

# FUTURE FELLOWS

June 2019, Volume 25, No. 2

## Exams IRL: MAS-I

By Nate Williams, Candidate Representative to the Candidate Liaison Committee

**H**ave you ever been studying for an exam and thought, “Why am I learning this stuff? When am I ever going to use any of it?” If so, you are in luck! This is the first in a series of articles examining how content from CAS exams are used in real life. First up is Modern Actuarial Statistics-I (MAS-I).

The magic letters are PA. No, it’s not Pennsylvania, but predictive analytics, which has been a pretty hot topic in the actuarial profession over the last several years — enough so that the Certified Specialist in Predictive Analytics (CSPA) credential was the first offered by The CAS Institute (iCAS).

One of the core components of predictive analytics is modeling. And, at half of the total weight for the latest MAS-I sitting (Section C – Extended Linear Models), predictive analytics is kind of a big deal. If you were to search through the CAS 2019 Spring Meeting program guide (as of late April), approximately 20% of the sessions offered discuss models or predictive analytics. In addition, the CAS Ratemaking Committee just released a paper titled “Predictive Models: A Practical Guide for Practitioners and Regulators.” Modeling seems to be all over the place, but does that mean that MAS-I gives you the tools needed to construct a model? Let’s try and build our own model and see which steps, if any, are mentioned on the MAS-I syllabus. Since generalized linear models (GLMs) are some of the most commonly accepted models by regulators (and therefore widely used), let’s use one of those. It’s also conveniently one of the learning objectives in the MAS-I syllabus.

Assuming we have a quality set of data, here is a list of a few possible considerations to make when building our model:

- Breaking up the data into training and testing datasets. We might consider using

cross validation, especially for smaller amounts of data.

- Determining what we’ll be modeling. Should we model frequency and severity? If so, perhaps the best way will be using a **Poisson** and **gamma** distribution, respectively. Or maybe we should use a **Tweedie** distribution to model pure premium instead.
- Selecting variables to include in the model. Should we **transform** any variables? Maybe use **splines**? Perhaps we should introduce **interaction terms**. If, on the other hand, we have too many variables, we might want to reduce the number through regularization and the use of either a **lasso** or **ridge regression**. We should watch for **aliasing** as we add or remove variables.
- Evaluating the model. We can compare different iterations of the model against each other using **deviance** or other tests, as well as a host of other statistics and metrics.
- Testing the model. We can use the model on our test dataset and determine whether we’re **overfitting** the model.

Lucky for us, all of the terms in **bold** have knowledge statements on the MAS-I syllabus! This was a very high-level look at the process of creating a model — there are many additional steps to take and considerations to make if modeling in practice (and some of these, too, are still on the syllabus). MAS-I doesn’t necessarily provide you with all of the nuts and bolts necessary to design a successful model. In fact, many of the things covered by this exam are done behind the scenes by the computer programs that have allowed models like GLMs to become prominent in the insurance industry. The strength of this exam is in the foundational

⇒ turn to page 3

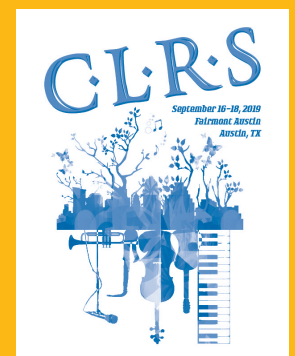
## REGISTER TODAY!

CAS R FOR THE  
P&C PRACTITIONER  
BOOTCAMP  
July 23-26, 2019  
Rosemont, IL

CAS WEBINAR:  
BALANCING RISK AND  
CAPITAL  
July 25, 2019

CAS PREDICTIVE  
MODELING BOOTCAMP  
August 20-23, 2019  
Chicago, IL

CASUALTY LOSS  
RESERVE SEMINAR  
(CLRS) AND  
WORKSHOPS  
September 16-18,  
2019  
Austin, TX



## SAVE THE DATE!

IN FOCUS –  
VIRTUAL EVENT  
October 1-3, 2019

# Deciding Which Exam to Take And When

By Sarah Manuel, ACAS, MAAA

Which exam you should take and when can be a big decision to make. Because the CAS exams are numbered, it might at first glance seem like you have to take them in order and as fast as you can (see the CAS infographic for an example). While in general it's to your advantage to get through exams quickly, the order of the exams you take and even whether to take an exam at all during a given sitting can depend on many different factors. Every candidate's mental calculus will be different, and two actuaries given the same set of circumstances may make different choices. With that said, here are some common considerations when planning out your exam strategy.

