Future FELLOWS

March 2012, Volume 18, No. 1

# Looking Ahead with the New Examination Committee Leaders

***By Steven D. Armstrong, FCAS, CAS Examination Committee Chairperson, and William B. Wilder, FCAS, CAS Examination Committee Assistant Chairperson***

We are excited to be leading the Examination Committee as we have several goals that we are anxious to accomplish.

Some of our goals for the upcoming years include the offering of Exams 5 and 6 twice a year (starting in 2013 for Exam 5 and 2014 for Exam 6), augmenting the item-writing skills of our question writers, and finding solutions to the challenges of offering non-multiple-choice exams in a computer-based environment. In addition, based on recent direction from the CAS president, we will be looking hard for ways to enhance the process underlying the determination of the pass mark, including seeking out the input of experts in the area of professional testing.

Like our predecessors, we also value transparency and an open line of communication to the candidates at large as well as to our credentialed actuaries. As we start to progress on some of our goals and start thinking of new ideas that may be woven into the education process, we will be looking for input and feedback through the use of blogs and other communication vehicles to allow for two-way communication.

As we endeavor to make the CAS examination process the best that it can be, we thought that candidates might find it helpful for us to elaborate on some of the practices that we expect will lead to higher levels of success on the examinations:

1) *Know the entire syllabus for your exam.* We have seen some trends where candidates are attempting to study only portions of the syllabus. These candidates are missing out on significant point opportunities when the exam is actually administered. While we understand that sometimes it is difficult to know all the material, the standard for passing typically assumes that the minimally qualified candidate has some knowledge of each of the learning objectives.
2) *Focus more heavily on the actual syllabus material than on the supplemental third-party*

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# Changes Are Being Made to Course on Professionalism

***By Dan Tevet, FCAS, Member of the Committee on Professionalism Education***

The Course on Professionalism is undergoing a significant makeover in 2012. The previous course structure consisted of several components—presentations on various Actuarial Standards of Practice (ASOPs) and similar professionalism documents, several interactive case studies, a mock trial, and a movie called *Billion Dollar Bubble* (which, if you are anything like the typical candidate, you will love). The course took two days. Beginning in 2012, however, many of the presentations will become pre-course assignments that will only

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## Dates to Remember

### Exam Registration Deadlines

Exam 1/P
**March 29, 2012**

Exam 2/FM
**April 23, 2012**

Exam 3F/MFE
**March 8, 2012**

Exams 3L, 5, 7, and 9
**March 29, 2012**

Exam 4/C
**April 10, 2012**

### Exam Refund Deadline

Exams 3L, 5, 7, and 9
**May 7, 2012**

### CAS Seminars and Meetings

Ratemaking & Product Management (RPM) Seminar
Philadelphia, Pennsylvania
March 19-21, 2012

Enterprise Risk Management (ERM) Symposium
Washington, D.C.
April 18-20, 2012

CAS Spring Meeting
Arizona Grand Resort
Phoenix, Arizona
May 20-23, 2012

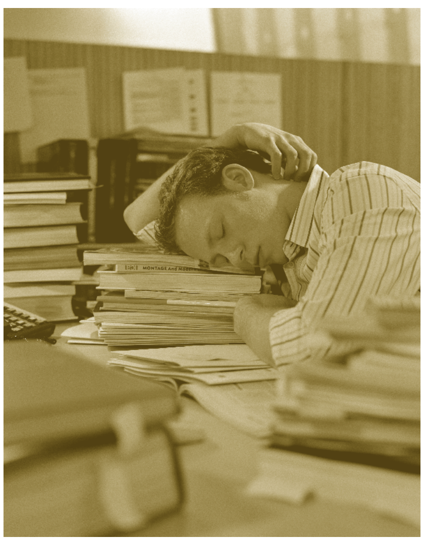
# Are You Sleeping?

***By Katrina Redelsheimer, ACAS, and Susan Poole, Candidate Liaison Committee***

You're in the throes of study season. It's late, you're tired, and you have an early meeting at work tomorrow. Unfortunately, you're also behind on your "100 hours per hour of exam time" study schedule. You think if you down half a cup of coffee, you can plow through another two hours and get back on track. The trouble is, that's what you did last night, and the night before that, and the night before that, and somehow you're still not caught up.

Sound familiar?

