

# FUTURE FELLOWS

June 2022, Volume 28, No. 2

## Take the Pledge: Becoming an Actuary of the Future

By Jack Richards, CAWG Candidate Representative, and Wes Griffiths, FCAS

**T**he actuarial profession is changing rapidly, fueled by the rise of advanced analytics, technological advancements and volumes of data that we could never have previously dreamed of. As these key influences provide an opportunity to transform our profession, actuaries will be faced with new challenges and will increasingly cross-collaborate with other insurance stakeholders.

Jessica Leong, immediate past president of the CAS, challenged 2021 Annual Meeting attendees to solve a new business problem in the coming year. She noted that the market forces mentioned above challenge actuaries to solve new problems by thinking differently, interacting with new business partners and bringing value to their organizations in ways they haven't done before. Her message was clear: The actuary of the past and the actuary of the future share similar backgrounds, but the actuary of the future must invest in their own skills and development to successfully deliver on these new challenges.

An actuary of the future might focus on equity in insurance, evaluating the impact of race and other protected characteristics in insurance pricing, and accessibility. They will need to deploy increasingly complex predictive analytics that model not only premiums, but also driver behavior, underwriting workflows and customer acquisition metrics. As computing power increases, actuaries will more often leverage stochastic analyses of reserve volatility and other financial analyses not previously feasible. To answer these questions with authority, we must continue to prove our expertise is well-suited to influence the business.

While the solutions to these problems may become increasingly technical, driving the busi-

ness and influencing stakeholders require the actuary to effectively communicate by teaching or story-telling that "paints the picture" of our analyses and of the possibilities that actuaries can uniquely bring to the table.

As a CAS candidate, your journey with the CAS and the profession is just getting started. Through a combination of the credentialing process and on the job experiences, you will begin building your knowledge of the actuarial profession and insurance industry; however, to become the actuary of the future, you must seek out opportunities to challenge yourself, your team and your company.

So, what can you do to become an Actuary of the Future?

**Understand the business and your partners** – Building a robust knowledge of the insurance ecosystem starts with grasping the goals, processes and objectives for each function. Job-shadow underwriters, claims professionals and others to understand their roles as part of the bigger picture. Look for rotations and roles outside of core actuarial pricing and reserving functions and build your industry knowledge by reading industry periodicals or going to a conference outside of the traditional actuarial space (e.g., insurtech). This diversified experience will give you a broader understanding of the business and help you comprehend and influence your business partners.

**Learn to teach, story-tell and influence** – As more actuaries are asked to play a part in cross-functional teams, your role will require you to teach others the core concepts of the actuarial function to influence and persuade them to "buy-in" to your analysis. Listen to oth-

▲ turn to page 4

## Calendar of Events

**Climate Risk Seminar**  
Virtual  
July 19-21, 2022

**Crash Course Seminar**  
IIHS/HLDI Vehicle Research Center  
Charlottesville, Virginia  
August 10-11, 2022

**Casualty Loss Reserve Seminar**  
September 19-21, 2022

**CAS Annual Meeting**  
November 6-9, 2022

Learn More and Register at  
[casact.org/calendar](https://casact.org/calendar)

# The Value of Volunteering

By Holley Rouse, CAWG Candidate Representative

Imagine for a moment that all the volunteers who contribute to the various non-profit and professional organizations you are aware of stopped giving their time to support the organizations. What would happen? Almost all of them would cease to exist, right? Yep! The same is true for our beloved Casualty Actuarial Society. The volunteers who serve on various working groups, grade exams, put together this newsletter and all the other roles in between are the lifeblood that sustains the CAS. As a volunteer, you are so important to our success!

Volunteering is especially important in the self-governed actuarial field. The CAS and other actuarial organizations rely on volunteers for many key functions. The range of volunteer opportunities covers a wide spectrum of topics. These include marketing and communication, publications, finance and investment, admissions, professional education, research, international concerns and governance.

