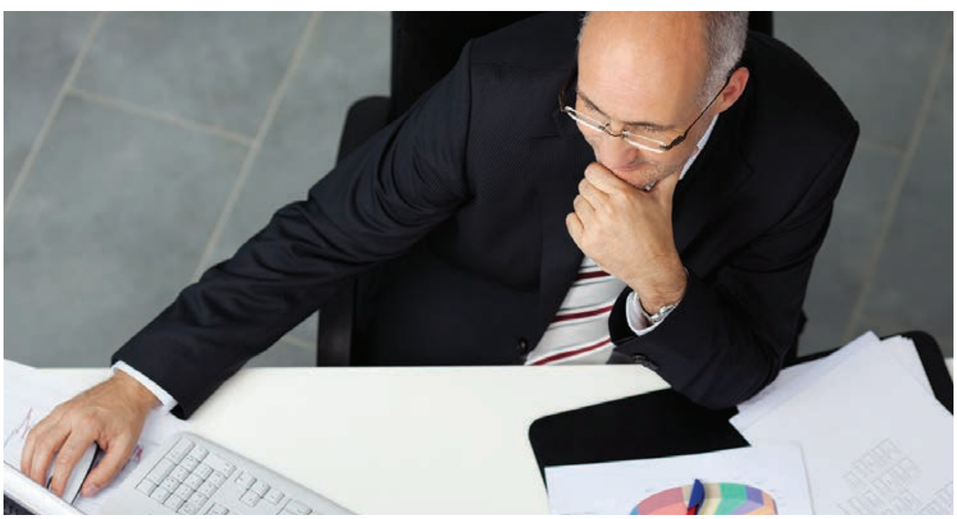
Send your election questions to ***elections@soa.org.***

Nick Ortner

Section Highlights

ENTREPRENEURIAL ACTUARIES SECTION

BY NICK ORTNER



THE ENTREPRENEURIAL ACTUARIES SECTION (EAS) recently refreshed its strategy and tactics to clarify who EAS is and what EAS does—its mission being to serve the business needs of actuaries and related professionals who possess an entrepreneurial spirit by providing education, exposure, business resources and networking opportunities. The EAS also seeks to expand the traditional definition of "entrepreneurship"—rather than limit that definition to strictly "small business start-ups funded by some combination of personal investment and/or outside funding," we aim to broaden our reach to also reach innovators in existing firms, large or small (i.e., "intrapreneurs"/"corporate entrepreneurs").

EAS spans the spectrum of expertise across the SOA—almost by definition, entrepreneurs need some level of understanding across many fields and so are not limited to any one practice area. The EAS' challenge is how to optimize its reach across various platforms in the efficient manner demanded—we do so via active coordination of and participation in:

A. EAS newsletter (coordinating and article-writing)

B. EAS' social media outlets (with work ongoing to expand those outlets)

C. Meetings and webinars either organized by EAS or where EAS has a role, with a particular focus on two fronts:

1. Recognizing EAS' cross-sectional expertise, we seek collaboration at every turn, with recent co-sponsorships including work with the Actuary of the Future and Technology sections, among others; and

2. Expanding EAS' Canadian/international reach—for example: speaking opportunity at the upcoming International Congress of Actuaries, and collaboration with the Canadian Institute of Actuaries (CIA) on a September workshop in Toronto.

Questions/comments can be directed to Nick Ortner (chairperson of the EAS) at *njortner@nglic.com.* A

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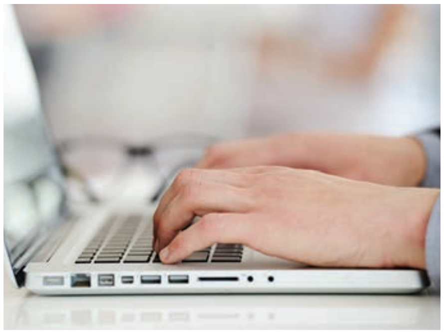