If so, you've fallen into a common trap. It's impossible to fit 200 to 400 hours of studying into a schedule already monopolized by your 40+ hour work week without sacrificing something, and it's very tempting to make that "something" sleep. One less hour between the sheets could mean one more set of practice problems, or one more project completed at work, or maybe even the beginnings of a social life. But your brain's very real, physical, uncompromising need for R&R makes these benefits illusory.



Your body, including your brain, performs crucial functions during sleep. Without sufficient sleep, your body can't complete essential tasks like repairing your neural networks. This compromises your learning ability, memory formation and consolidation, fact retrieval, creativity, problem solving, reaction time, self control—even insight—all tools you need to pass an actuarial exam. Energy stores of glycogen also must be replenished during sleep. Without fully stocked brain glycogen stores, your brain will literally run out of fuel when attempting challenging mental tasks like learning a new reserving technique or taking an exam. Thus in the end, sacrificing sleep for studying is counter-productive.

So what can you do to maintain healthy sleep during study season? The most important thing to avoid is chronic partial sleep deprivation, which is what happens when you miss one or two hours of needed sleep night after night after night. This creates a "sleep debt," which forces you to either make up the missed sleep later (and then some as your body tacks on a substantial "interest charge") or suffer perpetually impaired mental and physical performance. In all likelihood, you already have a significant sleep debt built up. Try to eliminate this before you begin studying.

As exam day nears, the temptation to put off sleep grows even stronger. Surely you can get by without sleep for just one night, right? Unfortunately, no. After 17 hours without sleep, your brain functions as if legally drunk. As when inebriated, you will believe that your performance is unimpaired while in reality your brain is staggering like a drunk driver failing the "walk the line" test. Sleeping less before your exam, rather than not at all, has less serious, but still very real, consequences. Insufficient sleep means your brain isn't operating at its peak, which could easily be the difference between passing with a numeric score of 6 or failing with a score of 5.

Of course it isn't only sleep quantity, but sleep quality that counts for health and performance. Here are some tips on getting quality sleep, during study season, before your exam, and beyond:

- Don't study, eat, read, watch TV, or do anything except sleep in bed. If you aren't falling asleep, go to another room until you're ready to sleep.
- Give your mind time to relax and wind down. Try to establish a sleep ritual, such as sipping herbal tea or taking a warm shower before bed. Avoid activities that interfere with sleep, such as studying right up until bedtime, consuming caffeine late in the day, or eating a meal within a few hours of trying to sleep. Exercise too late in the day can also be a "sleep stealer"—try to get your daily dose in earlier.
- Manage your blue light exposure. Blue light sends your body a signal that it's time to be awake and alert, which is perfect for daytime, but detrimental as you prepare for sleep. Eliminate blue light after sundown. Try blue-less light bulbs and software to remove the blue spectrum from backlit electronics. The converse is also true: increasing your blue light exposure in the morning will help you wake up (more effectively than a noisy alarm clock).
- Invest in a sleep monitor. You can use the feedback from this device to assess the quantity and quality of your sleep and to make course corrections as needed. It will also help you determine how much sleep you require. The conventional eight hours isn't right for everyone. Your individual needs could be higher or lower.
- Even knowing approximately how much sleep you need each night isn't enough. Because your brain goes through specific cycles during sleep, there are better and worse times to wake up. The same devices that measure your sleep patterns also function as alarms that ensure you awake at the optimal point in your sleep cycle.

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# New Examination Committee Leaders

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*study material.* The quality of the supplemental study material available today is outstanding, but there is simply no substitute for the actual syllabus readings themselves. After all, these readings, as they relate to the learning objectives, are the source for constructing the exam questions.

3) *Respond in enough detail as prompted by the particular question.* When we were studying for examinations, the mantra was "less is more" or we were coached to just write in bullet point format. If a question asks one to "describe" or "evaluate," these are prompts for more elaborate responses and the question is looking for more detailed levels of mastery, which are difficult to demonstrate with shorter, brief bullet point responses. The committee is moving to the use of more high-point questions at higher cognitive levels that may cover multiple learning objectives. These questions require candidates to demonstrate a synthesis of what they have learned or to evaluate a new scenario with the skills they have developed in preparing for the exam. These types of questions require more in-depth responses.
4) *Don't over-rely on previous exam questions.* At times, the Examination Committee repackages good questions from previous exams, but a fair number of questions will look different from what has been seen before. Studying the material and the underlying theories and applications versus just knowing how to perform an already-asked question will help candidates score more points.
5) *Don't assume the least on new papers.* In the past, there was a trend to test new papers minimally, with easier or more "obvious" questions. Item writers today are better trained and better able to extract meaningful, higher cognitive level questions from new papers, and committee leaders are reinforcing more comprehensive syllabus coverage. We recommend studying new material in as much depth as longer-standing syllabus material, even though there are no previous exam questions to study from this material.

