

# *Risky* Business

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Interested in being part of the team in the future?

Risky Business would love to have you as a writer/editor!

Contact the liaison for information on how to join: [rbliason.acsciclub@gmail.com](mailto:rbliason.acsciclub@gmail.com)

# Exam Preparation

Interested in mathematics, but unsure as to what careers a degree in mathematics actually leads to. Interested in exploring the wide expanses of the business world, but afraid of the not-so-great work-life balance of a consultant. These dilemmas plague the mind of a prospective math major, but he is privy to an oracle that is supposedly all-knowing.

“Math major jobs”, he types with a speck of doubt in his mind. “Maybe I should just switch to engineering”, he innocently thinks to himself. Shuffling through unbelievably creative suggestions such as “Physicist” and especially “Mathematician”, he stumbles across “Actuary”, one he has never heard.

It was a match made in heaven! A job with amazing compensation (courtesy of DW Simpson) and the prospect of spending days solving business and client-focused problems with great work hours to boot.

There was just one caveat: Exams. Something that nearly every actuary shares in their dread of, and what is a likely reason that a non-actuary is a non-actuary.

My initial impression of exams was similarly negative, exacerbated by all the online posts of people asking for tips for their third try of a single exam. Combined with the steep costs of registering and purchasing study materials, I was terrified as to what I was getting into after I had decided that this would be the path that I

was leading my math degree into.

That was until I took my first exam, Exam FM, this past December.

The day itself was unremarkably straightforward: formula sheet in the morning, a nervous drive to Prometric in the afternoon, and a quick celebration of my pass in the evening (quick because I had to get back to all the Netflix I was holding off on).



What was more remarkable was the journey that took me to holding that sweet preliminary pass paper that evening. Here's a quick glimpse of it: First-year registration being brutal at UT, I was barely able to get off the waitlist for M329F “Theory of Interest”, and was thrust into a course I did not want (because Probability was supposedly the default starting point for everyone) with a professor no one in the Actuarial Science Club knew about. However, Professor Eric Staron's instruction's role in my journey to passing FM cannot be overstated, and his patient teaching style

filled me with gratitude for UT's strong actuarial program. I also made it a habit to not just solve the weekly assigned homework problems, but solve other hard-looking problems from the same chapter as well. What I found most time-efficient while doing so was to only solve problems that I had no idea how I would approach had they been presented to me in the actual exam. Additionally, whenever I had reached the limit of my go-to sources of daily entertainment (primarily random YouTube videos),

**“I also made it a habit to not just solve the weekly assigned homework problems, but solve other hard-looking problems from the same chapter as well.”**

I got into the habit of reviewing the formulas from all the prior chapters every so often. Not only did it make the formula memorization process efficient, but it also was a quick way to recall how each formula was used, and for what type of problems.

By the time the semester was over, my content knowledge was mostly complete, but my specific exam-taking skills needed some polish-

ing, which is where Coaching Actuaries came in. A week before my exam date, I purchased their ADAPT practice exams, and that was one of the more hectic weeks of my life. I woke up, did a practice exam, went over the problems I had gotten wrong, and then... I took a second one and repeated the process. Every single day. By the 5th day, I had reached the sweet EL 7 (According to a Coaching Actuaries survey, 90% of people who reach that Earned Level pass their exam). In the last two days of the week, I took custom level 5 exams to not only give myself a confidence boost but also familiarize myself with problems more on the level of the actual exam (based on an online consensus). After this week was over I was prepared, and the results proved so.

And that was the process I used to study for FM, and currently, the process I'm following to study for Exam P (If it ain't broke don't fix it, right?), which I plan on taking in May. I have the fortune of learning with another amazing professor this semester as well (Dr. Nibert). Truly, by surrounding me with these great professors, numerous opportunities, and influential peers, UT has redoubled my desire to be an actuary, and shown me exactly the steps I need to take to turn my dream job into a reality.