## Time commitment

This can be one of the biggest determinants of whether a candidate passes or fails an exam: Did they spend enough time studying for it? For new exam-takers and seasoned vets alike, this can be hard to figure out — especially when you're under pressure to get through exams quickly while also balancing other priorities. Here are some things that I wish someone had told me (or that I wish I had listened to when people did tell me) that might help guide your thinking:

- Do you have a summer internship where there are lots of social events and attendance is “highly encouraged” (i.e., mandatory)? Social events for internships are almost never at libraries, so you probably won't have enough time to both study and get to know your new coworkers. It might be a good idea to focus on your internship over the summer and pick up studying once school starts again in the fall.
- Are you close to getting your ACAS and wondering when to take Courses 1 and 2? You might consider studying for one of them during the eight-week period when CAS exams are being graded and you have time while you wait for your results. The online courses take significantly less study time than the upper-level exams, so it might make sense to take one in between sittings instead of missing a sitting for an upper-level exam.
- Are you on a project at work that requires you to travel or spend long nights or weekends working? Is your study time often interrupted by conference calls and urgent client deadlines, so much so that by the end of it you feel like you've barely started? If so — and this is the most important part — will you spend the free time you do have studying? Being on a high burn rate project at work doesn't mean you can't pass your exam (I've done it and I've seen others do it too), it just means that you'll have to make sure that you learn what you need to learn in the time that you have. If you don't think you'll have the time to devote to

studying, you might consider skipping a sitting (check your company's exam policy to see what you can do to avoid any potential penalties for this) or working with your team to make sure you can get some time to disconnect and focus on your exam.

## Baseline comfort level with the material

Your level of familiarity with a subject works in conjunction with the amount of time you can devote to studying. If you do a lot of work on both pricing and reserving projects at your job, you might not need as much time to study for Exam 5 as someone who's new to both subjects. If you just took a college course that covers material for a specific exam, you might want to take that exam soon after finishing the course so that you don't have to spend as much time refreshing your memory later. Previous sittings for an exam also count — it might take you less time to study for your second attempt at an exam, depending on how close you were to passing it the first time. If you know you'll have a limited amount of time to devote to a particular sitting, you might consider taking an exam that covers material you're already familiar with as opposed to one that will be completely new for you.

## Exam credit from other Societies

As of Spring 2019, preliminary exams P, FM and IFM are all accepted by both the CAS and the SOA, which makes them great exams to take first for candidates in the U.S. who aren't sure in which actuarial discipline they'll end up working. This also applies to VEEs, but you should check whether you can gain credit for VEEs through college classes first.

## Longevity of the exam

This often comes into play when you're considering taking an exam that has been recently introduced or structurally changed. Some candidates prefer to wait to take exams until after they've been offered for a few sittings so that they can get a feel for what kinds of questions will be asked and in what format. For example, a candidate might have started taking online courses or upper-level exams instead of taking one of the first sittings of MAS-I and MAS-II. This all comes down to personal preference and comfort with varying levels of uncertainty, and there's no one right way to do it.

## CAS meeting locations

When getting close to obtaining their ACAS or FCAS credentials, some candidates start to look at where the first CAS meeting will be held after they receive their credentials. If, for

⇒ turn to page 3

## Deciding Which Exam to Take And When

from page 2

example, there is a CAS meeting scheduled for Hawaii, you might try to pass exams at a rate that would ensure that you can go to Hawaii for that meeting. If this is your approach, my personal recommendation is that you do this by choosing to take exams like online courses or the Course on Professionalism (at least for ACAS). You wouldn't want to try to delay passing an upper-level exam if you can avoid it since there are so few sittings, and you never know if you'll pass at the next sitting.