We are excited to lead the Examination Committee forward for the next three years. We are committed, as our predecessors have been, to encouraging open and transparent communication. To this purpose, we have established an Examination Committee feedback button on the Admissions/Exams page of the CAS Web Site. We look forward to hearing from you!

In closing, we'd like to thank the outgoing Examination Committee Chairperson Daniel Roth for his professional commitment and leadership.

*Steve Armstrong became a committee volunteer in 1998 and has served in positions of leadership since 2002. Steve is also a member of the CAS Board of Directors, elected in 2011. William Wilder has served on the Examination Committee since 2003 and has served in leadership positions since 2005. Between the two of them, they have approximately 20 years of combined Examination Committee experience. Both have served as part chairpersons for different examinations.*

# October-November 2011 Examination Results

## Exam Summary

| Exam | Number of Candidates | Number of Passing Candidates | Number Below 50% of Pass Mark (Ineffective) | Effective Pass Ratio |
|---|---|---|---|---|
| 1/P* | 2574 | 1098 | 323 | 48.8 |
| 2/FM * | 1618 | 783 | 131 | 52.7 |
| 3F/MFE* | 3353 | 1421 | 362 | 47.5 |
| 3L | 232 | 110 | 31 | 54.7 |
| 4/C* | 1962 | 858 | 239 | 49.8 |
| 6-Canada | 155 | 38 | 20 | 28.1 |
| 6-U.S. | 1002 | 194 | 102 | 21.6 |
| 8 | 418 | 93 | 29 | 23.9 |
| Online Course 1 | 264 | 221 | 0 | 83.7 |
| Online Course 2 | 381 | 292 | 0 | 76.6 |

*For joint exams, the summary includes all candidates who sat for the specified exam.

## Survey Summary

| Exam | Percent Responding | Syllabus Coverage *Inadequate (1) to Adequate (5)* | Exam Clarity *Not Clear (1) to Very Clear (5)* | Exam Length *Too Short (1) to Too Long (5)* | Exam Difficulty *Easy (1) to Difficult (5)* | Exam Quality *Poor (1) to Excellent (5)* |
|---|---|---|---|---|---|---|
| 3L | 33.19% | 3.67 | 3.33 | 2.96 | 3.57 | 3.43 |
| 6C | 32.90% | 2.72 | 3.35 | 3.70 | 4.00 | 3.38 |
| 6US | 25.65% | 3.51 | 2.93 | 4.10 | 3.80 | 3.17 |
| 8 | 28.95% | 3.68 | 3.29 | 3.82 | 3.75 | 3.36 |

## Examination Committee Comments

Daniel Roth, Examination Committee chairperson for the 2011 exams, posted a commentary, "2011 Pass Ratio Outliers," on the CAS Web page that contains the Fall 2011 exam results (see http://www.casact.org/admissions/roth_PassRatio.pdf).

# Changes Are Being Made to Course on Professionalism

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be covered briefly during the course. Due to this change, the course will be only one-and-a-half days.

Before coming to the course, candidates will be required to watch presentations on each of the ASOPs and similar documents that used to be presented during the course. These presentations, termed e-modules, consist of a series of slides with an audio presentation. Questions are placed throughout the slides that candidates must answer correctly in order to proceed. Every candidate is expected to be familiar with each professionalism document before coming to the course.

While the Course on Professionalism consistently receives very favorable reviews from participants, the ASOP presentations are generally the least liked component of the course. The ASOPs are fairly dense documents with many details and nuances that are better tackled over a period of time rather than during one morning at the course. Therefore, members of the Committee on Professionalism Education moved this material to pre-course work so that candidates could cover them at their own pace. This will allow the course to focus on the more interactive presentations.

As an added bonus, these changes will help candidates (and facilitators) book travel home following the course!

*Editor's Note: A version of this article appeared in the February 2012 issue of* The Actuarial Review.