- Anshuman Sharda

# Studying Case by Case

Thank you to AT&T for the sponsorship of the Fall 2019 Case Study, and thank you to the Casualty Actuarial Society and Gamma Iota Sigma for sponsoring the Spring 2020 Case Study. Working through these case competitions has proven to be an invaluable experience, a chance to substantially develop my creativity and thought process. This article is based on my personal experiences as a competitive team member.

For me, the first case competition was essential. I had recently transferred to major in mathematics with little exposure to math-related projects. Thankfully, the AT&T case study provided an opportune starting point. Although I did not recognize any of my group members upon meeting them, I was eager to bond with them since this was my first case study. The AT&T competition topic was based on providing health services to its employees which was divided into 3 tasks: Task 1 determined the most significant disorder AT&T should focus on, Task 2 concluded which health program benefited employees the most and should continue to be utilized by the company, and Task 3 decided whether an app that measured the user's heart rate called Happy Heart was "successful" or not (my partner and I had to define "success").

Swamped in an exam week, I unfortunately had to prioritize my midterms over working on the case study for most of the week, adding extra difficulty to this particular competition. Thankfully, my partner and I understood each other's exam week nightmares and persisted in helping one another tackle the challenges of continuing the case study. To our extraordinary teamwork,

we finished our part in time before the presentation day and used our last bit of energy left to rehearse. Our group did not place, but the efforts we put in and the wisdom we gained from it were not wasted. I successfully employed my analytical skills and practiced converting large data into visuals such as charts or tables, which simplistically provided evidence to support our conclusion. While time limited our pair to focus solely on our allotted task, I really wish I had explored how the other tasks utilized their parts of the data to deduct their argument. Since each unique task challenged a different set of skills to complete it, mastering all tasks would have broadened my perspective on designing insurance policies.

The second case competition occurred during exam week as well. This time, I felt calmer and more prepared to dive into the content material. I thought I would somewhat understand how to approach the tasks better, but it turns out that with a different topic, it required new expertise regarding that area. Participants of the CAS study were asked to create a phone warranty pricing model for a company called D-mobile while also addressing business considerations. This case competition was slightly different from the fall case competition since tasks were not separated. So, the group ultimately had to integrate all of our ideas and solutions from each member's delegated responsibilities. Another major difference between the AT&T and CAS competition was data collection. AT&T gave us all the necessary data, so teammates just needed to use the data to perform graphs and analyze trends. However, for CAS,



