



## loveactuary

Nicole Belmonte

**A**bout six years ago I was a freshman in college, and all I knew about my future career was that I wanted it to involve mathematics. Soon a professor told me about a career path I'd never heard of before: the actuarial profession. Actuaries seemed to have everything I was looking for—a job based in math and statistics, exceptionally high job satisfaction, prestige within the field with paychecks to match, and regular work hours. I was sold. The standard avenue to receiving actuarial credentials is a series of exams, and so I decided to get that process started early. My sophomore year, I sat for my first exam and passed, and that marked my official decision to strive for an actuarial career.

The next exam I sat for, I was not so lucky. From that failing grade I learned

a couple of important lessons: these exams were going to require serious time and effort, and I would need to use all available materials to help me get through them. The exam I failed was on probability, and since I had taken some probability classes, I sat for it with virtually no extra studying. I never had to study very hard for math tests, but actuarial exams are on an entirely different level. I've since learned that the generally accepted rule is that each hour of the exam requires 100 hours of studying. The shortest exam is two-and-a-half hours long; the rest are up to four hours. For property casualty insurance there are nine exams. You are number people, so I don't have to tell you what an undertaking this is. It's said that becoming an actuarial fellow is comparable to earning a doctorate.

With a workload like that, organizing my time and sticking to a plan has been crucial. I've had the most success when I've created a study schedule and started on the material about three months before the exam. Some people plan out the number of hours per week they want to put in; others break it down to the day. I've found the more detailed my schedule, the more likely I am to stick to it. With a weekly goal, it's easy to keep putting off studying day by day as other plans arise. It's amazing how productive I can be in other aspects of my life when I should be studying—my house is clean, my laundry is done, my meals are prepared in advance. A daily schedule makes it a little harder to procrastinate.

The minimal preparation I did for the failed exam was all from one textbook.

There are multiple resources available to people studying for actuarial exams—particularly the first few—and it was definitely a mistake not to take advantage of them. I was fortunate in the fact that the Mathematical Sciences Department at Bentley University offered preparatory classes for the first two actuarial exams. Having a professor around who knew the material and could answer my questions was invaluable. The courses also helped keep my studying on pace—I couldn't fall behind if I wanted to keep my grades intact.

After taking the prep course for the probability exam, I not only passed but got the highest grade possible on it. This exam success, combined with some internship experience, eventually led to a full-time offer in an actuarial rotational program at a major insurance company in the fall of my senior year.

During my senior year, I opted to take an independent study course to prepare for the third exam. While this meant I had to teach myself most of the concepts, it freed up my schedule to allow for more study time. It also provided me with a professor to help with the topics I found difficult. It was especially great to have someone around who could relate to what I was going through (we would allocate at least 10 minutes at the start of each meeting to complain to each other about the notation), and with her help I was able to pass my third actuarial exam. Actually, the professor who worked with me on this independent study was the same professor who told me about being an actuary in the first place, so I owe her many thanks for helping me get where I am today.

Landing a job did not come without challenges, of course. The actuarial profession is gaining popularity, so many qualified people are interviewing for positions. Now, I know actuaries

have a bit of a reputation for being, well, dull. I once was told that the definition of an actuary is “someone who is too boring to be an accountant.” Personally, I think even an actuary could come up with a better joke than that.

But times are changing and an actuary has to be more than exceptionally good at math. Interviewers are looking for people with personality—people who can not only do the math but also explain it to coworkers. While I've been asked in interviews what I would consider when deciding whether to increase rates in a state, I've also been asked how I would pitch that idea to my CEO. I've had to give writing samples. One interviewer actually asked, “If you were a Harry

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Potter character, who would you be and why?” Actuaries today are expected to be very well-rounded people, and we have to be able to demonstrate that in a two-hour interview.

Now that I'm working, exams pose different challenges. The material, and therefore the study technique, is very different. The lower-level exams test various mathematical subjects, while the upper-level exams are more focused on the work actuaries do. I'm also required to take two exams each year instead of the one per year I was taking in college. Study time is now in addition to a full-time job, and there aren't professors guiding me along the way—but the lessons I learned in college still hold. I now know to put in the hours and take advantage of any materials I can get my hands on. My job pays for my study guides and

allows some study time at work, and it pays for me to attend courses and seminars offered by actuarial organizations to help prepare for all the exams. There are also dozens of other people studying for exams with me, whereas at

school I was the only one staying in on weekends to study when exam time was approaching. I suppose misery really

does love company, although the reward of passing—in the form of both personal accomplishment and a pay raise—makes the studying much less miserable.