The CAS Committee on Professionalism Education, which is charged with running the Courses on Professionalism, is always looking to improve the course experience. If you have any questions about the course in general or the changes being implemented, or have a suggestion for improving the course, please submit your comments through the Candidate Liaison Committee feedback button on the Admissions/Exams page of the CAS Web Site.

# CAS President Publishes an Open Letter about Exams

CAS President Patricia Teufel published an open letter regarding the Fall 2011 exam results on February 8, 2012. In her letter, she described the current process for grading and setting the pass mark. She also announced that the CAS has engaged a professional education consulting firm to perform an independent review of the exam process. The review is being conducted in the context of a commitment "to a standard of excellence that requires us to reach beyond ourselves to explore best practices and to embrace changes that will further enhance our profession."

Ms. Teufel posted the open letter on the CAS Roundtable in order to encourage comments and dialogue. Read the letter at http://blog.casact.org/?p=186.

# Are You Sleeping?

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In case you're still thinking that you can somehow game the sleep system, that a few extra hours of studying really are more valuable than adequate sleep, consider:

- In one test of factual learning, subjects who took just a one-hour nap before being tested on word pairs they had memorized earlier scored 15% better than their counterparts who had no nap. Imagine scoring 15% better on your actuarial exam. Isn't that worth a little more sleep discipline?
- The negative effects of lost sleep can be partially offset by stimulants such as caffeine. However, such stimulants can only replace sleep for about one hour before performance deteriorates. In case you've forgotten, the shortest actuarial exam is two hours long.
- Recently it's been shown that your neurons will get their sleep with or without you. Under conditions of sleep deprivation, large neuron populations will simply turn off in order to perform the necessary sleep activities. This happens outside of your control and without your knowledge—it's why your head sometimes feels like it's full of sand. That feeling is basically portions of your brain saying "I've had enough!"
- The onerous sleep debt Americans have accumulated is currently being linked to myriad health problems, including diabetes, Alzheimer's, and increased mortality. Good sleep is not just about passing exams, it's about your health, too.

To sleep or not to sleep—that is the question faced by every exam-taker. We hope that during this exam season, you'll choose sleep.

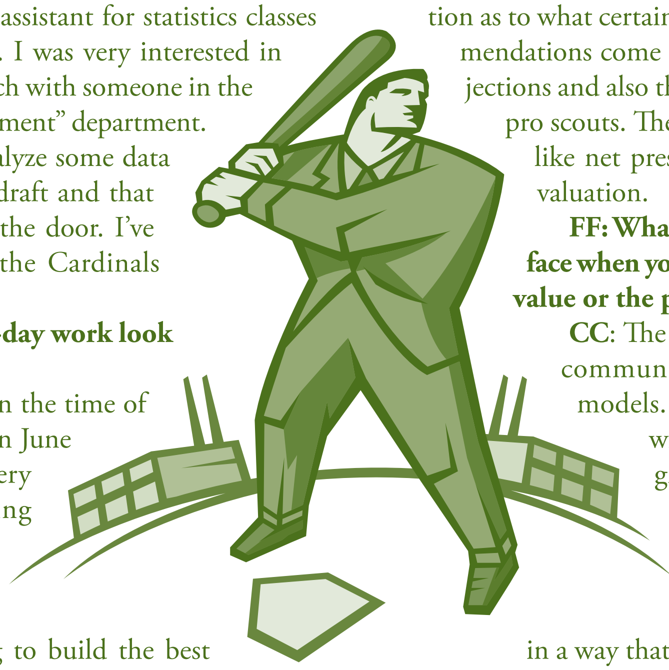
# Building a Winner: Predictive Analytics and Baseball

***By Adam Bates, ACAS, Candidate Liaison Committee***

With Spring Training underway and Opening Day around the corner, *Future Fellows* sat down with Christopher Correa, baseball development analyst for the St. Louis Cardinals, to learn about his role and how analytics and predictive modeling are used by baseball executives.

**FF: How did you get your start as a baseball analyst?**

**CC:** I was a PhD candidate at the University of Michigan and working as a teaching assistant for statistics classes in the Psychology Department. I was very interested in baseball research and got in touch with someone in the Cardinal's new "baseball development" department. I volunteered to gather and analyze some data related to the annual amateur draft and that allowed me to get my foot in the door. I've been working full-time with the Cardinals since 2009.