Even after you've considered all the factors and picked your strategy, don't be surprised if that strategy has to change. Unexpected circumstances could pop up and derail your studying. You might fail an exam and have to retake it instead of moving on to the next one (this is totally normal by the way). So, my best advice is this: Reevaluate often, be honest with yourself about what you can and can't do in a given set of circumstances, and make the best of it when things change. Good luck! **f**

## Exams IRL: MAS-I

from page 1

knowledge behind the modeling process, as well as introducing candidates to the variety of tools and tests available for building and evaluating models. This knowledge will assist the analyst in determining the correct inputs for the modeling tools, as well as correctly interpreting the output from those tools. Deeper understanding will come with experience, as one gains intuition for the "art" of modeling, as well as while studying for Exam 8 (which will be discussed in a future newsletter).

Even though modeling and its supporting sections can take up a large part of this exam, not every analyst is required to build a model. There is another section of this exam which deals with a topic that may be more related to the average analyst's everyday work. According to the *CAS Statement of Principles Regarding Property and Casualty Insurance Ratemaking*: "Consideration should be given to past and prospective changes in claim costs, claim frequencies, exposures, expenses and premiums." Of course,

we are talking about trends, one of the four main types of movements along with seasonality, cycles and random fluctuations in time series, which is the last section in the MAS-I syllabus. You may have additional concern with the other time series movements depending on the line of business you're working on. For example, seasonality might be more important for a commercial policy covering a retail store affected by holiday shopping periods. Or perhaps you might be analyzing data for personal lines that are influenced by colder weather, such as motorcycle or boat. The coverage on the MAS-I syllabus will give you a good background on some of the considerations behind analyzing data over time, which is likely to come up at some point in an analyst's career. You might even read more about the use of trending in ratemaking in the article discussing Exam 5 – make sure to check future newsletters so you don't miss it! **f**

## Study Tips and Tricks

By Chip McCLearly, ACAS

**A**s candidates try to prepare for each upcoming exam, one of the most common questions asked is, "How should I go about getting ready?" Entry-level candidates know what's worked for them in high school and college; however, actuarial exams are quite different. Mid-level candidates know what worked for preliminary exams but written-answer exams require a different approach. In the end, everyone is looking for ways to make the studying process both efficient and effective.

Here are some ideas I've been given over time for how to pass exams. Even if I didn't — and still don't — use all of them, perhaps you'll find some of them helpful for getting to the level necessary to achieve a passing score:

- **Figure out how much time you think you need to get ready.** The oft-mentioned rule of thumb of "100 study hours per hour of exam time" is a good starting point, but you know from prior experience whether you need more time or less. Start with that rule of thumb and adjust accordingly based on your history until you hit a number that you feel comfortable with.
- **Set a realistic study schedule.** This sounds easy enough. Know the date you're taking your exam, pick a date to start and fill in the space between with study hours. Whether you plan on taking 24 weeks to get ready or just 10, plan that out for each day while accounting for events you know are happening along the way. If you know you're going to have days where something

⇒ turn to page 4

# Study Tips and Tricks

from page 3

is going on and you're not going to study, that's okay. Take that into account when planning your hours. Don't put yourself down for four hours on a weekend you're going to a wedding or for 10 hours in a week you'll be on vacation, unless you're really going to take time out of those days to study. Make the time you say you're going to spend studying match up with the time you really will study.

