



# THE *future* ACTUARY

A newsletter of the Society of Actuaries/Casualty Actuarial Society

2011 Spring Issue



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## It Takes a Network

*By Corin Chapman*

There are currently approximately 22,000 members of the Society of Actuaries and 5,000 members of the Casualty Actuarial Society. In comparison with the estimated 1.8 million accountants or even 600,000 doctors, the number of actuaries is fairly small in comparison. This lesser number of individuals pursuing an actuarial career is one of the main reasons that many actuaries believe that networking within the profession is so important, often commenting on the fact that they run into the same actuarial counterparts again and again in many different settings throughout their career.

Individuals with shorter tenures within the profession often have difficulty determining the best way to create a network of actuaries interested in similar fields and topics. One of the main opportunities to network with other colleagues is at conferences hosted by many of the national actuarial organizations. However, often employers do not offer the chance to attend these conferences to their younger or non-credentialed actuaries. Without the support of their employers, these conferences can be cost prohibitive to attend. An obvious cost efficient networking alternative for younger actuaries is the internet. There are numerous possible networking sites and message boards for individuals across the nation to post on, however often these sites allow individuals to post anonymously and lack a given focus.

Given the limitations of certain options, below are some possible recommendations for individuals looking to expand their network:

The Society of Actuaries Actuary of the Future Section has launched the Younger Actuaries Network (YAN) to appeal to actuaries just entering the field. The YAN is focused on improving the professional, academic and social development of early career actuaries. To join the YAN, one must be a member of the Actuary of the Future Section. The only associated expenses are the \$25 a year section fees. Their most recent networking event was held in March at the Philadelphia Actuaries' Club. For more information about future events, please reach out to [Sally Chan](#). For more information about the section in general, please check out the [YAN website](#).

Although there are many associations that provide a national network for actuaries, often the regionalized associations provide a greater chance for more consistent

interaction, particularly for younger actuaries. Additionally, the dues and costs of events are usually lower.

The Casualty Actuarial Society (CAS) has an established network of 16 regional affiliates for the United States and Canada, with each sponsoring a variety of reasonably priced meetings and forums. For the breakdown of affiliates, please see the [CAS website](#).

Throughout the country, there are also many cities with actuarial clubs. A few of these clubs are highlighted below:

The [Chicago Actuarial Association](#) has approximately 280 members and hosts a variety of educational meetings as well as social networking events. Events are approximately once a month with the next event being an annual workshop meeting on March 23, 2011. Additionally, the club offers classes for actuarial exam review at varying frequencies and for a fee. The only qualifications to join are that a member must have passed two exams or their equivalent and pay a membership due of \$30 a year.

The [Atlanta Actuarial Club](#) was established to build a community among actuaries within the Atlanta area as well as promote continuing education, mentoring and tutoring. The Atlanta Actuarial Club holds a minimum of two meetings a year. All individuals pursuing a career in actuarial science are invited to attend and currently no dues are charged.

The [Portland Actuarial Club](#) provides continuing education and networking opportunities to individuals across Oregon. Luncheons are hosted once a month, focusing on mostly technical aspects of the profession such as new regulations, laws, and current topics of interest. There is an associated cost of around \$30-\$35 to cover lunch. In addition to luncheons, club members also mentor local high school and college students and host a banquet to honor outstanding students. The only qualifications to join are that a member must have passed one exam and have one year of experience. Currently, no membership dues are charged.

The [Actuaries' Club of Philadelphia](#) currently has over 240 members and was established to provide a place to discuss topics and support projects of interest to the actuarial profession. The Actuaries Club of Philadelphia holds three meetings a year, with the most recent meeting being February 15 at the Union League of Philadelphia. Individuals with at least three exams are invited to apply for membership and dues are \$20 a year.

The [Actuaries' Club of the Southwest](#) includes Texas, Oklahoma, Arkansas, Louisiana, and New Mexico and was founded to foster friendship and promote actuarial science through informal discussions. The Actuaries Club of the Southwest has two meetings on the agenda for 2011 with the next meeting being June 23-24 in Corpus Christi. Individuals with at least three exams and three years of experience are invited to apply for membership and dues are \$25 a year.