In fall 2021, the Candidate Advisory Working Group (CAWG) included several questions on volunteerism in our Candidate Survey. About 25% of those surveyed thought candidates had to have their FCAS to volunteer, while 41% knew that an ACAS could volunteer but didn't know that a candidate could. However, the truth is that 96% of CAS committees will accept new ACAS volunteers! With 56 committees, task forces and working groups to choose from, there are plenty of options. If you're interested in learning more, check out the new CAS infographic "Volunteer as a New Member!" (<https://bit.ly/3MrFy6c>) or email

[volunteer@casact.org](mailto:volunteer@casact.org).

Of course, we understand that as a candidate, taking exams requires a ton of time and effort. The Candidate Survey revealed that almost 61% of respondents didn't want to volunteer with the CAS before finishing exams. When asked about volunteering after finished taking exams, over 40% had not yet decided. We hope that we can encourage you to dive in and help sustain the long-term success of the CAS. Almost all volunteer options are open to you once you have attained your FCAS, taken a break and are ready to give back to the community.

I have been volunteering as a Candidate Representative in the CAWG since December 2019. Writing articles and blog posts, participating in discussions and subgroups, networking, giving feedback on the new website and, ultimately, being a voice for candidates has been incredibly rewarding. I've learned more about myself and the actuarial field through my time on this working group. We do have some fun, too. During the pandemic, we started having a virtual social "study break" after some of our meetings. CAS CEO Victor Carter-Bey even joined in once! As a candidate who hasn't achieved an ACAS designation, you can also volunteer to write *Future Fellows* blog posts, take surveys, or volunteer with the University Liaisons.

If you're interested in volunteering as a candidate, please check out the options available on the CAS website (<https://www.casact.org/membership/volunteer-cas/volunteering-candidate>). **f**

## ATP Words of the Issue

By Laura Hemmer, FCAS

Hopefully, everyone has seen the CAS Admissions Transformation Plan (ATP), which details CAS plans for the future of admissions. If not, please check out <https://www.casact.org/atp>. The ATP has a wealth of details and milestones on what changes you can expect in the next few years as CAS Admissions evolves, but there's also a lot of words in there that have specific meanings to the CAS. In our ongoing series, we will be highlighting a few terms each issue to make sure *Future Fellows* are as informed as possible about what the ATP really means.

**Domains** – Principal areas of responsibility that actuaries perform.

**Tasks** – What a person performs to be successful within a domain.

**Criticality** – One of the areas that is considered when determining the weight of a topic covered on an exam. Subject matter experts (SMEs) are asked to rate domains and tasks as to the degree to which the inability to understand and perform them would cause harm (physical, emotional, financial) to the people with whom actuaries work.

**Frequency** – One of the areas that is considered when determining the weight of a topic covered on an exam. SMEs are asked to rate how often actuaries work within a domain or perform a task. **f**

# CBT Grading: You've Finished Your Exam ... Now What Happens?

By Laura Hemmer, FCAS

**T**he day is finally here! The day you've been waiting on for four long months. No, I'm not talking about exam day; I'm talking about the day *after* your exam. That blissful day when you wake up and realize that your free time is your own again (at least for a couple of months). No guilt about binging the latest TV show (*Bridgerton*, anyone?), and your friends and family are all happy to see you emerge from your studying cocoon. But, while you're enjoying the time away from studying, there's also that small anxious feeling ... because now you are waiting for your exam result.

A question the CAWG receives a lot is, "What exactly does the exam grading process entail?" And although most candidates are too polite to say it, we know that what people really mean is, "What's taking so long?" With the advent of computer-based testing (CBT) many candidates too have questions on how the process has changed and what candidates can expect going forward. In this article, I will give an overview of what happens after you finish Exams 5 through 9, and what exactly is taking so long.

## Grading commencement

In general, the grading process is much the same as it was before CBT but conducted virtually instead of on paper. Practically, this means that the whole process can start sooner! Months before the exams are administered, graders volunteer through either the CAS Volunteer Survey or through a call for graders. CAS Fellows are eligible to be graders for all CAS exams; CAS Associates are eligible to volunteer to grade Associateship exams provided they are three years removed from taking exams. Prior to the beginning of grading, all graders (even experienced ones) receive training materials on the grading system so that everyone is well-versed in how to grade online and informed of any recent updates to the system.

