

The CAS Future Education Task Force (FETF) and the SOA Education Working Group (EWG) explored ways to improve their respective education systems and have proposed changes to the preliminary examinations. In response to the proposals from these two groups, the Joint CAS/SOA Task Force on Preliminary Education was formed to review the two sets of recommendations and make a final recommendation on joint educational activity between the CAS and SOA. The Joint Task Force has completed its work and recommended changes to the subjects covered by current Exams 1-4 to be effective in Spring 2005.

The CAS and SOA Boards recently approved the proposal. Changes to preliminary education will be effective starting in Spring 2005. A notice about these changes can be found in the “Admissions” section of the CAS Web Site, [www.casact.org/admissions/reports/033104.htm](http://www.casact.org/admissions/reports/033104.htm).

The new CAS preliminary education structure will consist of three categories: pre-requisites, subjects to be Validated by Educational Experience (VEE), and four examinations.

1. Pre-requisites are topics that will assist candidates in their exam progress and work life but will not be directly tested or validated:

- Calculus
- Linear Algebra

## 2. Subjects to be Validated by Educational Experience (Joint CAS/SOA):

- Economics
- Corporate Finance
- Applied Statistical Methods

- Exam 1 (Joint): Probability (with supporting Calculus), 3 hours
- Exam 2 (Joint): Mathematics of Finance, 2 hours
- Exam 3 (CAS Only): Statistics and Actuarial Models, 4 hours
- Exam 4 (Joint): Actuarial Modeling (Fitting Models and Credibility), 4 hours

Under the new VEE process, candidates will have to submit acceptable evidence in order to demonstrate knowledge of the above subjects. VEE can be accomplished in one of four ways:

- The CAS and SOA approve completion of one or more courses from a recognized college or university. To earn validation, a candidate must receive a grade of B- or better.
- Achieve a pre-set score on a standardized examination such as the Advanced Placement (AP) or College Level Examination Program (CLEP) tests.
- Completion of a CAS- or SOA-administered exam. The CAS will offer exams on the subjects under VEE through at least 2006.
- Completion of other educational experiences as approved by the CAS or SOA. The CAS/SOA will work to ensure that such experiences exist in sufficient quantity.

→ turn to inside 3<sup>rd</sup> panel

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.

*There is only **one** deadline for each set of exams. Late registrations will not be accepted.*

September 24, 2004

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Las Vegas, Nevada

*A special one-day registration fee of \$365 is available for active CAS candidates and non-CAS members for either the Basic or Intermediate Track.*

# Latitude: How American Astronomers Solved the Mystery of Variation

by Bill Carter and Merri Sue Carter (Naval Institute Press, 2002).

**Reviewed by Louis Sugarman, Candidate Representative to the Candidate Liaison Committee**

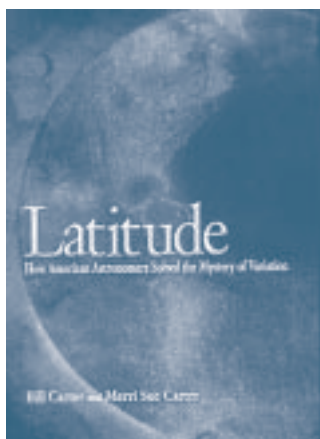
On a study break at the local library, I stumbled across this book detailing the efforts of 19th century astronomers to identify the variation in latitude. Leonard Euler had posited in the 1700's that the earth's axis should have a wobble (variation) with a period of ten months, but one-hundred years of astronomical effort had failed to confirm this hypothesis.

I found the book fascinating for several reasons. First, this is a solid story of American astronomers catapulting themselves to the forefront of the discipline. Second, Seth C. Chandler, whose work established the parameters of the variation, was an amateur astronomer in that he never went to college. Third, and most interesting, Chandler's first career was as an *actuary* in Boston. His 1872 paper in the *Journal of the Institute of Actuaries* is a modest prelude to his later, voluminous astronomical publications.

Chandler's story is worth reading for the example of his accomplishments with a practical rather than college education, for the example of his painstaking observations and calculations, and for the example of his determination in reaching conclusions others ignored because they did not fit the accepted theory.