- **Keep track of your study time.** If you don't track what you're doing, it can be difficult to know when you are off track and how to adjust. I have a spreadsheet where I log family or personal events that are going on, how long I said I was going to study, how much I did study and what I worked on for a given day as well as what I plan to work on in upcoming days. At a glance, I can see whether I'm ahead or behind of schedule and whether I need to adjust my schedule. That spreadsheet gets updated frequently depending on what's going on around me and how it might impact the studying I had planned to do (or maybe not do), but I can always see where I am relative to where I want to be. Being able to review if things are going better or worse than expected and knowing what your schedule looks like in the near future shows how things are going, in case you need to make changes to stay on pace to be ready for the exam.
- **Make studying a priority.** You don't need to drop everything going on around you to study all the time. Instead, identify activities you can do without while you study. You probably shouldn't skip family events to study, nor should you spend that time physically present but studying instead of giving your family your full attention. You should probably put aside activities that clearly don't help with exam prep aside, especially those that consume time and make you think, "I could be doing something more productive."
- **Use the study style that works for you.** There is no "one size fits all" way to go about getting ready for exams; everyone has their own individual way of learning. Your method might be using note cards, doing problems, watching videos or some combination of these or other methods. Do what provides the most benefit for you, not what worked for a coworker or someone on the Actuarial Outpost.
- **Don't get discouraged.** It's easy to hit a topic and say, "I don't understand it," and let that bog down everything you're trying to do. If you get stuck on a topic, don't be afraid to move on to another topic. Once you achieve some positive momentum, then go back to the topics you're struggling with.
- **Don't be afraid to ask for help.** There are many resources available to ask questions and get answers. These include other candidates taking the exam, co-workers who've taken the exam, or maybe even your manager or other actuarial department members. Work study groups or online forums is another appropriate avenue for assistance. If you don't understand a

topic, reach out and see if someone else who does can help you understand. Sometimes, just getting another person's explanation can help things click.

- **Where numerical problems are asked, create your own examples.** This is a fantastic way to learn some topics and can help tie concepts together where the explanation from a syllabus reading may not be clear. Open an Excel file, recreate a problem and set up the solution as it's described in the syllabus reading or from an exam question. Then, re-do the problem by randomizing the inputs. Once you understand how the pieces come together, changing the inputs gives you a new problem that helps you understand the steps without simply memorizing the answers.
- **Look to the Knowledge Statements for guidance on what to study.** While they may not detail everything that could show up on the exam, syllabus Knowledge Statements should serve as a good guide to determine what you need to know. From there, you can supplement with other items that are in syllabus readings and have shown up on prior exams but are perhaps not specifically mentioned in a Knowledge Statement.
- **Focus on where the points are.** No matter how well you plan out your study schedule, you may still not have enough time to know every topic inside and out. Be most familiar with the subjects that received the most weight on the syllabus and in prior exams, but also try to be familiar enough with other areas that you can receive at least some partial credit on upper-level exams. There's nothing wrong with trying to know everything that will be on the exam but remember that you don't need to be the best-performing candidate to pass the exam. You just need to be at least as good as the minimally qualified candidate.

Most importantly, **make sure you still leave time for you.** It can be easy to combine work and studying and the rest of life's demands and say, "I don't have time for anything else." There's a balance you need to strike there between "need to study" and "no fun at all." Don't make yourself miserable trying to get ready for an exam; find time to stay connected with friends and family and do the things you enjoy doing, while still getting yourself ready to pass the exam you're studying for.

Preparing for an exam is quite a challenge. Much of how to get ready is individual to each test taker. Consider these ideas and see which of them works best for you. As you learn the best plan for your study habits you will be able to continue to refine the plan as you pass more exams. Best of luck in all your studying! **ff**

**What are your study tips and tricks? Let us know by submitting the CLC Feedback form, [casact.org/newsletter/feedback](https://casact.org/newsletter/feedback).**



# Know Your Learning Style

By Laura Hemmer, FCAS

**S**tarting to study for an exam is generally a daunting task. How should you organize yourself to get the best results? Often candidates ask their friends or coworkers for advice on how to study. “Definitely notecards,” one will say. “I wrote 600 notecards for each exam and always passed on the first try!” “Don’t use notecards,” says another. “Useless. Instead I watched lots of online seminars.” Given all this conflicting advice, how do you know what methods are right for you?