The [Actuaries' Club of Boston](#) aims to promote the actuarial profession by encouraging the studies of actuarial matters through discussion and education as well as building a network of actuaries within the area. The club holds two to three meetings a year as well as a meeting with the [Actuaries' Club of Hartford](#) once a year. Meetings are open to all interested individuals living or working in Maine, Massachusetts, New Hampshire, Rhode Island or Vermont. In addition, the club also sponsors exam review classes and an annual mathematics Olympiad contest administered by the Massachusetts Association of Mathematics Leagues (MAML). There are currently no annual dues.

Regionalized actuarial clubs exist across the United States and, as shown, participate in a range of activities and endeavors. For more information on regional actuarial clubs or if you would like your regional actuarial club highlighted in the next issue of *The Future Actuary*, please e-mail [Kathryn Baker](#).

Additionally, once a professional connection has been made, [LinkedIn](#) offers an excellent way to search for individuals and maintain contacts. The "gated-access approach" used by the website, requiring a preexisting relationship or the intervention of a contact for an individual, avoids many of the security issues of other social media outlets. LinkedIn is free to join and can be used to build a contact network as well as search for jobs and research possible companies as employers.

Although it is always hard to make that first step, building a network of actuaries with similar interests can continue to have positive effects throughout your career. Pursuing your local actuarial club, getting involved with a CAS regional affiliate or joining an SOA section geared towards younger actuaries can be an excellent place to start. Good luck!

*Corin Chapman, FSA, MAAA, is State Farm Life/Health Actuarial Analyst with State Farm Insurance in Bloomington, Ill.*



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## Transitioning from an Internship to a Full-Time Position

*How to Leverage a Part-Time Position into a Permanent Opportunity*

*By Terrence Chin*

Congratulations! You have been selected for a summer internship or contract position at the large insurance or consulting company that you have always wanted to work for when you graduate. So how do you stand out in just two to four months, and turn your temporary or contract position into a full-time offer?

### Technical Skills

Young aspiring actuaries are often evaluated and promoted based on technical competence. Early on, actuaries are expected to use and become comfortable with many technical tools, so developing strong technical skills will make it easier to do the job. Understanding the tools used to perform calculations will also help to build a solid foundation of industry knowledge.

One of the best ways that a young actuary can leave a lasting impact during an internship is to create a tool that increases efficiency. Writing a macro in Microsoft Excel to automate a process can save the company's time. Full-time employees rarely have enough free time to work on a side project; part-time employees, on the other hand, can often devote time and energy to learn something new.

Learning VBA (the programming language) and how to create macros is a great investment of time since Microsoft Excel is by far the most widely used program in actuarial firms. If you want to stand out, aim to learn as many new programs as possible, even if the programs are not used industry-wide. Learning a new program will allow you to take on more types of work and further ingrain yourself into the team. Familiarize yourself with the other Microsoft Office programs, such as Word, PowerPoint and Access, and other industry-specific software and programs. Even experienced users of Microsoft Office will encounter new functions for these programs in a workplace setting. Having strong technical skills should be a top priority because it makes you more valuable to the company and can give you an edge above other candidates.

## Make Yourself Invaluable

Take the initiative to ask for work and help with projects all around your team and, depending on the size, your department. This may mean taking on smaller, repetitive and tedious tasks at first and supporting your team in any way.

For example, if you know a team member has a weekly task that is completed every Thursday, offer to take over the task for the duration of your internship. This will give you additional exposure to different aspects of the business and even learn something new.

As cliché as it sounds, strive to go above and beyond with your work, providing added value and additional analysis without being asked. If you are already quite busy, this does not mean you must take on more work, stay late and exceed your responsibilities.

Aim to show your manager and team your enthusiasm, your capability and that you are a vital part of the team. Aim to make your team feel that at the end of your internship, your presence will be missed. Aim to do valuable work.

It is important to remember that there is no easy way to the top; everyone has to pay their dues. Be willing to get your feet wet!

## Seize the Opportunity

Be humble when you initially start working and be ambitious when an opportunity comes your way. During your internship you may be offered a chance to tackle a large project or to deliver a presentation.

This is your chance to shine. As an intern, your performance will be primarily based on the few projects that you are a part of in the small timeframe. Your company should equip you with the tools you need to succeed; all that is required of you is to put in time and hard work. Knowing that you will be evaluated based on your work for a specific project should be a strong motivator.