The authors, a father and daughter

team of astronomers, give a full sketch of the key astronomers of the time. I particularly appreciated the way in which the authors traced the line of relationships from teacher to student. Carl Friedrich Gauss (1777-1855) was eighteen when he discovered the method of least squares. In fact, earlier versions of the normal distribution




have been referred to as the Gaussian distribution. Gauss, to return to the story at hand, oversaw the Ph.D. work of Benjamin Gould, an American who had gone to study astronomy in Germany. Gould, in turn, hired Chandler out of high school to work for him at the U.S. Coast Survey, doing calculations for the determination of longitude using telegraph signals. This was the practical education in math-


ematics, surveying, and instrument construction that would lay the foundation for Chandler's later measurements of variation.

In our profession, we soon realize that there is a great deal of data scrubbing to be done before even getting to serious analysis. And we are all conscious of the need to anticipate and defend against various clerical errors in the data (both the errors made by others and those we make ourselves). Without belaboring the comparison, I very much enjoyed the authors' moderately technical discussion of the difficulties of various geodesic and astronomic measurements. For example, in using telegraph signals to establish longitude, equations and calculations were carefully constructed to account and adjust for operator error. In leveling a telescope, the spirit level is read forward, then read in the reverse position, such that instrument errors can be divided out. When measuring present values and insurance accounting flows, such examples of concrete measurement errors and their corrections may be of some inspiration if not practical assistance. In a similar vein, Chandler's construction of several new astronomic instruments in his study of variation should inspire us to grasp and rework the fundamentals of our own received tools and methods. 

## Exam Reminders

- Examination results are available approximately eight weeks after the examination date. After the results are received at the CAS Office, a list of passing candidate ID numbers will be posted in the "Admissions" section of the CAS Web Site ([www.casact.org](http://www.casact.org)) between 3:00 p.m. and 3:30 p.m. Eastern time. Individual statements of examination results generally are mailed to candidates on the day that they are posted on the CAS Web Site.
- Remember your candidate number! To preserve candidate confidentiality, in the event of a lost or misplaced candidate ID number, the candidate ID number will be mailed to the candidate upon request. Under no circumstance will a candidate number be given over the telephone.
- Fall 2004 "Notice of Examinations" will be posted in July in the "Admissions" section of the CAS Web Site. It contains important examination information as well as updated information on review seminars and materials. 

### CAS Regional Affiliates Corner

For current information on all Regional Affiliates, please visit the "Regional Affiliates" section of the CAS Web Site. 

# Actuary As Black Belt

By Louis P. Sugarman, Candidate Representative to the Candidate Liaison Committee

**J**ames Kunce, mild-mannered actuary and family-man, is a Master Black Belt. But this is not his hobby, it is his job title!


Employers Reinsurance Corporation (ERC) is part of General Electric (GE), where “6-Sigma” application of statistical methods to business problems is a way of life. Motorola engineer Bill Smith is credited with coining the term 6-Sigma to describe the goal of eliminating variance from manufacturing processes out to six standard deviations, resulting in fewer than 3.4 defects per million operations. 6-Sigma has grown beyond manufacturing to become a pervasive business tool, with companies such as GE claiming that 6-Sigma defines their core business philosophy and culture. Those employees who complete GE 6-Sigma training are named 6-Sigma Black Belts. Black Belts generally spend two years in a special assignment applying their skills to a key business problem; this is a real opportunity to do highly visible, cutting-edge work.

Kunce leads a team of five Black Belts, one of whom is also an actuary. In addition to handling compliance and finance issues, their task is to improve the actuarial pricing and

reserving for ERC’s Commercial Primary Insurance Operation’s \$3B portfolio of business. Though 6-Sigma was originally an engineering discipline, it has also been applied in financial and accounting disciplines; there are entire journals and software packages devoted to this. The challenge for Kunce and his team has been to see where 6-Sigma

actuarial analysis, however, one does not usually give equal weights to each of the loss ratios from the past five years, nor does one give equal weight to policies with different underlying exposures. Kunce and his team have had to adapt the standard 6-Sigma software for their work, developing what they call the Data Ninja software package. Yes, that is really what they call it.

In college Kunce studied physics and astronomy. The reality of starting a family, however, led him to look for a practical use of his math skills. His father-in-law suggested insurance. Kunce enjoys actuarial work, because he feels it gives him a license to learn. “Actuaries can go to any department in the company and

ask serious questions.” Kunce urges all young actuaries to take advantage of this license at every opportunity. There are always business problems, and Kunce suggests that being at the center of solving those problems is the main reason to be at work. “Why show up just to plug and chug routine formulas?” poses Kunce. Why, indeed, should you be satisfied doing routine work, when you could be a Master Black Belt? 



**Career Profile on:**  
**James Kunce, FCAS**  
**Master Black Belt**  
**Employers Reinsurance**  
**Corporation, Overland Park, KS**

insight can add value to fundamental actuarial analysis.