## What is a learning style?

The answer can be found in knowing your “learning style.” A learning style just means the way in which you learn best. While the precise names and number of styles can vary, one of the most popular learning style lists uses the acronym VARK:

- Visual learners — If this is you, you learn best by reading and seeing new information, perhaps in chart or diagram form.
- Auditory learners — You learn best by hearing verbal explanation and participating in discussions.
- Reading/writing learners — You like lists, text and taking notes.
- Kinesthetic learners — You learn by doing. Examples and practical applications are the best for you.

Of course, most of us don’t fall neatly into one category but are a mix, known as multimodal. That means you should incorporate strategies for all relevant learning styles into your individual learning strategy.

## Why is knowing your learning style important?

Studying for a CAS exam is most likely a different learning environment than you’ve experienced before. Instead of attending a class and then having a final exam, you are responsible for teaching yourself the material in order to pass the test. You’ve probably never been completely on your own to learn new material before. Knowing your learning style helps you figure out how to organize your study plan and which study habits to adopt. We all know the adage of 100 study hours per hour

of exam, but it is important to make sure you are using those 100 hours as efficiently as possible to really set yourself up for exam success.

## How do you figure out your learning style?

To understand which learning style or styles applies to you, you have to undertake some self-reflection. Think about what engages you in the classroom or work setting. Do you eagerly participate in meeting conversation and prefer face-to-face communication to discuss concepts? Then you might be an auditory learner. Do you take extensive notes and use a lot of Post-its to help orient yourself? Then you’re probably a visual learner. Is your whiteboard covered in diagrams? That definitely points to visual learning. Some careful thought about what has

worked for you in the past will help you get organized for studying.

Of course, you can always Google “learning style quiz” and get an objective opinion on what style best suits you. There are several free options available online.

## What study habits work best for each style?

Some suggested study habits for each learning style are below.

- Visual — Use graphs, charts and diagrams wherever possible. Flash cards may be helpful.
- Auditory — Get involved with a study group to talk through concepts. Read aloud or explain answers out loud to yourself. Try an online or in-person exam seminar.
- Reading/writing — Make lists and note pages for reference. Reread material to help it stick.
- Kinesthetic — Use examples and practice problems to understand concepts. Take breaks during studying to move around.

Remember, many people are a mix of styles so several of these methods may speak to you. Everyone is unique; you will figure out what works best for you via trial and error. Even after determining your learning style, you may still want to ask those coworkers for advice! Also, make sure to read the Study Tips and Tricks article in this issue of *Future Fellows* for more ideas. **ff**

**You’ve probably never been completely on your own to learn new material before. Knowing your learning style helps you figure out how to organize your study plan and which study habits to adopt.**

# Regional Affiliates

By Dan Watt, FCAS

Similar to other professions, upon receiving ACAS and FCAS credentials, you are required to maintain a certain number of continuing education (CE) hours each year (a useful video on CE requirements can be found at <https://www.casact.org/membership/NewMembers/index.cfm?fa=video>).

For some, these requirements can be arduous, particularly when attempting to fulfill organized education hours. To assist members in their CE efforts, the CAS offers semiannual meetings and seminars. Many members, however, are not able to attend all of these offerings due to the time commitment of travel or the registration costs. Therefore, there are 18 CAS Regional Affiliates established throughout the United States, Canada, Bermuda, Europe and Asia, with the purpose of providing opportunities for organized CE hours close to home at a low cost and a small time commitment.

Most Regional Affiliates meet twice a year, providing their members with full days of pertinent and interesting presentations. Often, a session on Professionalism will be offered, which can be a pesky requirement to fulfill each year. A wide variety of topics are presented by folks from diverse backgrounds. For example, at the most recent Casualty Actuaries of New England (CANE) meeting, a presentation on wildfires was given by a fire expert, a doctor presented his research findings on chronic traumatic encephalopathy (CTE), two attorneys shared their insights on trends and changes in the insurance legal environment, and there were presentations on blockchain and the state of the reinsurance market. Not only will attending these meetings fulfill CE requirements, but the topics discussed are often directly related to your work.