SOA AT WORK

OUR WORK WITH OTHER ACTUARIAL ORGANIZATIONS

BY GREG HEIDRICH

RELATIONSHIPS ARE IMPORTANT—we all know that—and an organization like the Society of Actuaries (SOA) has many significant relationships to develop and maintain. These relationships are a critical part of our work to support the actuarial profession globally and to achieve the SOA's strategic objectives. This year, we're focusing attention on building and strengthening a variety of relationships, and identifying ways we can work with others to promote our profession. As we do that, we're working within the context of the strategic plan and initiatives established by the board of directors. To be effective, some initiatives require a great deal of collaboration with others and, in this context, building and maintaining relationships is critical. In other cases, an initiative may be more SOA-only in nature and may require less relationship development. Some initiatives address areas where we may sometimes choose a different approach than other organizations. When that occurs, the relationships we've developed are probably even more important, but may also be a little more difficult and require extra attention. These are all normal aspects of a strategy-driven approach to our work and a strong reason for the attention we're devoting to the development and maintenance of solid, healthy relationships. I'd like to share a few examples of the relationship-related work we're doing.

The SOA and the IFoA have several ongoing education collaborative projects that strengthen both organizations in important ways. These include an exciting project to benchmark the "competencies" our organizations build as we train actuaries.

Since releasing the report from the independent Blue Ribbon Panel on public pension plan funding, we've discussed its contents with other actuarial organizations and reached out to non-actuarial groups and organizations to talk about the panel's recommendations. We've discussed the report with government finance officers, representatives of some of our nation's governors, congressional staff, and officials of the U.S. Treasury. This outreach is vital to ensure that other organizations, including those interested in our work but outside the profession, understand this project and its importance. Because these relationships also build trust, they help ensure that the profession's work on this issue and others will have an ongoing impact in the future as well.

In the United States, the SOA has an active program of collaborative activities with both the American Academy of Actuaries (Academy) and the Casualty Actuarial Society (CAS). With regard to the Academy, most of this is in the area of research or Practice Council support. Our staff actuaries provide support and information on the SOA's research programs to the Academy's Practice Councils and help ensure coordination of our research where it touches on major practice questions or public policy topics. We're also engaged in several of the "forward-thinking" efforts by the Academy, including the new Retirement for the Ages project, and Academy staff actuaries have worked with us to develop some of our research efforts and capabilities, particularly our in-house retirement research function.

We also have projects underway with the CAS, including our co-sponsorship of the Joint Risk Management Section, the ERM Symposium and the BeAnActuary website. In addition, the SOA was pleased to work closely with the CAS to support the International Congress of Actuaries (ICA) 2014 held in Washington in March. SOA leaders, volunteers and staff were deeply involved in the preparation and management of the Congress, ranging from obtaining sponsorship funding to staffing the registration desk during the conference.

We're also working with the CAS (and other organizations) on joint research, notably a project to develop an actuarial index focused on extreme climate events (this project also involves the Academy and the Canadian Institute of Actuaries (CIA)) and on a new study of market demand for and supply of actuaries in North America.

Looking north, we're implementing a new agreement to partner with the CIA on research focused on Canadian retirement issues. They are taking the lead in reaching out to the Canadian government to seek access to important data. We're taking the lead in retaining a research actuary and providing modeling support. Together, we will select projects and oversee the research on a joint basis. Both organizations will promote and discuss the research, each in areas where we can have the most impact. It's an exciting effort and one we know the SOA's Canadian members support enthusiastically.

We also have a close relationship with the Institute and Faculty of Actuaries (IFoA) in the United Kingdom and work together in a variety of areas. The IFoA president-elect and executive director will speak with the SOA board in June about their strategy, how they view their work around the world, and ideas they have for working with us to support and promote the future of the profession.

The SOA and the IFoA have several ongoing education collaborative projects that strengthen both organizations in important ways. These include an exciting project to benchmark the "competencies" our organizations build as we train actuaries. For some time now, our two organizations have benchmarked the operational features of our pre-qualification education systems. This has helped both organizations identify areas for improvement and assures us that we're operating with similar levels of rigor and efficiency.