Before CBT, it took weeks for the paper exams to be received, collated, copied and shipped to graders. Now, grading can begin the day after exams are complete. Each question is assigned to a team of graders, with each grader only able to see the candidate responses for their assigned question(s). To begin, each of the graders independently scores about 15-20% of the responses, using the grading rubric developed during the item-writing process.

## Grading summit

Two weeks after the grading begins is the grading summit. While for recent sittings the summit has been virtual, for the Spring 2022, sitting for the summit will take place in person. The summit is where the graders compare their initial results to see where they agree and disagree. These results give an indication of whether a rubric needs to be adjusted to accommodate solutions or interpretations that, while valid, were not anticipated during item writing. Each grading team also agrees on how to score mistakes that were not contemplated by the original grading rubric. Any rubric adjustments or changes to



scoring are done in consultation with leadership of the Syllabus and Exam Working Group.

Once the rubric is finalized and the grading team has reconciled their initial set of scores, they also review the question to make their recommendation on what score a minimally qualified candidate (MQC) would achieve on the question. The MQC score is originally set by the exam writers, but graders can provide additional insight based on the exam responses they have seen and common errors and misinterpretations that have been made. The leadership of the Syllabus and Exam Working Group then decides whether, and how much, to adjust the MQC score for each question based on the grader input and observations.

## Initial grading completion and reconciliation

After the grading summit, the graders will have an additional 1.5-2 weeks to finish grading and reconciling all the responses. While everyone is aware that candidates are anxious for their results, graders are volunteers with day jobs, too, and it is of the utmost importance that we complete this process rigorously and completely; this time is needed for them to get through the hundreds of candidate responses. After every member of the grading team has graded each response for a question, the graders must then reconcile their scores. This means that the graders discuss any answer where the difference between their scores exceeds a narrow threshold. They must come to an agreement on what the reconciled score should be before moving on to the regrade step.

## The regrade

After reconciliation, the total exam scores for each candidate are compared to the pass mark, which is set by the summing of the MQC scores for each question across the entire exam. Any exam result that is within a certain range of the pass mark is automatically flagged for an additional round of review, which takes an additional week. For every flagged exam, the grading team looks again at each question and must come to full agreement on the exact final score deserved for that answer. You can be sure that the graders are careful with the regrade process; they realize that changing a score even slightly can be the difference in a pass or a fail for that candidate.

## Grievance process

Grievances filed with the CAS/Pearson VUE are carefully reviewed and responded to on an individual basis. The CAS makes sure that each grievance is handled personally and that they are responded to before finalizing the exam results, as some grievances could affect exam scores. For more information on the grievance process, see the [June 2021 Future Fellows](#).

## Results release

Roughly six to eight weeks after the exam, results are released. Hopefully, the steps described above help explain what exactly has been going on during those weeks. The CAS has always aimed to shorten the time needed to grade exams, and CBT is continuing to help us achieve that goal. The bottom line is this: The Society's number one goal is to provide accurate exam results.

It is hard to do (I've been there!), but I highly advise patience while waiting for your exam result. It can be tempting to try to find out results early, perhaps by gaming the system or by figuring out the URL where results will be posted. The CAS waits to post results until they know everything is 100% finalized and correct. Seeking out results early risks seeing incorrect results – and what's worse, if there is some sort of breach the CAS has to spend time rechecking things rather than posting grades. In fact, attempting to access results early is now explicitly banned under the Exam Discipline Policy. Know that the CAS posts the results as soon as is feasible. While you're waiting, take the time to enjoy life before you have to start studying for the next exam. **ff**

# Take the Pledge: Becoming an Actuary of the Future

from page 1

er's perspectives and ask questions before you start to persuade. Be open to admitting you are wrong and incorporate other perspectives into your analysis.

**Adapt to new technologies** – Drive change within your team by exploring innovative technologies that can enhance your analyses or make your processes more efficient. Seek out the next trend and get in front of it – being a pioneer and bringing others along to amplify the impact on your function. When trying out these recent technologies, accept that you will pivot fast and fail often, and learn from those experiences to maximize your impact going forward.

