

iCAS director Amy Brener sat down with Andrew Golub, the Chief Analytics Officer at Beecher Carlson. Welcome, Andrew.

Andrew: Thank you, Amy.

Amy: Let us start by your telling me a little bit about what you do and what your company does. I know that you are the managing director and chief analytics officer at Beecher Carlson. What do you do in that role?

Andrew: Our company is a large account retail brokerage. We assist firms in the Fortune 500 and beyond in making decisions related to their risk transfer strategies. The placement, the selection of property casualty insurance products, the associated management of some of the claims activity, is all tied to analytical insights, as is the overall strategy around how to finance risk. A lot of these larger entities have the financial ability to self-insure large portions of the volatility resulting from insurance claims. Because of this, they have decisions to make, that smaller entities with smaller balance sheets do not have. Specifically, they can tailor the amount of insurance protection they buy to their risk appetite. So a lot of the analytics work we conduct on behalf of our clients, and the consultation we provide to our clients, helps them to navigate those waters and make decisions that are optimal, given their corporate frameworks and goals.

Amy: I know that you are a fellow of the Society of Actuaries. Did you take their P&C track, or did you take one of the other tracks, when you were there?

Andrew: I did not take the P&C track. I completed the quantitative finance and investment track, which is heavily focused on evaluating asset liability management frameworks, and the volatility in financial markets. A lot of the professionals within that fellowship specialty area work in variable annuities, pricing, and product design. That is not an area I have focused on as a practitioner, but I do leverage the investment market knowledge quite heavily in my current role.

Amy: Excellent. Tell me a little bit about how being an actuary helps you do your current job, if at all.

Andrew: Well, I think it is really about two things. One is baseline knowledge, a breadth of contextual information that you have been trained on. That allows you to apply technical methods to real world problems, whether those methods are from mathematics, statistics, basic finance, interest theory, or balance sheet management for risk-bearing entities. All of those are skill sets which are useful. So that is one element of it. Having a baseline knowledge that can allow you to be fluent in risk models, decision making around risk, and financial optimization. The second part of being an actuary which is helpful is the critical thinking component. I believe that the actuarial profession, through its required course work, has done a really good job over the years of training people who are not just designed to check a regulatory box. Actuaries do add substantial value to the insurance industry through their interactions with the regulatory system, but they are also able to help solve big problems related to risk. The types of challenging risk-related problems which require you to look across different disciplines to find the best solution, and to implement that solution. So, I would summarize it as skill sets plus problem solving.

Amy: Great, and you are also a CERA? Did you have to study extra for that exam? Or did you prepare for that while you were preparing for an actuary, as part of your normal studies there?

Andrew: It was part of my normal studies. The Society of Actuaries has done an interesting thing in that they have partially embedded the coursework needed for the CERA designation into their fellowship tracks. The one caveat to that is you have to engage in a bit more studying and sit for a more expansive optional exam in place of the required exam for the fellowship. I do not know the exact numbers, but I believe that instead of something like a one and a half hour exam needed for the fellowship, you can take a 3 or 4 hour exam and get credit both for the fellowship and what you need for the CERA designation. That was how I achieved the CERA while pursuing the fellowship.

Amy: You recently completed the examinations that are part of our CSCR, Certified Specialist in Catastrophe Risk designation. Tell me a little bit about what prompted you to take those exams.

Andrew: Catastrophe modeling has been part of my job on some level for most of my career. I began in the underwriting business unit of our company, which had underwriting authority on behalf of carriers, to assess and price risk associated with construction projects. And immediately upon our beginning that business, or founding the company, catastrophe modeling came up. The carrier partners we were doing business with were leveraging tools like RMS and AIR, so it was incumbent upon us to get involved with that overall process, license the software, become astute at using it, etc.

That was the beginning of my career and throughout the progression of my work life, CAT modeling has been involved in my roles at varying levels. So, when this new educational program was launched, it caught my eye because the underpinnings of the mathematical models within the vendor models have historically been somewhat opaque. The term black box has been used, and if you see more modern marketing materials, transparency is something that is espoused as an upside or a competitive advantage for different software products. The reason that is so salient is because for a long-time people have viewed the models as systems which you will generally not have a lot of visibility into.

These courses formed a continuing education program that elucidates some of those inner workings, provides some level of insight into at least where to look, if you want to research the scientific assumptions related to the modeled frequency or severity of CAT events. It was really appealing. You can get materials from the documentation libraries of the vendors, but those documentation libraries are not set up to be optimized for this purpose. Rather than having to organize some sort of educational track myself, having organizations such as iCAS and The Institutes, which I was already familiar with, was great. The program put together clear and accessible educational materials which intersected with a topic that I was interested in. That appealed to me.

Amy: When we developed this credential, we deliberately made it platform-agnostic, for exactly the reason that you are stating. In fact, we had people working on developing the credential from RMS and AIR CoreLogic. So it is clear that the modeling companies also see a value in this and

understand that this is complementary to the training that they do, as opposed to being in competition with it. I appreciated hearing you talk about transparency and that the program increased your ability to unpack what is in the black box because you gained more knowledge about what goes into the models. I'm gratified to hear that because that was one of the aims of the program.

Amy: You would not of course be our typical student for these exams because you had a lot of that knowledge already. The people who work for you and report to you are probably the people who would benefit from these exams. What would you tell someone who works for you, about the value of these exams?