Now we are asking whether actuaries educated through the SOA and IFoA systems are being trained for the same types of skills and competencies. While there are clearly differences in our systems and in some of the specific knowledge needed to work in different parts of the world, it's important to know that we're striving to train actuaries to perform similar work, using world-recognized tools and techniques, with similar rigor. This promotes a stronger global actuarial profession and will have a strong positive impact on the development of the profession worldwide.

Moving even farther abroad, President Mark Freedman and I recently completed a visit with representatives of the Actuarial Institute of Chinese Taipei (AICT). We discussed ways we can work together to support both organizations' goals and our common members (and students) in Taiwan. We also talked about joint professional development events and, in particular, ways the SOA can support the East Asian Actuarial Conference being hosted by the AICT this fall in Taipei. This would build on an important project we recently completed with a dedicated group of Taiwanese SOA members—to develop a new regulation and taxation e-learning module focused on Taiwan that will help us serve members and candidates in Taiwan.

Finally, as part of our continued strengthening of the SOA's services to its members in China and in support of the profession in this area of the world, we're working to explore possible opportunities to partner with the China Association of Actuaries (CAA) on professional development opportunities for our members there.

With all of these efforts, we are (and must remain) focused on achieving our goals in support of the profession, our members, and our candidates globally. The SOA is investing great energy on collaborative projects with a variety of organizations inside and outside the profession and building our relationships with these organizations. We can't go it alone in the world. There are many challenges facing the profession, and we need to develop partnerships, agreements and alliances that help us be most effective on behalf of our members and students, and help them be most successful in their work. A

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SOA PARTICIPATES IN IAA COUNCIL AND COMMITTEE MEETINGS

BY KIRSTEN MORAN

RECENTLY, the Society of Actuaries (SOA) participated in the International Actuarial Association (IAA) Council and Committee Meetings in Washington, D.C., March 26-30, 2014. These meetings allow the SOA to discuss developments and share experiences with actuarial associations from around the globe on issues impacting all areas of actuarial practice, including standards of practice, insurance regulation, professionalism, and pension and employee benefits.

WHAT IS THE IAA?

The IAA is the worldwide association of actuarial associations, with 64 full members and 28 associate members covering 108 countries. The IAA represents and promotes the role of the actuary in the international arena; it also actively promulgates professionalism, education standards, and encourages actuarial research through the energetic input from volunteers representing the member associations. The SOA is one of the IAA's largest full member associations, and has representatives participating in the IAA's committees as well as volunteers participating in the various special interest sections. The IAA Council and Committee Meetings allow SOA representatives to engage with their peers as well as professionals in related supranational bodies such as the World Bank, International Association of Insurance Supervisors (IAIS), International Social Security Association, and the Organisation for Economic Co-operation and Development, among others.

IAA COUNCIL AND COMMITTEE MEETINGS, WASHINGTON, D.C.

At the most recent IAA Council and Committee Meetings, the continued development of International Standards of Actuarial Practice (ISAPs) was a key focus. The IAA creates ISAPs as model standards, particularly for those areas in which there are currently no existing standards of practice. The IAA seeks input from its member associations throughout the development process, and has created ISAPs for General Actuarial Practice and Financial Analysis of Social Security Programs. The IAA has also laid out a plan to develop ISAPs on IAS 19 Employee Benefits, International Financial Reporting Standards (IFRS) X Insurance Contracts, Enterprise Risk Management, and IAIS's proposed Basic Capital Requirement and Insurance Capital Standard.