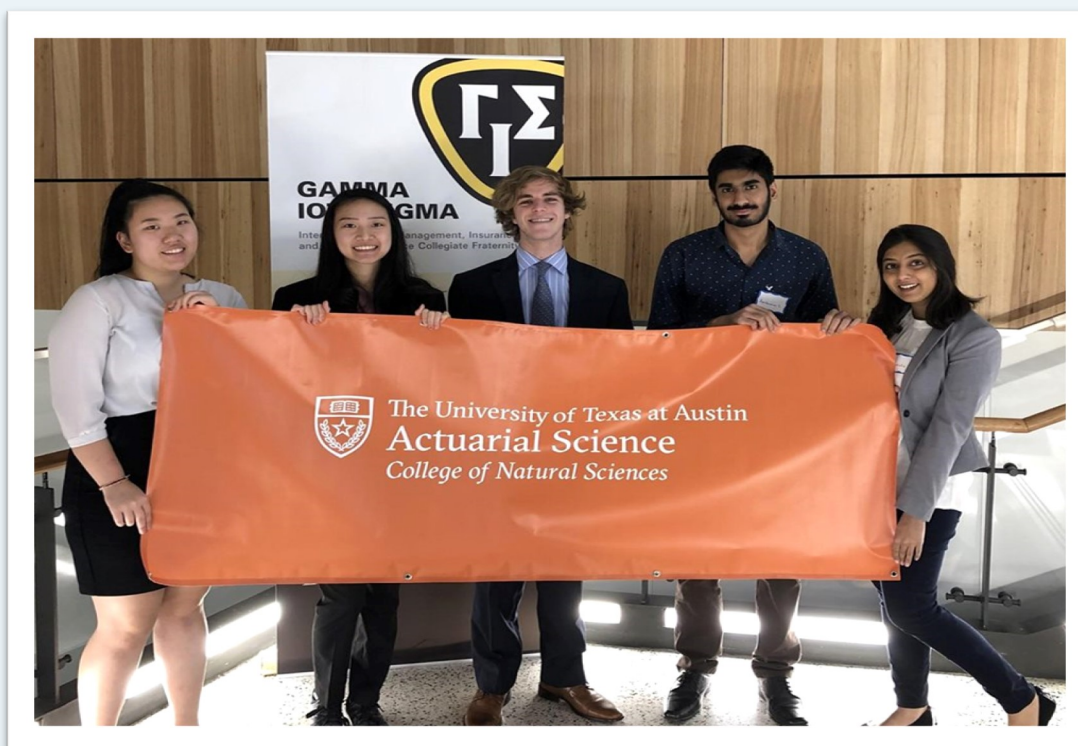
competitors had to gather information from outside sources, which was limited given the niche topic of phone warranty. Compatible teammates made the project smoother since everyone was comfortable sharing various ideas that productively added to the project. When proposals clashed, we addressed both arguments to weigh out which one added greater benefit to our product or by eliminating whichever we could not incorporate given our skill level.

At the conclusion of this competition, I felt gratified just having another fulfilling experience involving team building and practice with actuarial content. Then, a bit of surprise and rewarding encouragement came when I discovered our team earned the title of Honorable Mention! I know this may not be the highest title, yet this feedback suggests an improvement in my performance, which is the most significant result anyone can hope for after each successive competition. This small reward creates the biggest motivation to my pur-

suance of the actuarial profession.

My favorite parts of these competitions were the great friendships given to me and the exposure to real subjects in the actuarial profession. In class, professors equip us with the technical skills, yet case studies are what realistically push us to apply our prior learnings to mathematically derive options and then to evaluate the financial benefits of these solutions, something which must be developed with practical exposure, not lectures. These case study topics about phone warranties and health care will become background knowledge that remains useful in the future, and while this may only be a glance into the world of actuaries, this window of opportunity has provided an abundance of technical insight and knowledge to which I can now formally consider myself as a successfully transferred actuarial student.

- Fornia Van



# Getting Started in the Actuarial Field

Pursuing a career as an actuary is likely not where most people thought they would end up in college, but for the hard workers that have an aptitude in analytical skills and communication, it is a path worth stumbling upon. If you're one of the curious ones who asks people about their jobs and happens to come across an actuary, risk management may be the only thing that comes to mind when it comes to actuaries. If you're not, then it's possible that at this point, this is the first time you've heard of the word "actuary". Alas, among the other STEM careers out there, doctors, engineers, and even computer scientists hold much more fame, yet despite this, among those that are familiar with the career, actuaries command a lot of respect. The goal of this article is to get a taste of whether or not the actuarial field is for you.

- Why would I want to be an actuary?

The actuarial field is fiscally rewarding, and being an actuary is a top ranked job. In particular, this means that the work life balance quality is high, and many opportunities for growth are present. In addition to this, the path to the career is relatively straightforward, and the high job placement rate leaves nothing to complain about. As for the work itself, job difficulty varies greatly from role

to role, but those looking for a challenge, whether that be by technical skills or otherwise, will find themselves satisfied.

- So what do actuaries do?

Actuaries work with data to analyze trends, price products, and consult companies on the optimal decisions to make based on what their goals are. Actuaries work mainly in insurance industries, but with the skills they have, their roles can be more flexible, and they can fit into data science roles, financial firms, and even some positions high level management at top companies. For many of the lower level roles in the actuarial field, work mainly entails working on various projects with a team depending on the company, by doing basic analytics via Excel, writing reports, and studying for further credentials.