Andrew: I would definitely recommend this to someone who is in a place in their life where they are looking for a continuing education program to dedicate time to. That is always a personal decision. We do not like to bully people into shifting their professional vs. personal life balance. But for someone who is interested in allocating some of their time to studying in the property and casualty analytics field, I would recommend it.

I think that even if you are not in a natural catastrophe focused role, it still provides valuable insights into how to tackle problems. One example would be leveraging the framework and the thought process that the innovators within the catastrophe modeling space took to quantify risk from natural perils like hurricane and earthquake, and using it as a case study to address other problems where there is no historically defined model development path, such as cyber liability. In that case, you have something that shares some properties with natural catastrophes in that there is a low annual probability of an occurrence. But when you do have an occurrence, it can be very severe. There is not a clear-cut actuarial playbook for how to address that, and most of the analytical tools accessible to P&C actuaries are not going to apply well because they rely on large volumes of claims data, which is not necessarily in existence for the most extreme types of cyber losses.

Think through how people were able to figure out an approach, that 40 years ago did not exist, to quantify hurricane exposure for an insurance portfolio. This provides lessons in critical thinking and how to navigate through multi-disciplinary problems and embed conclusions into a consolidated framework for quantifying risk.

This credential provides a lot of value for anyone in the analytical space, working on property casualty problems. But if you are a practitioner who is solely focused on catastrophe modeling, I think it is doubly important to have some source of shared information you can access, even if it is shared with people from competing firms. Something like this credential program has a lot of promise when it comes to serving as that focal point, in my opinion.

Amy: You talk about continuing education, and there will be a continuing education requirement for people to maintain the credential. What kinds of topics would you like to see addressed in future continuing education opportunities, not necessarily opportunities that would result in exams, but workshops and meetings and things like that.

Andrew: One topic that would be valuable would be a more focused subsection of content, or

maybe just an expansion of the topics that were touched on in the syllabus, on how the product that gets delivered to policyholders who are purchasing protection for natural catastrophes gets priced. How the communication between the underwriter and the broker, or the agent who is acting on behalf of the insured, reflects that exposure, and translates that information into the premium which the policyholder sees. I think that would be valuable.

I know in my personal experiences on the job, this is a very salient topic. People want to know why insurance prices for things like hurricane coverage change so dramatically. Is it because the models are getting better over time? Is it that the insurance companies are changing their appetite for the same exposure and the understanding of the risk? Or is it some combination of those two things, plus macroeconomics?

I think that would be a valuable topic for continuing education in a program like this because it takes a lot of the theory and the information on the syllabus and translates it to the end user of the insurance products, which is ultimately the policyholder. Even if the communication gap is narrowing as people gain more insights into the models, there is still a bit of a breakdown when it gets to connecting practitioners to the end consumers of natural catastrophe coverage.

Amy: I wonder if we may need to include that as a requirement for the higher-level credential, the Certified Catastrophe Risk Management Professional (CCRMP), because those are probably the people who are interfacing with the customers more than the people who are pursuing the CSCR. That is an excellent suggestion. Thank you.

I know that you are a little bit familiar also with our Certified Specialist and Predictive Analytics credential, and that you did not undertake that because you basically know that material already. Who would you recommend that credential for, as opposed to the catastrophe one?

Andrew: In my career, I had worked with catastrophe model outputs from the vendors for many years, but had always viewed their underlying methodologies as opaque. If I had to explain with rigor how the software's process of translating exposure data into loss estimates worked, it was challenging. I could articulate basics but did not have as deep of an understanding of the underlying science as I wanted to have.

The predictive modeling topic was sort of the opposite for me. I did a lot of Statistics course work during my undergraduate studies. I pursued a master's degree in statistics with a focus on analytics directly after that. By the time that the predictive modeling designation was launched, based on my academic coursework and my professional experience building predictive models from the ground up, I felt my taking those courses would not provide as much personal benefit or incremental knowledge gains.

Returning to your question, who would I recommend that to? I think I can think of two groups of practitioners. If you are a new insurance analytics professional who does not have practical experience working with insurance data, and you are interested in building predictive models, or if you are in a role where you have to support the building of predictive models, I think it looks

valuable. I would also potentially recommend it to someone who has a traditional actuarial background and a good knowledge of insurance data but has not yet gained really strong familiarity with the statistical underpinnings of calibrating multivariate models, GLMs and so forth. I think those are the two subgroups of practitioners within the P&C analytics space who, based on my knowledge of that program, might benefit materially from it.

Amy: Great. Is there anything that you would like to add to our conversation today, that perhaps I did not touch upon?

Andrew: Just one comment. I am impressed by the amount of work that was put into this program, and I think it is a needed thing. It was even alluded to in some of the course readings that many catastrophe modeling practitioners look at the actuarial profession and say ‘we wish we had a similarly standardized set of best practices, which even people at competing firms can agree with, and a set of baseline educational knowledge points which we would expect practitioners within this field to have mastered’. Whether all of that has been accomplished by this program or not, it is likely too early to say. However, this is definitely a strong move in the right direction from my perspective, for this blossoming field of natural catastrophe modeling, which is already very prevalent and seems as if it will be of increasing importance in the years to come.

Amy: Super. Thank you so much for spending time with me on this.