If you are asked to give a presentation to your team, consider it a chance to demonstrate your communication skills. You are being offered an opportunity to have the team and perhaps a department head sit down and listen to you. If your communication skills need work, consider it as a learning experience. You will be in a comfortable environment with coworkers who will give you valuable advice on how to improve your presentation skills. Soft skills such as communication are extremely important in the actuarial field, as inevitably everyone becomes technically strong.

Finally, seize every opportunity to get a good understanding of the business. Feel free to ask questions and sit down with various coworkers to address any concerns, difficulties, or issues that you might have. Learn why you perform a task, not just how. This will help you with the interview process should you be considered for a full-time position.

Even if you are unable to secure a full-time offer, do not be discouraged. Companies are always looking for young actuaries who are strong technically and can become a vital part of the team. Remember to learn as much as you can when you are in a junior role while you are still afforded the liberty of doing so, because in senior roles you will be expected to apply what you have learned and execute. Anything you learn becomes a part of your skill set that you can take to any position.

The best advice I ever received is that what you get out of an internship is a direct result of what you put into it. I suggest that all aspiring actuaries take that to heart, not just for temporary positions, because passionate employees are always in demand.

*Terrence Chin is a third year actuarial student at the University of Waterloo. He is currently on a co-op term working at Mercer in Toronto. Terrence has previously worked at Manulife Financial and is actively involved with the Actuarial Science Club at the University of Waterloo, serving multiple executive roles including president, treasurer and mentorship coordinator.*



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## Actuaries Advancing Beyond: Greg Leonberger, Marquette Associates

By Wei Zou Ang

*Aspiring actuarial students often find themselves in a particular dilemma when choosing their first careers out of college: insurance or consulting? However one cannot help but ask if there exist opportunities that lie outside the traditional actuarial career paths. Are actuaries only limited to the traditional fields of insurance and consulting for their entire careers?*

*Unbeknownst to most, actuaries are being increasingly sought after by non-traditional employers for their industry-specific expertise and prior actuarial work experiences. This series of interviews will help shed light on non-traditional careers that actuaries have ventured into and how real actuaries have leveraged their unique skill sets to move beyond traditional actuarial career fields.*

Greg Leonberger, FSA, is the director of research with Marquette Associates, a boutique investment consulting firm with over 165 clients and about \$71 billion dollars under advisement. After graduating from the University of Notre Dame with a degree in Mathematics and Economics, Greg spent his initial years with Hewitt Associates as a pension consultant before receiving an MBA from the University of Chicago and joining Marquette Associates. Our dialogue below describes his unique career path and current work at Marquette Associates.

Wei: So, tell me about Marquette Associates.

Greg: Marquette Associates is a boutique investment consulting firm with over 165 clients and about \$71 billion dollars under advisement. Our client base is mostly institutional, comprised mainly of university and hospital endowments, and a broad spectrum of pension plans including public, corporate, and Taft-Hartley. We were founded in 1986 and are a relatively young firm, which means that we have a lot of young hungry people anxious to contribute to the growth of the firm.

Wei: What is your role at Marquette Associates?

Greg: I am the director of research and have two main responsibilities. First of all, I run all of Marquette Associates' asset allocation studies. We developed our own

proprietary asset allocation software that reflects typical actuarial liability inputs such as contributions and benefit payments. We dynamically model all different asset classes including alternative investments. For alternative investments, we are actually able to reflect the illiquid nature of the asset classes by modeling the capital calls and distributions inherent in closed end funds such as Private Equity and Infrastructure. Most asset allocation software programs ignore this critical component of alternative asset classes.

My second responsibility is to coordinate all of the capital markets research at Marquette. Marquette's research is a diverse mix of white papers, market analysis, and topical subjects. Our white papers seek to quantitatively analyze portfolio themes and strategies; for example, our most recent white paper is about stress testing client portfolios during periods of high inflation and how clients can protect their portfolios against the adverse effects of high inflation and / or rising interest rates. Market analysis is broken out by asset class and identifies patterns, themes, and opportunities that can benefit our clients' portfolios. Topical subjects tend to be more qualitative and not as complex; examples include the recent financial reform bill and the Fed's most recent announcement about further quantitative easing. Ultimately, it is my responsibility to coordinate our Investment Committee, Research Team, and senior partners to assemble comprehensive and integrated market themes and analysis that serve both our firm and clients.