- So how do I become an actuary?

Actuaries get credentialed by passing exams and earning credit for various different topics. At a lower level, a couple exams passed is enough to get started, but to pursue full credentials, there is a long list of tests that vary depending on the path you choose. The UT Actuarial Program is recognized by the Society of Actuaries at a level



known as Advanced Curriculum, which basically means that during your time here, you will likely have more than enough content in classes to keep you busy the entire time, when it comes to school work, and material that will help understanding some of the exam material. Besides the classes, there are tons of opportunities to get better acquainted with the field when it comes to networking and the work itself. Case studies, which are hosted once a semester by the program, usually jointly with a company, are a fantastic opportunity for motivated individuals to both learn a lot with a team and compete in creating something great. The faculty and actuarial club at UT are also great resources to get closer with the indus-

try, and everyone that's a part are happy to answer questions or point you in the right direction.

With that said, hopefully you've got a better grasp on the actuarial field and have a better idea whether or not the career path is right for you. The UT Actuarial Science Program webpage has a list of faculty and advisor contacts in the about section, and if you have any further questions in general, you should reach out!

-David Heo

# New Opportunities and Challenges for Actuaries in Cybersecurity

Last year, Intel made to news for security flaws in its computer chips which allowed attackers to extract important data such as passwords and encryption keys from desktops, laptops, and cloud servers. On January 22, 2020, Microsoft announced a breach in its internal customer support database with 250 million entries including emails and IP addresses. As we live in the Information Age and more data are stored online, the businesses' cybersecurity became just as important as their physical security. According to the eighth Emerging Risk Survey by the Society of Actuaries, most risk managers view cybersecurity as the greatest emerging risk. Unfortunately, despite the fact that many businesses acknowledged cyber-attacks as a real risk, most businesses have failed to reduce the risk for several reasons:

- **Withdrawing** from the online activity is not an option as it became essential for most aspects of their daily operations.
- **Reducing** or mitigating the risk with IPS systems, firewalls, systems hardening, DDOS mitigation platforms, endpoint protection and security architecture all make sense. These measures will go some way to limiting the cyber-risk but by no means 100% eliminating it.
- **Transferring** elements of the risk are possible to some extent. They could outsource the protection of their platform to a third party. The platform outsourcing could provide a remedy for a cyber-breach however it is unlikely these liabilities would extend to cover the organization's loss of earnings or reputation (investment attractiveness could be irreparably damaged, as discussed in an earlier post).
- **Transferring** elements of risk with cyber insurance is an option, but one that many believe does not provide adequate protection, yet.
- **Accepting** the risk could be an option. This is what many online businesses will do today (in the absence of a fit-for-purpose cyber insurance regime).

With greater risk in cybersecurity, some insurance companies have found new opportunities to expand their business interest. According to the Cybersecurity and Infrastructure Security Agency (CISA), there is new emerging cybersecurity insurance to cover cyber-related loss such as "costs arising from data destruction and/or theft, extortion demands, hacking, denial of service



attacks, crisis management activity related to data breaches, and legal claims for defamation, fraud, and privacy violations.” Even though the cybersecurity insurance market continues to broaden, there are many exclusions to the insurance policies in the market yet to be covered.