It turns out that actuarial principles have required changes in the basic 6-Sigma calculations. 6-Sigma hypothesis testing or analysis of variance relies on simple averages: think of producing one-million units of product—each unit gets equal weight in any analysis. Similarly, in an accounting audit, sampling procedures assign an equal weight to each measurement. For

## Latin America Regional Committee: the Facts


By Alejandra Nolibos, FCAS, CAS Candidate Liaison Committee

**Mission:** During 2003, the CAS Latin America Regional Committee was formed to “facilitate the development and delivery of CAS services to members and candidates in Latin America, serve as liaison to local actuarial organizations and their members and coordinate CAS participation in their activities, promote local programs and seminars, develop and facilitate two-way communications between the CAS and local actuarial organizations, and serve an ambassadorial role.”

**Staffing:** Currently, the committee is fully staffed, and although most of its 12 volunteers work in the U.S., the committee truly showcases the diversity of current CAS membership. Sev-

eral of the practitioners who are part of this effort are foreign-born ACAS, FCAS, or Affiliate members of the CAS. Others are U.S. actuaries currently on assignment abroad. Most speak at least one foreign language, and all share an interest in broadening the geographical reach of the CAS, to support its efforts to become the “pre-eminent resource in educating casualty actuaries and conducting research in casualty actuarial science.”

**Specific goals:** To develop a prioritized list of potential contact organizations in each country (such as professional or employer associations, regulatory agencies and universities) by assessing the

size and nature of the constituencies served, as well as the range of activities sponsored by the organization. The committee will develop and launch a plan of action for each country based on that list to establish communication between the CAS and each organization, to support CAS members and candidates in each country, and to keep the CAS membership current on actuarial and insurance happenings in Latin America. 

*Are you a CAS candidate working in Latin America? Let the CAS Latin America Regional Committee hear from you! Visit [www.casact.org/members/committee/larc.cfm](http://www.casact.org/members/committee/larc.cfm).*

# MEET YOUR CANDIDATE REPRESENTATIVE

**Name:** Christina Abbott

**Candidate Representative to the CLC:**

Since December 2003

**Employment:** Actuarial Analyst at Accident Fund Insurance Company of America

**Current Location:** Lansing, MI

**Hometown:** Birmingham, AL

**Alma Mater:** University of Alabama – Birmingham (Go Blazers!)

**Exams Passed:** 1, 2, 5, 6

**Volunteer Work:** Leader of church youth group

**Hobbies:** Reading, traveling, hanging out with friends, desktop publishing, and researching her family tree

**Favorite Vacation Destination:** Caribbean

**Favorite TV Shows:** *The Apprentice*, *American Idol*, etc... “I guess I’m into the reality thing!”

**Interesting Fact About Christina:** She recently applied to be on the television show, *The Apprentice*.

**Why Should She Be on *The Apprentice*?:** “I think the traits necessary for a successful actuary are the same as for a leader or manager of a major corporation. Both require an understanding of human behavior, a certain level of creativity, and a detail-oriented nature.”

**Will You Ever Try Out For *American Idol*?:** “No. I cannot sing at all.” f



## BEHIND IN STUDYING AND TIRED OF TAKE-OUT?

Christina doesn’t seem to tire of take-out, but if she ever ventures into the kitchen during study season, she is likely to make “Chicken and Rice.” Her quick recipe is as follows:

### Ingredients

- 2 cans canned chicken  
(located in the tuna fish aisle of your local grocery store)
- 1 can cream of chicken soup
- 1 cup cooked rice

### Directions

Combine the chicken and cream of chicken soup, cutting the chicken chunks into the desired thickness. Heat the canned chicken and soup until hot. Pour over rice and enjoy! f

## Exam Changes

From cover

In order to reduce administrative costs, candidates will not be allowed to submit their VEE evidence until after they have passed two exams. However, there will be no time limit on when VEE experiences were completed. VEE administration details will be released in Fall 2004. Further details and learning objectives can be found in the CAS Preliminary Education Proposal: [www.casact.org/admissions/reports/CASPeProposal.pdf](http://www.casact.org/admissions/reports/CASPeProposal.pdf).