Wei: How has your actuarial background helped you?

Greg: We have a lot of pension clients, so my nine years of experience working on pension plans while at Hewitt Associates provides me insight on how to design portfolios that can help clients accomplish their investment goals while keeping plan liabilities in mind. I have a fairly good feel for the liability side of the equation and understand what triggers would cause a change in its pension liability and how pension liabilities would react in different interest rate scenarios, which is especially useful given the new PPA (Pension Protection Act) regulations.

My experience at Hewitt also helped me to develop organization, project/people management, and effective communication skills. All those intangibles that you pick up working at a large firm can truly add value to a smaller firm that might not have an infrastructure as established as a larger firm.

Most importantly, the approach to analysis and problem solving that is ingrained in all actuaries through the exam and career progression provides an outstanding foundation for assembling capital markets research. Our white papers incorporate rigorous data analysis and interpretation; without an actuarial background, designing the project and modeling would be much more difficult if I had not spent the first nine years of my career doing that on a daily basis.

Wei: How did your career path lead you to Marquette Associates?

Greg: I was a Math and Economics major at the University of Notre Dame, which didn't have an actuarial science program at that time. I didn't know anything about

actuarial science, but learned about it through a presentation by CIGNA during my junior year and thought being an actuary would be a great way for me to leverage my math and economics degrees. I interned at CIGNA that summer and had a great experience there. However, I decided to move into consulting after graduation and joined Hewitt as a pension consultant where I worked for nine years. After finishing all my actuarial exams, I was slightly frustrated at my lack of a general business background and remembered how much I enjoyed the material for Course 6, which was the Investments exam, so I decided to get my MBA from The University of Chicago Booth School of Business concentrating in analytic finance. Halfway through my MBA program, I realized that I really wanted to be on the other side of the pension table, working with pension investments rather than the liabilities. I knew that I had a very good background for the switch given my experience in pension consulting and MBA concentration, so it then became an issue of finding the right opportunity. I was fortunate enough to land this position at Marquette Associates as the director of research and have since really enjoyed the chance to leverage my pension experience at Hewitt and academic background in quantitative finance. It has been a great transition from pension consulting to investment consulting.

Wei: What do you like best about your job?

Greg: Well first of all, I love the diversity of my responsibilities at Marquette Associates. I mentioned that I run the asset allocation studies and economic research at the firm, but I am also involved with a variety of other business strategy functions within the company, such as pitching business to new clients, explaining our asset allocation studies to clients, and even revamping our corporate website. But if I had to pick the one thing I like best, it would be that the position is a great balance between my past as an actuarial consultant and my MBA education.

Wei: On the flip side, what are the challenges of your job?

Greg: Having enough time to do everything we want to do in research is challenging for a smaller company given our limited resources. There are a lot of bright people at the firm and a lot of great ideas and topics to dive into, but at the end of the day, we only have six full time associates on our research staff and there are only so many hours in a day. You have more resources at your disposal at a larger firm, but you really have to prioritize what you want to achieve at a smaller firm.

However, I believe that working at a smaller company also gives its people a larger voice and truly empowers them. When Marquette recruited me for this position to grow their research department, they essentially handed me the keys and let me run with it. The opportunity to play such a big role within the company was one of the key attractions for me to work at Marquette Associates.

Wei: What is a normal day like for you?

Greg: Every morning I get an e-mail from the CFA Institute highlighting the major financial events of the previous day, so I am aware of what happened overnight and what to expect each day across the different financial markets of the world. I'll spend

15–30 minutes reading the different articles. After scrolling through that, I will usually spend the rest of the morning working through any open asset allocation studies for our clients. My afternoons are spent working on white papers, which includes a broad array of activities such as data collection/analysis, writing, editing, and collaboration with other research associates. However, it is not typical to have a normal day, as the nature of consulting typically means that client issues can quickly alter the plan for any given day!

Wei: Where do you see the actuarial profession moving forward?

Greg: I feel there will be an increased demand for health care actuaries as the U.S. demographic continues to age and retire, and there will be an increased focus on how we will be paying for those health care costs. I also think that actuaries will become increasingly prominent within the investment field as liability-driven investments gain traction with pension plans.

Wei: If you had one piece of advice for recent college graduates, what would it be?