In addition to providing CE, Regional Affiliates also provide fantastic networking opportunities. Hundreds of local professionals from different companies and lines of business gathered in one place is a wonderful venue to stretch your learning and increase your professional network. Jeff Courchene, a member of the Casualty Actuaries in Europe (CAE) remarked:

“When I moved to Europe in 2005, the CAE was an opportunity to engage with other CAS members. Sharing experiences and networking with CAS members in Europe was particularly valuable in that many of us faced similar cultural and professional challenges while sharing similar actuarial backgrounds.”

Regional Affiliates also provide opportunities to volunteer. You can help organize and run the meetings by participating on their boards. Even better, you can volunteer to present! Through the Affiliate’s University engagement program, there may be mentoring opportunities. Most Affiliates invite students to their semiannual meetings and often have strong connections with regional universities. Karen Queen, a member of the Casualty Actuaries of the Desert States (CADS) shared the following:

“CADS partners heavily with Arizona State University; ASU has a strong and growing actuarial science program and is a 2018 CAS University Award winner. CADS

Name	Region	Fee Structure	Typical Meeting Attendance
Casualty Actuaries of the Southeast (CASE)	AL, AR, FL, GA, KY, LA, MS, NC, SC, TN, VA	Membership fee: None Meeting fees: FCAS & ACAS \$110 Univ. Students \$25	100
Casualty Actuaries of the Desert States (CADS)	AZ, NV, NM	Membership fee: FCAS & ACAS \$60 4+ exams \$30 Meeting fees: None	60
Casualty Actuaries of the Northwest (CANW)	AK, OR, ID, MT, WA, British Columbia, Alberta, Saskatchewan	Membership fee: FCAS & ACAS \$30 Non-Members \$20 Meeting fees: None	50-100
Casualty Actuaries in Europe (CAE)	Europe, the United Kingdom, and the Republic of Ireland	Membership fee: None Meeting fees: None	100
Casualty Actuaries of the Mid-Atlantic Region (CAMAR)	DE, DC, MD, NY, NJ, PA, VA	Membership fee: None Meeting fees: FCAS & ACAS \$150 Univ. Students \$10	150-170
Casualty Actuaries of New England (CANE)	Eastern CT, MA, ME, NH, RI, VT	Membership fee: None Meeting fees: FCAS & ACAS \$125 Univ. Students \$10	300-400
Southwest Actuarial Forum (SWAF)	AR, LA, NM, OK, TX	Membership fee: None Meeting fees: \$160	50-100
Buckeye Actuarial Continuing Education (BACE)	OH	Membership fee: None Meeting fees: vary	80-100
Ontario Conference of Casualty Actuaries (OCCA)	Ontario	Membership fee: \$30 (cad) Meeting fees: \$80 (cad)	400-450
Casualty Actuaries of the Bay Area (CABA)	Northern CA	Membership fee: None Meeting fees: \$100	75-100
Midwestern Actuarial Forum (MAF)	IL, IN, IA, MI, MN, OH, WI	Membership fee: None Meeting fees: \$25	100-300

⇒ turn to page 7

## Regional Affiliates

from page 6

typically holds one meeting per year on campus, with significant student engagement including student presentations. Many of the local companies fill internship and entry-level positions through this partnership, and CADS members participate in the actuarial science program activities such as mock interviewing and case study competition judging.”

A few Affiliates (e.g., SWAF, MAF, CASE, CAMAR) award scholarships to students. The Casualty Actuaries of the Mid-Atlantic Region (CAMAR) typically awards up to three eligible candidates \$3,000 to \$5,000 and smaller amounts to others, for a total of up to \$20,000 per year!

The table provides basic available information regarding each Regional Affiliate. For further information or to contact your respective Regional Affiliate, please visit <https://www.casact.org/community/affiliates/>.

### Additional Regional Affiliates

Casualty Actuaries of Greater New York (CAGNY) ~ NY, NJ, Eastern PA, Western CT

Central States Actuarial Forum (CSAF) ~ CO, IA, KS, MO, NE, ND, SD

## Update to the Exam Discipline Policy


Please be aware that the CAS has modified its CAS Examination Discipline Policy to include an arbitration clause, which stipulates that disputes arising under the Examination Discipline Policy will be settled via arbitration. The CAS is dedicated to providing high quality examinations, and we expect that situations requiring arbitration would be rare.