**Learn to fail fast** – Don't be afraid to try new things but recognize quickly when they won't work. Build a culture within your team that values efforts and ideas, even if they eventually don't pan out. This culture encourages team members to try new things without the risk associated with failing. Through trial-and-error and learning fast, you'll be able to ideate and innovate quicker the next time.

These skills will enable you to solve challenges that actuaries will face in the future. Your ability to adapt to new predictive modeling software and articulate the possible inequities in insurance rating plans will help your business partners understand how to build equity and ensure fairness in insurance pricing. Your ability to fail fast will allow you to rapidly ideate on models and analyses that help business partners make decisions, bringing more value to the business quicker.

To become the actuary of the future, start working now on building these skills and deepening your understanding of the broader insurance ecosystem. As you progress through the exams as a candidate, your technical actuarial foundation will be developed, but there is more to being an actuary than this foundation. The differentiators come in different forms and require focus, intention and effort to build. To echo Jessica Leong's challenge to CAS actuaries – Who's ready to solve a new problem for your business and to take the pledge to be an Actuary of the Future? **ff**

# Study Strategies for a New Era

By Bailey Hescoock, ACAS

I hope you all have been enjoying a well-deserved break and have been able to disconnect from exams over the past couple of weeks. While I respect that many of you probably aren't quite ready to start thinking about the next exam, they are unfortunately just around the corner. That is why now is the perfect time for the Candidate Advocate Working Group (CAWG) to share a fresh new set of strategies to help you prepare for a productive sitting. The CAWG has published a number of articles around exam tips and tricks (see links at the end of this article), but I wanted to share a new list specific to passing exams in this new era. Below are a few recommendations I've pooled from several seasoned CBT experts that have helped me immensely.

I'll start with the most obvious recommendation. One of the most common criticisms of taking exams with Pearson VUE Testing centers is the clear differences of their spreadsheet program from our beloved Excel. After practicing problems for hours in a program we are already very familiar with, it is frustrating to deal with a different spreadsheet program, especially on exam day when your nerves are on edge. So, what is the best way to prepare for four hours of navigating this unfamiliar interface? Well, the CAS has provided a full list of known function differences of the various spreadsheet programs and posted them to their website (<https://home.pearsonvue.com/cas>). While knowing the differences is helpful, what is even better is just to **practice with the Pearson VUE Spreadsheet Program**. Unfortunately, we don't yet have entire practice

exams in this program, but the CAS has been working to provide more sample questions. One recommendation is to have practice problems open in Excel on one screen, then work out the answers using the Pearson VUE spreadsheet on your other screen. I tried this out, and let me tell you, it was brilliant. While on exam day I still felt challenged by not having my usual set of keyboard shortcuts, I was at least conditioned to efficiently handle the difference in functionality.

Another less obvious option is to **practice exams in a shorter timeframe**. If you're preparing for a 4-hour exam, practice it in 3½ hours, or better yet, practice it in 3 hours. Prioritize learning to answer questions quickly - this way, if something doesn't go according to plan, you have time to fix it. If you make it through half of your exam before realizing 'f4' doesn't lock your keys, you have time to revisit your completed questions to check your work. If you're like me and the exam day stress makes you forget everything for the first 15 minutes, that's ok because you have time to recover. Perhaps it seems unhelpful to be told "just be faster," but the easiest way to decrease your test taking time is to master flashcards. Every exam has several standard questions requiring you to "share the advantages and disadvantages of abc" or "list the x number of problems with xyz." If you can fly through all these types of flash cards before exam day, then you are likely going to shave off some valuable time during your exam. Granted, this strategy doesn't work for everyone, but it has been great for me and several of my peers. The general premise is to make your practice exams more stressful than exam day - this way exam day feels easy breezy ... or maybe just slightly less intense.