Greg: Well, I have two if that's ok. This speaks more towards students who didn't graduate from actuarial science programs: don't feel intimidated by your first actuarial job. Have confidence in yourself in excelling in your work and passing your exams, even if you are going against people who have graduated from an actuarial science program or are older than you.

Secondly, take your career seriously from the day you start. Be sure to do good work, be involved in as many clients and as many projects as you can, truly take an interest in your work and ask lots of questions so you can completely understand what you are doing and how it fits into the big picture. Looking back at my career, this is something I wish I did more of earlier on. Choose a profession you really want to do and really go all in, invest 100 percent into the day-to-day processes of your job as well as the exam progress.



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Michael Trenk, FSA, is a co-founder and chief operating officer of Alva Capital, a long/short equity hedge fund based in New York City. After graduating from University of Pennsylvania with an actuarial science degree, Mr. Trenk spent his initial years with MetLife before joining a variety of financial services firms and eventually founding Alva Capital. Our dialogue below describes his unique career path and current work at Alva Capital.

Wei: So, tell me about Alva Capital.

Michael: Alva Capital Fund is a start-up hedge fund deploying a strategy of long/short U.S. equities. Using a combination of proprietary quantitative models and human judgment, we evaluate a broad universe of stocks trading on U.S. exchanges, holding long positions in those expected to appreciate and short positions in those expected to depreciate. Our objective is to generate positive absolute returns with low volatility, uncorrelated to the general stock market and other asset classes.

Wei: How did you start Alva Capital?

Michael: I always aspired to be a great American entrepreneur, but was too practical to chase such a fanciful dream. As a financial professional with family to support, a secure job was much more responsible. How could I personally compete

against major firms? And why try to compete if they offered such good jobs? I put the dream aside, settling into jobs at an insurance company followed by a few investment banks. The work was interesting and the pay was quite good. I considered my career a success.

Things changed suddenly in 2009. The Great Recession caused most major investment banks to end or deeply curtail their proprietary trading and hedge fund derivatives groups. Banks were no longer reliable, deep-pocketed employers willing to take risks. It was time to move on.

As my job search dragged, I reconsidered entrepreneurship. At this point in my career, it seemed to make more sense. Opportunity costs were lower. My years of experience provided skills, credibility and some capital upon which a business could be built. The widespread layoffs in finance made it easier to find partners willing to give it a try.

One day, I reconnected with an ex-colleague from years ago, an investment bank proprietary equity trader with an excellent track record. I suggested that we consider starting a hedge fund together, pointing out that we could pool our compatible yet complimentary skill sets, capital and network of contacts.

After completing a feasibility study, we thought the business could work, cognizant that there are no sure things in start-ups. We projected development time of at least several years with substantial costs, but were intrigued by the opportunity to take control of our careers and the possibility, albeit remote, of becoming great American entrepreneurs.

We opened an office in New York City and have since added a third member. We plan to start trading in the spring of 2011.

As the business develops, I am feeling more optimistic, although still shy to call it a success in this early phase. For inspiration, I look to the innovator Thomas Edison for whom the company is named, and the economist Joseph Schumpeter.

Wei: What was your career path leading up to Alva Capital?

Michael: *University of Pennsylvania*: BA mathematics; BSE Actuarial Science Wharton School.

*Metropolitan Life* 4+ years: Actuarial student, rotating through several areas and completing the FSA.

*Morgan Stanley* 7+ years: For several years, I worked with pension plan sponsors and insurance companies in consultative sales relationships advising on strategic asset allocation. It was an interesting opportunity to implement asset/liability theories in the capital markets at a time when investment decisions did not customarily include a rigorous analysis of the liabilities. Later, I joined the quantitative fixed income research group, supporting the over-the-counter interest-rate swaps and options desks.

*National Westminster Bank* 5+ years: (NatWest has since been acquired by the Royal Bank of Scotland.) I worked as a structured derivative products generalist, doing deals across several markets including asset-backed securities, foreign exchange and high-yield corporate bonds. Later, the group began offering structured products and other derivative solutions to hedge fund clients, tapping into a nascent market.

*JPMorgan Chase* 2000-2005: I worked on structured credit products initially and soon after joined an effort to develop a new hedge fund derivatives products business. This business covered funds of hedge funds and their investors to provide principal protection, financing and options products. The market grew rapidly.