The IAA actively supports the development of the actuarial profession in countries around the globe through its Advice and Assistance Committee, which has subcommittees focused on developments in Latin America, Africa, Middle East, and Asia. These committees help support the growth and recognition of the actuarial profession in countries where the profession may not be fully developed. SOA representatives, in conjunction with other volunteers on these committees, provide information and assistance to those actuarial associations that are interested in becoming full or associate members of the IAA. The SOA and the IAA share the goal of supporting the global actuarial community, and the Advice and Assistance Committees provide an opportunity to further develop and support these communities. Likewise in the spirit of global cooperation, the IAA's Professionalism Committee has continued to develop a publicly available set of resources in the areas of best practices for member conduct codes, discipline processes, education, guidance on professionalism topics, and other related subjects. These resources are quite valuable to actuaries who operate in regions where an established actuarial organization does not exist or in regions where the actuarial association has a limited or no secretariat support staff.

The IAA Council and Committee Meetings closed on March 30, 2014 and were followed by the International Congress of Actuaries in Washington, D.C. The next IAA Council and Committee Meetings are scheduled for Sept. 10-14, 2014 in London. A

Kirsten Moran is project specialist at the Society of Actuaries. She can be reached at *kmoran@soa.org.*

CIA AND SOA PARTNERING TO CONDUCT RELEVANT RESEARCH FOR CANADIANS

BY ÉMILIE BOUCHARD, DAVE DICKSON AND IAN GENNO

SEVERAL YEARS AGO, the Society of Actuaries (SOA) launched an initiative to enhance the support it provides to Canadian members (who comprise a very significant proportion—18 percent—of its total global membership). Our goal is to ensure the SOA provides good value to its members in Canada, in a way that is complementary to and supportive of the services the Canadian Institute of Actuaries (CIA) delivers.

As part of this initiative, the SOA is focusing on ways to expand our partnership opportunities with the CIA on Canadian research projects—by providing expertise, resources and funding to assist in developing and delivering valuable actuarial research to Canadian actuaries and the public.

To support this initiative, the SOA has hired Emilie Bouchard as staff fellow, dedicated to Canadian membership. Part of Emilie's role is to help identify relevant research projects and promote them within the SOA to obtain funding and support. The SOA also recently hired Dale Hall as the managing director of research. Dale and Emilie will work closely with Dave Dickson, chair of the CIA Research Committee; Ian Genno, chair of the SOA Research Executive Committee; and key representatives within the CIA to advance Canadian research by identifying and promoting research issues that would benefit from cooperation and collaboration by both organizations.

This initiative has resulted in several recent joint projects, including research papers on health care and climate volatility. Three recent projects are highlighted below:

1. **Enterprise Risk Management (ERM):** The CIA and SOA have jointly contracted with a consultant to review *Globe and Mail* business news items over the last 12 months, to identify significant events affecting companies and group them under risk management categories. This will give us a better understanding of how ERM can play a role in helping companies manage the range of risks they encounter. We anticipate the resulting research paper will be of interest both to actuaries working in ERM and to a broader audience in Canadian corporate management.

2. **Life Insurance Policyholder Behavior:** We are planning an analysis of policyholder behavior under segregated fund products, such as fund switches and redemptions. This will give our members and Canadian companies a better understanding of the activity experienced under these types of products. In the United States, the SOA engaged LIMRA to complete a similar project, and their experience will be leveraged in conducting the Canadian study; the Segregated Fund Experience Subcommittee of the CIA Research Committee will help gather the data and manage the project.

3. **Data-Driven In-House Research:** This initiative will take a different approach to applied actuarial research. In a typical CIA or SOA research project, a need is identified for research on a specific topic, a volunteer oversight group is recruited, a project plan is developed, a researcher is selected, data are gathered, and the study is conducted. This process occurs separately for each project, and can often take one or more years. In the United States, the SOA has successfully developed an alternative approach for certain types of research projects, which complements—not replaces—the current typical research approach.

Focusing initially on research relating to Canadian employer-sponsored retirement plans, we have identified the need for a robust ongoing database, model and research team that will be able to analyze the impact on Canadian retirement plans of a variety of influences, such as changes in regulations, demographics and economic conditions. This will enable us to act more quickly in conducting certain types of applied research, using a consistent approach, database and team. Development of this new research capability in Canada will leverage the CIA's expertise in Canadian pension issues and priorities, the SOA's experience in launching a similar research initiative in the United States, and the SOA's financial resources to fund this initiative.