This next one isn't new, but this bit of advice has been revolutionary for me and will be relevant no matter the way the exam is administered - **learn the material so well you can teach it**. I used to think that I was ready for an exam when I could regurgitate all the facts and formulas, but that's only part of what it takes to pass. The exam writers aren't just interested in testing how much we can memorize; they want to see which candidates have a deep understanding of the material. Whether the exam is pencil and paper or CBT, the writers are always trying to create new, thought-provoking questions, which sometimes feels like they're chucking curveballs. So how do you prepare for these questions? Gain that deep understanding so that you anticipate those curve balls before they are thrown. You may think I'm just telling you to learn the material better or to take more study hours, but no. I'm encouraging you to rethink the way you're learning what's on the syllabus. If you are consistently asking "why" and are trying to understand how things work, opposed to just memorizing the concepts, you're going



▲ turn to page 7

# ESG and What It Means for Actuaries

By Dale Porfilio, FCAS, Guest Contributor

**E**nvironmental, social and governance (ESG) values have been at the core of the insurance industry's DNA for decades, but these principles have been more formally structured and institutionalized in the last decade. This has provided actuaries the opportunity to apply our innovation and expertise in new and expanded ways within and outside the insurance industry to help build a more resilient, sustainable and inclusive society.

The virtual 2022 CAS Ratemaking, Product and Modeling Seminar featured a concurrent session focusing on ESG and what it means for actuaries. Victor Bhagat of AM Best presented an overview of ESG and its impact on insurers' financial strength. Andy Tran, ACAS, of Swiss Re America then presented examples of how ESG can be embedded to help shape underwriting and product strategy.

Bhagat opened with a clear definition of ESG and the wide breadth of factors under this broad umbrella:

- Environmental factors relate to resource use, pollution, climate risk, energy use, waste management and other physical environmental challenges and opportunities.
- Social factors relate to how a company interacts with the communities in which it operates and with its suppliers, employees and broader stakeholders.
- Governance factors relate to policies and procedures such as corporate governance, corporate behavior, transparency, board composition and business ethics.

The [United Nations Environment Programme Finance Initiative](#) (UNEP FI) drafted the four [Principles for Sustainable Insurance](#) (PSI). This is the largest collaborative initiative between the U.N. and the insurance industry, with over 140 organizations worldwide adopting the Principles. The Principles serve as a global framework for the insurance industry to address ESG risks and opportunities. In March 2021, AM Best became a signatory of the PSI and adopted the four Principles for Sustainable Insurance listed below.

- Principle 1: We will embed in our decision-making environmental, social and governance issues relevant to our insurance business.
- Principle 2: We will work together with our clients and business partners to raise awareness of environmental, social and governance issues; manage risk; and develop solutions.
- Principle 3: We will work together with governments, regulators and other key stakeholders to promote widespread action across society on environmental, social and governance issues.
- Principle 4: We will demonstrate accountability and trans-

parency in regularly disclosing publicly our progress in implementing the Principles.

ESG is important to the health and well-being of an insurance company in honoring its commitments to its stakeholders, including policyholders, employees, stockholders and regulators. In addition, rating agencies like AM Best consider ESG factors within the broad range of qualitative and quantitative criteria to perform credit analysis and financial credit ratings of insurance companies.

Tran started his presentation by discussing how Swiss Re considers ESG alongside sustainability and sustainable development goals (SDGs) for their underwriting and product strategy. They begin from this sustainability mission statement:

We aim to meet the needs of the present without compromising the ability of future generations to meet theirs. We do so by taking a strategic and forward-looking view, and by considering our economic, environmental and social impacts.

The mission is integrated alongside ESG and the 17 U.N. SDGs to identify areas for business opportunities while working to meet Swiss Re's commitment to net-zero greenhouse gas emissions in operations by 2030 and across the entire business by 2050.

Swiss Re integrates sustainability into underwriting at the deal and portfolio level, Tran explained. This includes ESG risk assessment and underwriting referral tools for new business applications, as well as policies on human rights and environmental protection.

To perform their portfolio assessment, Swiss Re actively scores all assumed business across the 17 SDGs, mapping its contribution and harm toward overall sustainability goals. Tran shared an illustrative product development example. E-bikes are growing in popularity in Japan, so Swiss Re developed an e-bike insurance product to meet the market demand. They quantified the sustainability for the individual product and how it contributed favorably to their overall metrics.