**FF: What does your day-to-day work look like?**

**CC**: It changes a lot based on the time of year. What my day looks like in June vs. March vs. September is very different. I am always working with others to answer questions from our farm director, scouting director, and general manager. We are always trying to build the best models and decision making process that we can to help them make good decisions.

**FF: What does it look like when you are working on the draft?**

**CC**: Our baseball development team is an interdisciplinary group, so we have many different roles and skills that we try to contribute. There's the software programmer hat, the database architect hat, and then there is the analyst hat that we all have to wear at some time. For the draft, for example, we have to develop reports and software tools to assist our scouts and the scouting director; we have to manage a large database of scouting and performance information; and we are always tweaking the predictive models for all players. On top of that, I'm trying to get out and join our scouts as much as possible to learn from them and broaden my own perspective on the game.

**FF: Do you assign an expected number of wins per team to get to the probability of making the playoffs?**

**CC**: Absolutely. We regularly update our projections throughout the season. Our projections play some role in how we think about the offseason and the trade deadline, but that's just one factor the general manager considers. He's listening to our scouts, and he's listening to the manager to understand what the team needs.

**FF: What is your work like when you are focused on free agency?**

**CC**: Typically we focus on a few areas of need based on guidance from our general manager and make recommendation as to what certain players are worth. These recommendations come from our own performance projections and also the projections of our experienced pro scouts. Then we draw on actuarial concepts like net present value to think about player valuation.

**FF: What are some of the challenges you face when you are trying to predict free agent value or the potential of draft picks?**

**CC**: The biggest challenge is in effectively communicating and implementing the models. We work with people with a wide range of experiences and backgrounds. Our biggest challenge, and what has become our biggest asset, is our ability to communicate what our predictive models are saying and doing it in a way that our front office people, coaches, and scouts can engage in the process and give feedback as to what they think a model is or is not capturing.

When it comes to the draft, one challenge is that there's not a lot of data on some players or the data that does exist is of questionable quality. Some of the high school statistics that are available, for example, were recorded by the kid's parents.

**FF: How do you incorporate soft data from scouting reports?**

**CC**: Scouts are hugely important because they provide information about players that we simply can not get from performance data. We spend a lot of time trying to figure out how to optimally combine those two sources of data. At the end of the day, scouts do put numbers on players and rank them. Our job is to figure out how to combine those rankings with other information such as performance, medical, and mechanics data to predict future performance.

**FF: How do you sort through the massive amounts of data?**

**CC**: It's a challenge. In the future we are going to be able to know where the batted ball is on the field at any second

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Book Review

# *Sonic Boom*, a Look Into an Even Faster-Paced World

***By Mark Taber, ACAS, Candidate Liaison Committee***

At some point in my never-ending quest to satisfy my NFL addiction, I stumbled across "Tuesday Morning Quarterback" on ESPN.com written by Gregg Easterbrook. I am hooked. His offbeat analysis, quirky writing style, and intermittent detours into science, technology, culture, and politics have me coming back every Tuesday. It took a few years for me to realize that this column was a hobby, and that his day job involved writing about more complex and likely more substantial issues. It took me a few years longer before I finally read one of his books, which also happens to be his latest, *Sonic Boom: Globalization at Mach Speed*.

Easterbrook details several examples of how global society has improved in the last several decades. Global education levels have risen and personal freedoms, such as freedom of speech have become more widespread. The premise explored in *Sonic Boom* is that these general underlying positive trends are likely to continue in the future as the world becomes more interconnected. However, the same interconnectedness of the world will also lead to some all-too-familiar problems getting worse. "Job instability, economic insecurity, a sense of turmoil" will be as much a part of the modern world as technological advances and improvement in quality of life. So many things that are good will likely get better, many things that are bad will likely get worse, and it will all happen at a much more rapid pace. This book outlines several examples of why this is happening and explains why this pattern is likely to continue.

While this book doesn't address the insurance industry directly, many of Easterbrook's ideas could be easily supported by examples from insurance, and could have a direct effect on the work of actuaries and what the actuarial career will look like in the future. Rating plans changed relatively little over most of last century. As statistical techniques and computing technology have grown more advanced, the lifetimes of modern rating plans are shorter, and the rate at which those lifetimes decrease will likely increase. This increase in the turnover of rating plans may lead to less stable rates for policy holders which will lead to lower retention.