*Natixis Capital Markets* 2005-2009: A large French bank, originally Caisse des Depots et Consignations (CDC). I traded structured hedge fund derivatives. The market grew, reached saturation and then imploded during 2008. In 2009, the group was wound down.

Wei: How has an actuarial background helped you with your current job?

Michael: In many ways. The actuarial background taught me techniques, such as how to value complex securities and manage risk, general knowledge about insurance companies, pension funds, and asset management, and basics such as study discipline, technical and interpersonal skills.

I don't use much of the specific material I studied at the beginning, but that's OK. The point was to get a start someplace in business and evolve with the markets.

Wei: What drew you to actuarial science in the first place?

Michael: I was interested in mathematics from a very young age and became interested in business as a teenager. Actuarial science was a way to exploit a competitive advantage in business by becoming a "mathematical businessman." What sealed the deal for me was the availability of good jobs that paid automatic raises for passing exams.

Wei: What is involved in starting a hedge fund?

Michael: There's no generic answer as each hedge fund has its own story. Ours start with a product which is the portfolio management skill of my colleagues George Koshy and Jeff Reback, who both have successful long-term track records on Deutsche Bank's propriety desk. Building on this, we needed infrastructure to facilitate operations. That included renting office space, buying computers, subscribing to data sources and procuring software to perform research, analysis, trading, accounting, back-up and other functions. We engaged a law firm to form the entities that make up our company group and to draft documents that enforce the operating agreements between the entities and members. Later there will be fund offering and subscription documents. We engaged an accounting firm to perform audit and tax functions. We chose a prime brokerage firm. We are choosing an administration firm. We are talking with firms who perform marketing functions, including development of materials and a

website. Once that is in place, we will develop a marketing plan to target and connect with investors. The members are always on the lookout for potential investors, since raising assets is the lifeblood of a start-up firm. Once we are operational, there will be more to do, such as analyzing performance, investor relations, publicity, and compliance. I'm probably forgetting a many items, but let's leave it at this for now.

Wei: What do you like most about your job?

Michael: I like the feeling of creating something from nothing. I like the challenge. I enjoy working on a tight-knit team. I like the independence. I like to keep sharp by learning new things. I want to give investors the best possible results. I like to pursue the dream.

Wei: What is the biggest challenge at this point of Alva Capital?

Michael: Our biggest challenge is completing simultaneous projects with our limited staff. Larger firms provide support staff to take care of many issues, which we cannot yet afford. This forces us to compromise somewhere. Generally we will compromise on speed or cost, but never on quality.

Wei: If you had one piece of advice to give to a college student, what would it be?

Michael: This may sound corny, but I would advise students to form good friendships with their classmates and professors. Although social networking is available at any age, there is something special about a relationship that begins in one's formative years and continues long-term.



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## Actuarial Life Tables as an App?

*By Claire Bilodeau*

As made apparent by Apple's tagline, that there is an app for pretty much everything you can think of! But did you know there was an app that could tell you how many more days you can expect to live?

iDie is a life expectancy calculator. You enter your date of birth and gender. Based on that info, the app tells you what percentage of your life you have already lived and how much longer you can expect to live.

Of course, that is only an expectation. You may turn out to live much longer. Or you might have lived a larger percentage of your life already. As with many things in life, only time will tell.

If you are curious to see for yourself, go ahead and download the (free!) app. If you are curious but prefer to figure out your life expectancy by yourself, from the same table that the app is based on, you will need to find the United States Social Security Administration's Actuarial Life Table from 2004 (which, I hate to admit, I have not been able to find online; I did find the one for 2006 though).

Depending on how far along you are in your studies and exams, you might have seen life tables already. If so, you also know that the table used to build iDie is far from unique! What you may not know however is how life tables are constructed. After all, it has been a while since that topic has been retired from preliminary exams.

I will take the United States Social Security Administration's Period Life Table from 2006 as an example to give some of the basics. However, I will not present exactly how that table is constructed in the sense that I will only briefly present of the issues affecting the data and otherwise assume that all data that may be needed to build the table are both available and reliable.

To start off, you need data and the data you collect depends on the planned use of your life table. If the life table is to be used to value pension plans, data from plan participants and beneficiaries are needed. For the Period Life Table under consideration, we need data for the United States for calendar year 2006.