Tran closed by describing three ways actuaries can contribute to ESG and sustainability efforts:

1. Data – Challenge ourselves. Where can we find nontraditional sources?
2. Skill set evolution – We cannot do this alone. We need to work with a cross-functional mindset.
3. Model development – A faster feedback loop and responsive stakeholder engagement are crucial.

Together, we can successfully achieve our business goals, including ESG and sustainability objectives. **ff**

# Study Strategies for a New Era

from page 5

to be in a better position to tackle the Blooms questions. If you're familiar enough with the topic that you could confidently go in front of your peers and teach them, then you'll be knocking that exam out of the park.

Up next, I've accumulated a few tips for exam day. It's always worth it to **make sure your solutions are easy to follow**. Ensure that the grader can identify your final answer along with each of the steps you took to calculate it. You don't necessarily need to worry about formatting, but it's worthwhile to label your steps, as it will help you maximize your partial credit. Also, **check your cell references if you have time to check your work**. You don't want to miss valuable points because of such trivial errors.

This next one seems silly, but it is some of the best advice I can offer – **bring a sweater**. Many of us provided the feedback that the testing centers get cold, so dress accordingly. In general, try to plan ahead to make yourself as comfortable as possible during the exam.

My final piece of advice is to **try not to stress about things that are out of your control, and if something doesn't go according to plan, don't panic** (easier said than done, I know). Know that if something goes wrong, the CAS is actually standing behind you. Sometimes we

feel disconnected from the CAS, so it is easy to assume they aren't looking out for us. They really do read your survey responses and review all technical reports/issues. Although technical difficulties are uncommon, there are dedicated groups of volunteers who review every case and try their best to fix any unfair situations.

I recognize that many of us have different approaches to taking these exams and that what works well for me may not work for everyone, but I really hope that some of these recommendations will be useful to you. I also hope that you have a productive study season and dominate your next exam! Best of luck to all of you!

As promised, here are a few links to additional articles and the known spreadsheet function differences:

- [Tips for Adapting to CBT Exams](#) – September 2021
- [Taking Two CAS Exams in One Sitting](#) – December 2020
- [Study Tips and Tricks – A Time Travel Adventure](#) – March 2020
- [Study Tips and Tricks](#) – June 2019
- [Know Your Learning Style](#) – June 2019
- [Spreadsheet formulas](#) **f**

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## The Candidate Advocate Working Group Mission

The Candidate Advocate Working Group (CAWG) focuses on issues of importance to candidates who are pursuing CAS designations. It serves as a direct point of contact for candidates to engage with the CAS and admissions working groups by sharing their thoughts and feedback. The CAWG also supports candidates' career advancement by advising candidates of resources available to them. The working group utilizes various communications tools, such as the quarterly *Future Fellows* newsletter and the *Future Fellows* Hot Topics blog, to engage candidates and provide information on topics of importance. Candidates may contact the Candidate Advocate Working Group at CAWG@casact.org. The Casualty Actuarial Society is not responsible for statements or opinions expressed in articles, discussions or letters printed in *Future Fellows*.

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# FUTURE FELLOWS

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## Vendor Links

### STUDY AIDS AND SEMINARS

Information on study aids and seminars is provided only as a convenience to CAS candidates. The CAS takes no responsibility for the accuracy or quality of the study aids and seminar announcements attached to this notice.

Please note that the Syllabus and Examination Working Group expects candidates to read the material cited in the *Syllabus* and to use other material as a complement to the primary sources rather than a substitution for them. 

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Coaching Actuaries  
Exams 1, 2, 3F, MAS-I, and VEE

The Actuarial Bookstore  
Exams 1, 2, 3F, MAS-I, MAS-II, 5, 6, 7, 8, 9 & VEE

The Infinite Actuary  
Exams 1, 2, 3F, MAS-I, MAS-II, 5, 6, 7, 8, 9

ActuarialTesting  
Exams 5, 6US, 9

New England Actuarial Seminars  
VEE

ASM (Actuarial Study Materials)  
Exams MAS-I and MAS-II

Rising Fellow  
Exams 7, 8 and 9

BattleActs  
Exams 5, 6C, 6US, and 8