These examples illustrate how the CIA and SOA work together effectively to collaborate on certain types of research projects. In these particular initiatives, the SOA offers expertise, staff resources, and partial or full funding. The CIA provides Canadian expertise and resources, as well as connections with key Canadian stakeholders through its government relations and advocacy role for the actuarial profession in Canada. The CIA also ensures appropriate documents are translated for French-speaking members. In addition, the CIA will take the lead on distributing collaborative research results in the most impactful and useful manner in Canada, to serve Canadians and to promote the actuarial profession.

New research ideas are always welcome, including suggestions for any jointly sponsored actuarial research projects that would serve Canadian actuaries and the public. A

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Dave Dickson, FCIA, is retired. He can be reached at *DicksonDave@hotmail.com.*

Ian Genno, FSA, FCIA, CERA, is director—Actuarial Division at the Office of the Superintendent of Financial Institutions, Government of Canada. He can be reached at *ian.genno@osfi-bsif.gc.ca.*

INDUSTRY-WIDE REPORT ANALYZES POST-LEVEL TERM LAPSE AND MORTALITY EXPERIENCE

BY DEREK KUEKER

TO EXPLORE the complex interaction between product design and policyholder behavior, RGA and the Society of Actuaries (SOA) have developed the 2014 industry-wide "Report on the Lapse and Mortality of Post-Level Premium Period Term Plans." This study represents a dramatic increase in the volume of data compared to the 2010 report. Comparisons were provided against the prior study and assumption survey, and new methodologies were used to illustrate emerging experience. This article provides a very brief introduction to the 2014 experience study. Interested readers are encouraged to view the full report on the SOA website.

ANALYSIS OF SHOCK LAPSE RATE EXPERIENCE

Shock lapse rates vary by a number of factors—including premium jump, issue age and face amount—and are analyzed in great detail in the final report. As expected, premium jump is a primary driver of the shock lapse at the end of the level period. A new addition to the study was analysis of the ratio of the secondary shock lapse rate to the initial shock lapse rate. A consistent ratio was typically observed between the lapse rates for these durations for nearly all premium jump levels. This relationship is a critical component in setting lapse assumptions since the mix of business by premium jump ratio changes significantly before and after the initial shock lapse.

ANALYSIS OF POST-LEVEL PERIOD MORTALITY DETERIORATION

Mortality deterioration also varies by many policy attributes and is closely tied to the magnitude of the shock lapse rate. Mortality deterioration typically jumps in the first duration of the post-level period and grades down by duration thereafter. A key component to mortality deterioration in the first duration of the post-level period is the impact of the grace period, which is studied in greater detail in the 2014 report. For 10-year term business, a monthly experience study was created in order to quantify the impact of the grace period, which provides "free" insurance to those who would have typically lapsed otherwise. This study illustrated significantly worse mortality during the first two to three months of duration 11 compared to the remaining months.

PROPOSED GENERALIZED LINEAR MODEL OF SHOCK LAPSE RATES

To complement the traditional experience analysis, two multivariate lapse rate models were developed to help explain the 10-year term duration 10 shock lapse rate. These models provide greater insight into the true drivers of the shock lapse experience. The first model included issue age, risk class, face amount and premium mode while the second model also included premium jump ratio.

Issue age and face amount, which are correlated with premium jump, were the primary drivers of shock lapse in the first model. In the second model, while issue age was still a significant driver, premium jump was the key variable.