The exams are the only major downside of the career so far. I am working for a company that offers a rotational program for people like me still taking exams, meaning that before I'm assigned a permanent position, I will have three temporary positions in different areas of the company. The most traditional actuarial work involves pricing insurance or setting loss reserves, but my first rotation involved working with a team that monitors a variety of trends, both internal and external to the company. I got a great overview of the industry and saw how actuarial work ties into the business side of things.



One of my ongoing projects was to monitor an indicator of the average model year and MSRP (manufacturer suggested retail price) of vehicles we insure. We looked at trends over time, and our results were used to help project expected premium and losses for the following year. This one metric reflected a variety of things, both specific to our business and about the economy in general. When gas prices soared at the end of 2008, the general public made a shift to compact cars instead of more expensive (higher MSRP) gas guzzlers, so we saw a steep drop in the average value of the indicator. Then, due to the recession, consumers purchased used cars instead of new cars or just held onto their old vehicles longer, and this could be seen clearly in our average model year data. With the “Cash for Clunkers” initiative last year, we saw a spike in the indicator that flattened out when the program ended. It’s been interesting to see things you hear about in the news directly affect our data and to learn how to incorporate those realizations

into financial planning and strategic decisions.

There are so many questions to be answered when determining rates and reserves for insurance companies, and actuaries are called upon to answer many of those questions. We’re expected to understand all different aspects of the industry, from pricing and reserving, to claims settling and marketing, to finance and relevant laws and regulations. Because of this, we are well respected, and significant weight is given to actuarial opinion.

I’ve recently begun my second rotation, where I’m seeing another side of the business and another way to apply my skills. Whereas my first rotation was a monitoring role, this rotation combines monitoring with a more typical actuarial role—pricing insurance—where I can apply what I’ve learned from exams. Once I’ve completed this rotation, there are still many new options for my next role. I could learn reserving, another traditional aspect of the business; or go

to a position in predictive modeling, which just recently emerged in the insurance industry; or take on a role that I don’t even know exists at this point. Down the road, my options are even more open. Many of the upper-level managers in my company come from actuarial backgrounds—even our CEO is an actuary—and outside my company, other actuaries are working in consulting or other financial fields.

The rumors I heard six years ago are true—my budding mathematical career is everything I hoped it would be. ■

**About the author:** *Nicole Belmonte is a senior actuarial analyst at Liberty Mutual Insurance Co. in Boston. She received a degree in mathematics from Bentley University in 2008 and is now working toward her associateship and fellowship with the Casualty Actuarial Society.*

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## Paging Dr. Freud!

Stephen Walk

*I had the most disturbing dream last night. Let me tell you about it...*

I saw a giant QUARTER rolling through my ATTIC. It made a mess there, but then crashed through the window and rolled out onto a FARM, where it knocked over a MULE. The mule picked up an AX and started to chop the quarter into pieces, but he was chased off by a convocation of ravenous EAGLES. They swooped at me, too, but I opened a package of photos and fought off the eagles with the sharp edge of a photo-NEGATIVE. This attracted the attention of a giant BEE that zoomed at me as if it was

about to sting. Instead, the bee took out a stopwatch and a stethoscope and checked my PULSE.

I knocked the bee off my arm with an OAR, and it landed in the middle of a group of coal MINERS who were lined up in a SQUARE formation. From the sky plummeted RUDOLPH the Red-Nosed Reindeer, flattening all of the miners. On Rudolph’s back was Aunt BEE from the *Andy Griffith Show*! She looked very SCARED because she

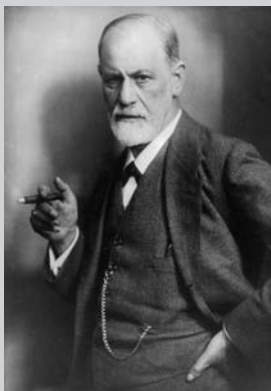


Photo by Max Halberstadt, 1922

Sigmund Freud

and Rudolph had just flown through a flock of mynah birds. Then I saw the MYNAHS do a low flyover just above Aunt Bee’s head and fly out to sea, but the sea looked very weird—it was all light brown and furry!!

I then realized that the FURRY SEA was contained in a giant martini glass. My favorite bartender, OLIVER, reached over to put a giant olive into the glass (that’s why we call him “Oliver”). Then he leaned back and collapsed, exhausted, onto TWO HAYstacks... And then I woke up. ■

*Can someone out there interpret my dream? Does it reveal my future—or some deep, dark secret of my psyche? Help!*

See page 33 for the answer

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