Although the interest in cybersecurity insurance is increasing for both insurers and the insured. There are many challenges that actuaries are facing to come up with an insurance plan that satisfies both sides of the market because cybersecurity insurance is very distinct from any other traditional liability and property insurance. Because cyber proper-

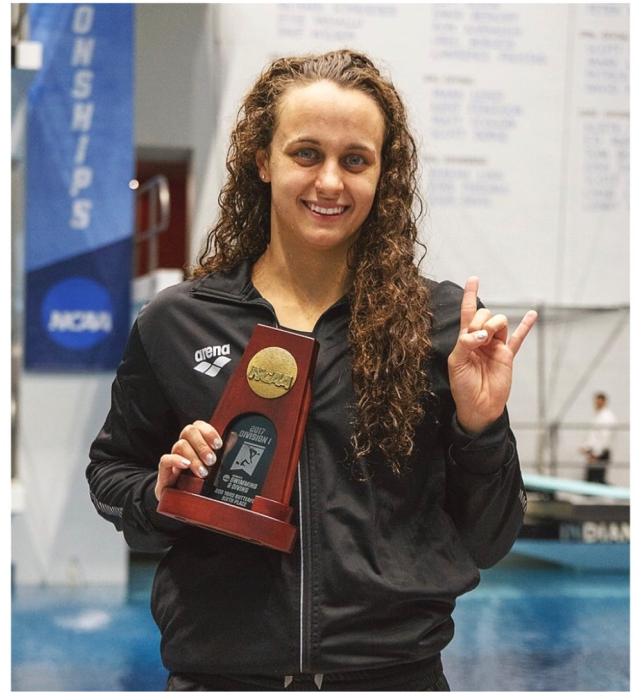
ties are intangible assets, it is very difficult to quantify the exact loss amount and risk to insurance companies. Also, the number of people affected by cyber-related loss can range from as low as one individual to several million people across the world, and it is very hard to determine who and how many people should receive benefits. And these are only a few of many reasons that major insurance companies are reluctant to enter this emerging market. Despite the growing demands and opportunities, the cybersecurity market will remain as the castle in the air until these questions are answered.

- Heewon Huh



# An Interview with Lauren Case

Thoughts and advice from the  
president of Actuarial Science  
Club



Q: Tell me about  
yourself!

My name is Lauren Case, and I am the President of the Actuarial Science Club. I'm from Woodstock, Georgia and I will be graduating this May. This summer, I will be moving to Jacksonville, Florida for a job as an actuarial analyst with Florida Blue. I have spent the past four years as a student-athlete on the Swimming and Diving team here, and I am extremely proud to be a Longhorn.

Q: What made you  
decide to major in  
actuarial science?

I have always really enjoyed math, statistics and problem solving in general. I knew I wanted to major in a field of mathematics, and I chose actuarial science because it has so many applications to business and risk management. I think the field of actuarial science is very exciting. You have the opportunity to apply your mathematics knowledge and business acumen to solve real and meaningful problems in the world. I know that what I have learned throughout my coursework will be extremely applicable in the future.

Q: Can you talk about your experience with passing exams? What have you learned from taking the exams?

The exam process has taught me so much about time management and how to motivate myself. While the exams are difficult, they are very doable once you learn how to study for them. I have passed three exams while in college (P, FM, and IFM), and I think the key to passing all of them was holding myself accountable to study (almost) every day in the weeks leading up to the exams. It was extremely difficult to study for SOA exams while balancing coursework, internships, training as a student-athlete, and allowing time to have fun with friends, but the sacrifices made were definitely worth it.

Q: Can you talk about your experience as a part of ASC?

The Actuarial Science Club has been a big part of college experience. I first joined the club as a freshman, and I hardly knew anything about actuarial science, but I figured that if I showed up to enough meetings I would eventually figure it out. That strategy paid off, as over the years I feel I have learned a tremendous amount about not just actuarial science, but the broader fields of risk management and insurance as well. Even more importantly, I have come to know my classmates very well, which makes our difficult coursework much more enjoyable as I have friends to study with. I was grateful for the opportunity to take the President position this year so that I could give back to the club that has helped me in my career and personal development immensely.

Q: How did you balance school and studies by being a student athlete?

It was definitely challenging at times, but I just focused on staying organized and taking everything one step at a time. With practices at 5:30am, I didn't exactly get to pull all-nighters studying, but I have always been able to get my work done by scheduling the time to do so, and making sacrifices if necessary. I think being a student-athlete has made me a better student; we receive incredible support from our academic staff, and we are constantly motivated to do our best both in our sports and in the classroom.