SPECIAL THANKS

We want to thank all contributing companies, the SOA, the SOA staff, and the members of the project oversight group for their contribution to this research project. Without their involvement, a research project such as this would not be possible. A

To read the complete 2014 post-level term lapse and mortality report, visit *www.soa.org/Research/Experience-Study/Ind-Life/Persistency/research-2014-post-level-shock.aspx.*

Derek Kueker, FSA, is an actuary, working in U.S. Experience Studies, Global Research and Development at RGA Reinsurance Company. He can be reached at *dkueker@rgare.com.*

E-COURSES: GROWING YOUR KNOWLEDGE

THE SOA IS PROUD to offer 20 e-courses worth more than a combined 80.00 continuing professional development (CPD) credits. E-course topics range from professionalism and communication to social insurance and enterprise risk management, and can be completed in as little as two hours. Whether you're changing fields, in need of some refreshers or looking to improve your communication skills, get the knowledge you desire by registering for an e-course today. See our full listing at *www.soa.org/ecourses.*

FUNDAMENTALS OF ACTUARIAL PRACTICE (FAP)

This e-course is set in the context of the control cycle. It encompasses real-world applications and uses examples to demonstrate actuarial principles and practices. You will also have opportunities to apply these principles and techniques in traditional and nontraditional actuarial practice areas. With the fundamentals in your toolkit, you will be better prepared to apply your learning to new areas of practice that may emerge during the course of your actuarial career.

HEALTH FOUNDATIONS

The Health Foundations e-course discusses the health care system at a micro level. It begins with an exploration of health care terminology and coding. The module moves on to discuss sources of data with regard to medical treatments and claims experience. The next step is to learn about the administrative systems that bring the data sources together. The module ends with examples illustrating how these elements combine to help provide solutions to actuarial problems.

GOOD RESEARCH READS

COMPLETED RESEARCH STUDIES

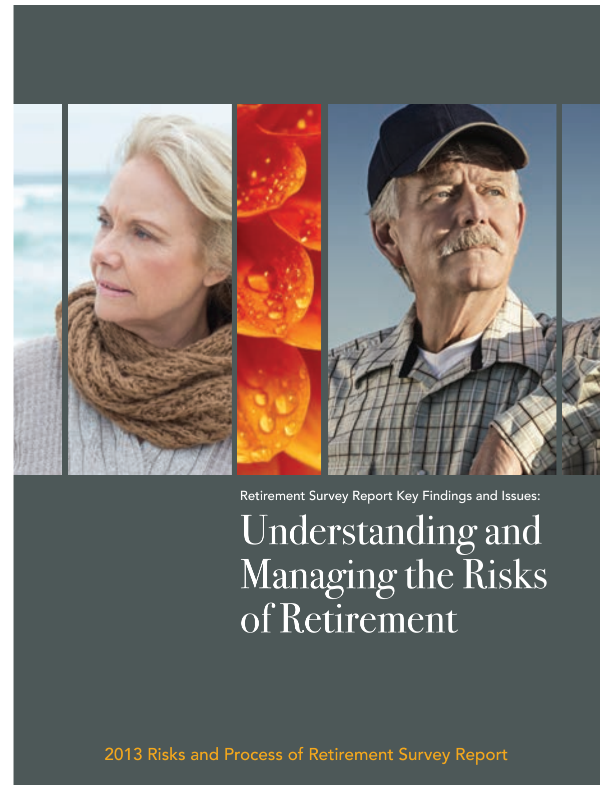
The Society of Actuaries (SOA) produces innovative and valuable research. Find a variety of experience studies and research projects by industry. To view a complete listing, visit *SOA.org/Research* and click on Completed Research Studies.

IASB INSURANCE CONTRACTS EARNINGS EMERGENCE STUDY NOW ON SOA WEBSITE

Sponsored by the SOA's Financial Reporting Section, the IASB Insurance Contracts Earnings Emergence study was recently published on the SOA website. This research was performed by Ernst & Young LLP and analyzes the impact of the proposals in the International Accounting Standards Board's (IASB's) Re-Exposure draft, Insurance Contracts, issued in June 2013 (IASB ED). It illustrates differences in income emergence for new business projections between current U.S. GAAP and the proposed standard for a sample of 12 products. Additionally, it shows the impact on income emergence of various sensitivity tests to investigate the impact of stressed economic and demographic scenarios; various interpretations of aspects of the proposed guidance; and several key elements of the proposed guidance from the June 2013 Exposure Draft issued by the Financial Accounting Standards Board.