Southern California Casualty Actuarial Club (SCCAC) ~ Southern CA

Association des Actuaire IARD (AAIARD) ~ Québec

Casualty Actuaries of Bermuda (CABER) ~ Island of Bermuda

Casualty Actuaries of the Far East (CAFE) ~ People's Republic of China Mainland, Hong Kong, Taiwan, Japan, Korea

Asia Region Casualty Actuaries (ARECA) ~ PRC Mainland, Hong Kong, Taiwan, Japan, Korea, plus all of southeast Asia 

### Candidate Liaison Committee Mission

The Candidate Liaison Committee communicates with CAS candidates, collectively and individually, who are taking CAS examinations. The committee informs candidates as to appropriate courses of action available to them. Through periodic communication, this committee informs candidates of results of examination administrations, actions taken on complaints received regarding examination questions and reasons for syllabus and examination changes being implemented. Communication encompasses existing policies and procedures as well as changes being considered. The committee should advise the CAS and its committees of the interests of the candidates regarding matters that come before the CAS and its committees. Candidates may contact the Candidate Liaison Committee at the CAS office address. The Casualty Actuarial Society is not responsible for statements or opinions expressed in the articles, discussions or letters printed in *Future Fellows*.

## FUTURE FELLOWS

*Future Fellows* is published four times per year by the Casualty Actuarial Society, 4350 North Fairfax Drive, Suite 250, Arlington, Virginia 22203.

Telephone: (703) 276-3100  
Fax: (703) 276-3108

Email: [office@casact.org](mailto:office@casact.org)  
Website: [www.casact.org](http://www.casact.org)

Presorted Standard postage is paid at Lanham, Maryland.

Candidate Liaison Committee:

**Rachel Hunter**, FCAS, Chair  
**Lucia Batista**, ACAS  
**Celeste Bremen**, ACAS  
**Elizabeth End**, FCAS  
**Laura Hemmer**, FCAS  
**Sarah Manuel**, ACAS, MAAA  
**Richard McCleary**, ACAS  
**Nicholas Schneider**, ACAS  
**Adam Vachon**, ACAS  
**Dan Watt**, FCAS

Candidate Representatives:

**Agatha Caleo**  
**Leisha Cavallaro**, ACAS  
**Mark Maenche**  
**John McNulty**

**Annie Que**, ACAS

**Rehan Siddique**

**Layla Trummer**

**Nate Williams**

CAS Director of Admissions:

**Ashley Zamperini**, CAE

CAS Admissions Manager:

**Stephanie Litrenta**

CAS Examinations Coordinator:

**Robert L. Craver**

CAS Associate Director of Publications:

**Elizabeth A. Smith**

CAS Graphic Designer:

**Sonja Uyenco**

**Subscriptions** to the newsletter are complimentary to CAS candidates who registered for a CAS Examination during the previous two years.

**For information**, please contact the CAS Office. Send all letters to the editor to the CAS Office address.

**Postmaster:** Please send all address changes to: The Casualty Actuarial Society, 4350 North Fairfax Drive, Suite 250, Arlington, Virginia 22203.

**For permission to reprint material**, please write to the chairperson of the CAS Candidate Liaison Committee at the CAS Office address. The CAS is not responsible for statements or opinions expressed in the articles, discussions or letters printed in this newsletter.

©2019 Casualty Actuarial Society  
ISSN 1094-169-X

FSC LOGO


## Vendor Links

### EMAIL STUDY GROUPS

Email study groups are available for candidates preparing for CAS examinations. Information about each study group list is available on each exams syllabi landing page.

### 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 Examination Committee 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. 

Actex Learning/Mad River Books  
Exams 1, 2, 3F, MAS-I, MAS-II, 5, 6, 7, 8, 9 & VEE

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

ALL 10, Inc  
Exams 5, 6US, and 9

BattleActs  
Exams 6C and 6US

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

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

New England Actuarial Seminars  
VEE