Q: Can you talk about your interview experiences? Can you give our students some tips?

I really enjoyed the interview process this year. While I was nervous at first, I eventually got very comfortable interviewing; it is really just a chance to have a conversation with someone, and get to showcase what you have learned and how you can be valuable to their firm. My biggest piece of advice is to take advantage of the networking opportunities ASC provides- many of the recruiters you will interview with have visited the club before, and you can get to know them in a more casual environment than in an interview. Additionally, I would advise students to just be honest, and focus on learning as much as you can about the company. In a way, you are also interviewing them to see if the firm would be a good fit for you.

Q: Do you have any advice for our students in the actuarial program?

My biggest piece of advice is to take advantage of the sense of community our program provides. I attribute much of my success in actuarial science to building relationships with my classmates, professors, and even the employers who visit. It is much easier to hold yourself accountable to your coursework, exam studying, and job recruitment when going through it with others. With so many talented students and professors here, there is so much you can learn from those around you.

Interviewed by Sharon Zang



# Fall 2019 Actuarial Scholarship Honor Roll

## Endowed Scholarships

Mark and Pamela Callahan Presidential  
Scholarship in Actuarial Studies

Zhijun Zhang

Bruce Fuller Endowed Presidential  
Scholarship in Actuarial Studies

Bo Yu

Kim Lee Endowed Scholarship in Actuarial  
Studies (Through Texas Exes)

Gina Tilokekarn

John S. Rudd Jr. Scholarships in Actuarial  
Studies

Lauren Case

Eugene Wisdom Memorial Scholarship  
in Actuarial Studies

William Biediger

## Actuarial Program Funded Scholarship

Gina Tilokekarn

## Recurring Scholarships

Actuarial Club of the Southwest

Yidi Guo  
Ji Ho Kim  
Justine Meyer

Milliman Standard of Excellence Actuarial  
Scholarship

Ibrahim Janney

New Era Life Insurance Actuarial  
Scholarships

Grace Chiu  
Binjie Duan  
Shifan Hu

Rudd and Wisdom Actuarial Studies Scholarships

Vijith Govathoti  
Madeline Jakubik  
Victoria Li  
Hunain Naeem  
Myron Yang  
Sharon Zang  
Elena Zhang

Southwest Actuarial Forum

Andy Liu

USAA Life Actuarial Scholarship

Ziqi Li  
Anqi Lou  
Yuwei Wang

USAA Property and Casualty Actuarial Scholarship

Byunghun Han

Texas Department of Insurance Internship/Scholarship

Sharon Zang (Summer 2019)

# Spring 2020 Actuarial Scholarship Honor Roll

## Endowed Scholarships

Actuarial Alumni Endowed Scholarship  
in Actuarial Studies

Grace Chiu  
Duy Nguyen  
Anshuman Sharda

Mark and Pamela Callahan Presidential  
Scholarship in Actuarial Studies

Zhijun Zhang

Jim and Ann Daniel Endowed Scholar-  
ship in Actuarial Studies

Elizabeth Herold  
Myron Yang

James Morris Dial Endowed Scholarship  
in Actuarial Studies

Stefani Barré  
Madeline Jakubik

Bruce Fuller Endowed Presidential  
Scholarship in Actuarial Studies

Bo Yu

Kim Lee Endowed Scholarship in Actu-  
arial Studies (Through Texas Exes)

Gina Tilokekarn

John S. Rudd Jr. Scholarships in Actuari-  
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Elena Zhang

Southwest Actuarial Forum

Andy Liu

USAA Life Actuarial Scholarship

Vijith Govathoti  
Qi Tong Liu

USAA Property and Casualty Actuarial Scholarship

Anqi Lou

Texas Department of Insurance Internship/Scholarship

Justine Meyer  
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