2013 RETIREMENT RISK SURVEY

The online survey of retirees and pre-retirees from ages 45 to 80 provides a glimpse into individuals' financial approaches to retirement and it identifies gaps in retirement preparations. The issues of most concern for retirees include inflation, paying for health care and the risk of depleting savings. Every two years since 2001, retirees and pre-retirees are surveyed and the results are consistently referenced in a variety of mainstream media and academic publications, including this year.



NEW REPORT: ASSESSING HIGH-RISK SCENARIOS BY FULL-RANGE TAIL DEPENDENCE COPULAS

In this report, the authors, Lei Hua and Michelle Xia, study how a full-range tail dependence copula would be useful in assessing tail risks in a regression setting. As part of this effort, the researchers utilized a data set from the Medical Expenditure Panel Survey of the United States. The empirical analysis suggests that the regression model with the copula described in the report improves the assessment of high-risk scenarios, especially for aggregated dependent risks. This report continues the CAS, CIA, SOA Joint Risk Management Section's mission to promote cutting-edge methodology and knowledge in the risk management arena.

HYBRID PENSIONS: RISK-SHARING ARRANGEMENTS FOR PENSION PLAN SPONSORS AND PARTICIPANTS

Hybrid plans have become increasingly popular as companies seek to reduce their pension risks. Due to the creation of a wide variety of hybrid plans, the author of this report, John Turner, has provided an overview of types of hybrid plans, both developed and proposed, provided in several countries. The paper consists of three sections. The first provides four in-depth case studies of plans in the Netherlands, Sweden, the United States, Canada, Japan and Germany. The second section provides a categorization of hybrid plans, and the third provides a risk index for further categorizing plans. The report also includes an appendix presenting a survey of the types of hybrid pension plans used in a small selection of countries. A

PROFESSIONAL DEVELOPMENT: Your Opportunity to Grow

When is the last time you attended a meeting or seminar, or tuned into a webcast? As an SOA member, there are a number of events you can attend, in person or from your computer. Here are just a few of the upcoming meetings and webcasts coming your way that can help you:

- Stay up to date with current trends in your area of practice,
- Continue to make meaningful contributions to your company, your team and the profession, and
- Develop or fine tune new knowledge and skill areas.

MEETINGS AND SEMINARS

49TH ACTUARIAL RESEARCH CONFERENCE (ARC)
July 13–16
Santa Barbara
This conference is an opportunity for academics and practitioners to meet and discuss actuarial problems and their solutions. Visit ***www.pstat.ucsb.edu/ARC.htm*** to learn more.

UNDERWRITING ISSUES AND INNOVATION SEMINAR
August 3-5
Rosemont, IL
First held in 2013, this seminar is a unique event designed to meet the needs of actuaries, underwriters and other life insurance professionals.

INTERNATIONAL FINANCIAL REPORTING STANDARDS FOR INSURERS
August 11-12
Hong Kong
This seminar is specially designed for international actuaries who are responsible for financial reporting in compliance with International Financial Reporting Standards (IFRS).

VIRTUAL SESSIONS/WEBCASTS

PREDICTIVE MODELING: WORLD'S EYE VIEW AND INSURANCE IMPACT
June 26
The life and annuity business has used models to predict events since its early beginnings. This webcast is an abridged version of three sequential predictive modeling sessions from the 2014 Life & Annuity Symposium.

PROBLEM SOLVING AND EXCEL BEST PRACTICE
July 22
This is the second webcast of the Actuary of Future Section's "Essential Skills for Success" webcast series. Participate in this webcast to learn how to tackle a technical problem using an Excel spreadsheet, such as the process of problem solving using an Excel option-pricing spreadsheet.

READY TO REGISTER?

Visit ***SOA.org/calendar*** for the full complement of meetings, seminars, virtual sessions, webcasts and more. We look forward to hearing from you!