A life table is basically a series of probabilities of deaths, one at each integral age.

The probability of dying between ages  $x$  and  $x + 1$  is equal to the number of people expected to die between those ages divided by the number of people alive at age  $x$ .

For the numerator, we need to find out how many people died between those ages in 2006, based on death certificates. That requires all deaths to be reported. Also, the age at death needs to be accurate.

For the denominator, we use the number of people between the ages of  $x$  and  $x + 1$  on July 1, 2006. That is based on census data, which has its own issues in terms of undercount and misclassification. Besides, while deaths are reported on a continuous basis, censuses are not held every year.

Dividing the numerator by the denominator does not give a probability of death, but a central death rate that can be converted to a probability of death. (That requires an assumption for fractional ages.)

Now that you have a (admittedly very) rough idea of how the table on which the iDie app is based was built, how relevant do you feel is the information it provides? If you have heard anything about mortality improvement, you are probably skeptical.

Period life tables are based on a single year or a few years of observation, and thus include people born at different times. Using such a table to calculate one's life expectancy is based on the implicit assumption that probabilities of death will be the same in the years to come as they were observed to be in that period.

Scales are developed to allow for the evolution of those probabilities over time. How are such scales created, might you ask? They require many period life tables, so you can compare the mortality at different times. In broad terms, you try to infer how mortality will evolve in the future from how it has changed in the past.

Even if iDie may not be based on the latest table, ignore mortality improvement and, for some of the readership, assume a country that is not their own, it still conveys an important message: life is finite! And unlike other apps out there, it is not so consuming and entertaining and addictive that you end up feeling like you have been wasting part of your life using it!

*Claire Bilodeau, ASA, PhD, is an associate professor at Université Laval, École D'Actuariat in Quebec.*



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2011 Spring Issue



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## CAS/SOA Education Updates

Pathway Changes for the SOA's CERA and FSA

On Monday, March 7, the Society of Actuaries' (SOA) Board of Directors approved exciting enhancements for the pathway to the SOA's CERA (Chartered Enterprise Risk Analyst) credential and moved to expand enterprise risk management (ERM) learning opportunities in all tracks for candidates pursuing fellowship. [Details on the changes](#) are now available on the SOA website.

Waiver Approved for CAS Online Course 1

At its March 2011 meeting, the Casualty Actuarial Society's Board of Directors approved a waiver for CAS Online Course 1, Risk Management and Insurance Operations, to those who have the Chartered Property Casualty Underwriter (CPCU) designation. For additional information, see the [CAS website](#) or contact the [CAS Member Resource Center](#).



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## Support Financial Literacy Month This April

High school doesn't seem that long ago, does it? Consider how beneficial it would have been to have had a financial literacy curriculum as part of your education. Hundreds of high school teachers are trying to do just that for their students right now and are waiting for donated classroom sets of the Foundation's *Building Your Future* curriculum to make it possible.

Turn this possibility into a reality during Financial Literacy Month this April by donating a classroom set of materials to one or more teachers on the Foundation's waiting list. You can also sponsor your alma mater or a local school with a classroom set—*any high school student can benefit from this curriculum.*

*Building Your Future* gives teens a lifetime of sound personal financial and money management skills, covering topics such as credit cards, loans, investment risk and diversification, and managing bank accounts. The Foundation developed *Building Your Future* to reach these individuals before they face the challenges of life on their own and to enable them to make smart financial decisions today and in the future.

THE THIRST REMAINS for teachers during Financial Literacy Month. View the list of schools on the Foundation's [waiting list](#) and donate your classroom set of materials today.

### Searching for Students Deserving of a Foundation Scholarship

Last year The Actuarial Foundation awarded college scholarships to 39 students who are pursuing careers in the actuarial profession. It's now 2011 and the Foundation is looking for the best and brightest students to apply for any of its four scholarships:

- Actuarial Diversity Scholarship,
- Caribbean Actuarial Scholarship,
- John Culver Woody Scholarship, and the
- *Actuary of Tomorrow*—Stuart A. Robertson Memorial Scholarship.

If you are interested in any of the Foundation's scholarship opportunities—*or if you know someone who would be*—[visit the Foundation website](#) for eligibility, deadlines, and to apply.