Another prediction of Easterbrook (that one could easily argue has occurred) is that "there will be tremendous pressure on government officials and policymakers to do something, anything, about the sense of accelerating change." Financial and insurance industry regulation increasing in scope and frequency will cause a higher percentage of an actuary's time to be devoted to ensuring compliance.

Easterbrook's use of interesting examples to further his argument makes this book a little lighter than some other business or economics books. The topics he discusses vary from alternative energy, venture capital, and the fast rise and fall of some modern companies to how military conflict will decline as countries become more economically reliant on one another. For thought-provoking ideas on what an increasingly connected world would look like and how it could change our daily lives (not to mention our actuarial lives), *Sonic Boom* delivers. ff

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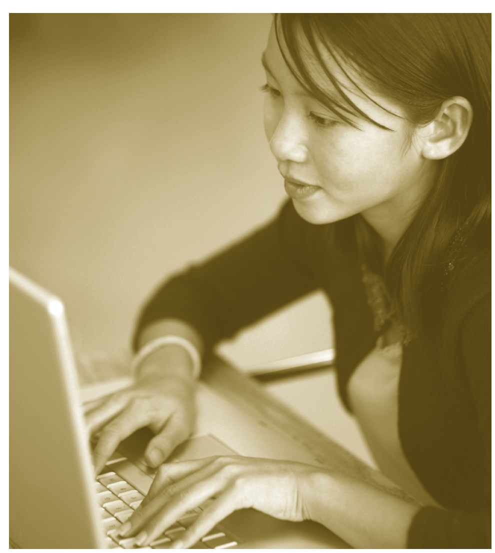
# Requesting Your Thoughts on Exam-Related Strategies



Members of the Candidate Liaison Committee are asking for your help. They are exploring exam-related strategies and are asking those in the CAS exam process to complete a brief, ten-question survey on exam-related strategies ( http://www.surveymonkey.com/s/LZL9SD6).

The results of the survey will be used for articles in *Future Fellows* to help you and your fellow candidates—especially new candidates—to figure out which exam-taking techniques work best. ff

# Building a Winner: Predictive Analytics and Baseball

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in the major league stadiums, and that is a particularly daunting challenge. We are always trying to find ways to determine which pieces of data are meaningful and aggregate or summarize that information as best as possible.

There are also a lot of scouting reports; we have over 10,000 of those coming in every year. Knowing how to manage those reports effectively and integrate them into our predictive models is also a challenge.

**FF: It seems like most teams are using analytics now. What are some of the ways that teams can differentiate themselves?**

**CC**: Teams are invested in varying degrees. There are always new data sources emerging, and there may also be new opportunities in learning how to best analyze video or medical information. There are areas in which teams can better organize information and figure out how to apply that information in a data driven way.

**FF: How do you envision the baseball analytics world evolving over the next ten years?**

**CC**: I think that it is going to be about gathering new data and figuring out what to do with it. Performance data is out there for anyone to get and there are plenty of smart people who can analyze it and build good predictive models. The more teams can do to build proprietary data sets in cooperation with scouts and other people in the game, that is where I think some competitive advantage lies. ff

## Resources & Reminders

Use the CAS Web Site for:

- CAS *Syllabus of Basic Education* and updates
- "Notice of Examinations"
- "Verify Candidate Exam Status" to confirm that joint exams and VEE credits are properly recorded
- "Looking at the Exam Process" series
- Feedback button to the Candidate Liaison Committee
- CAS Regional Affiliates news

## *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*.


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# CAS Opens CERA Central

A flurry of activity followed CAS's approval as a CERA award signatory and the source for all of the details is the CERA page on the CAS Web Site (www.casact.org/CERA).

The CERA page currently includes:

- CERA credential requirements.
- Details on the Enterprise Risk Management and Modeling Seminar for CERA Qualification.
- Exam ST9 information.
- Recording of the January 24, 2012, Webinar on CERA Requirements.

In addition to the exam/seminar pathway, the CAS will continue to develop a second path, called the Experienced Practitioners Pathway (EPP), that would allow the CAS to award the CERA designation to existing members who are leading practitioners and who are considered, by virtue of their experience, to have demonstrated a level of knowledge and understanding of ERM comparable to that achieved by other designees. The CAS is seeking approval of this program now that it has been granted CERA award signatory status.

Visit www.casact.org/CERA for up-to-date details on the CAS CERA designation.

*Editor's Note: This article originally appeared in the February 2012 issue of* The Actuarial Review. ff