Changes to Exams 1-4 will be as follows. For Exam 1, direct testing of calculus will be removed, and the material will be narrowed to probability only. Calculus will be a pre-requisite and will be indirectly tested through probability questions on Exam 1. The subjects of economics and corporate finance that are tested on the current Exam 2 will fall under the VEE category rather than being tested on this exam. Exam 2 will then be limited to Math-

ematics of Finance (Interest Theory). The only change to Exam 3 will be the addition of statistics. Applied Statistical Methods (time series and regression) will be taken off the current Exam 4 and also moved to the VEE category. This should move the focus away from memorizing formulas for Exam 4 and towards analyzing data. Exams 1, 2, and 4 will remain joint exams with the SOA, and Exam 3 will remain a CAS only exam.

### Expected Implementation Timeline:

- Late Spring/Early Summer 2004 – Syllabus details for new Exams 1-4 released
- Fall 2004 – VEE administration details released
- November 2004 – Final administration of current preliminary exams
- January 2005 – VEE course approval requests may be submitted
- May 2005 – First administration of new preliminary exams f

## Transition Rules

The following transition rules will apply to the revised preliminary education structure:

Current Credit	Credit Under New System in 2005
Exam 1	Exam 1
Exam 2	Exam 2 plus VEE for Economics and Corporate Finance
Exam 3	Exam 3
Exam 4	Exam 4 plus VEE for Applied Statistical Methods

In addition, the transition rules in the chart below will apply for candidates with unused credit from exams administered prior to 2000.

Unused Pre-2000 Credit	Credit Under New System in 2005
Exam 3A	VEE for Applied Statistical Methods
Exam 4A	Exam 2
Exam 4B	Exam 4
Exam 5A	VEE for Economics
Exam 5B	VEE for Corporate Finance



# Syllabus' update 04

Check out the "2004 Syllabus Updates" in the "Admissions" section of the CAS Web Site for the latest information.

## Exam 3

A revised version of "Course/Exam 3 Study Note Replacing Chapter 2 Material from Loss Models" by Klugman has been posted online. Please use the fourth printing, December 1, 2003.

The third bullet of Learning Objective A6 has been removed from the syllabus for 2004 ["Apply assumptions about the pattern of failures between integral ages to obtain the associated (discrete) single decrement models from a discrete multiple decrement model as well as the discrete multiple decrement model that results from two or more discrete single decrement models"].

## Exam 4

A revised version of "Estimation, Evaluation, and Selection of Actu-

arial Models" by Klugman has been posted online. Please use the third printing, December 1, 2003. [Available in the "Admissions" section of the CAS Web Site under Web Notes or as SOA Study Note 4-23-03.]

## Exam 6


An erratum has been published for Peck's discussion of Stanard's article, "A Simulation Test of Prediction Errors of Loss Reserve Estimation Techniques." The 2004 Exam 6 Web Notes have been updated accordingly.

The eighth edition of the IASA text, *Property-Casualty Insurance Accounting*, has been published and will be used as the official edition for Exam 6 in Fall 2004. The citations are the same as listed for

the seventh edition: Chapters 4 (Earned and Unearned Premiums), 6 (Written Premiums), 7 (Losses and Loss Adjustment Expenses), 11 (Reinsurance Accounting), and Appendix F (Glossary of Accounting Terms).

## Exam 9

Citations for the NCCI *Experience Rating Plan Manual for Workers Compensation and Employers Liability Insurance* (as of March 1, 2003) and *Retrospective Rating Plan Manual for Workers Compensation and Employers Liability Insurance* (as of July 1, 2003) are detailed in the 2004 Exam 9 Study Kit and Update.

For "An Application of Game Theory: Property Catastrophe Risk Load" by Mango, exam questions will not be drawn from Section 9. 

## CAS Vendor Information

The CAS provides vendor information on review seminars and study aids as a service to its candidates. CAS takes no responsibility for the accuracy or quality of the seminars and study aids announced in Future Fellows.

### Actex Publications/Mad River Books

www.actexamdriver.com  
Exams 1, 2, 3, 4, 6

### Actuarial Bookstore

www.actuarialbookstore.com  
Exams 1, 2, 3, 4, 6

### Actuarial Science Program/RMI

samcox@gsu.edu  
Exams 2, 3, 4

### Actuarial Study Manuals

www.studymaterials.com  
Exams 1, 2, 3, 4

### All 10, LLC

www.all10.com  
Exams 6, 9

### Austin Actuarial Seminars

www.actuarialseminars.com  
Exams 3, 4

### BPP Professional Education

www.bpp.com  
Exams 1, 2, 3, 4

### Prof. Sam Broverman

www.sambroverman.com  
Exams 1, 2, 3, 4

### Casualty Actuaries of the Mid-Atlantic Region

sbm.temple.edu/~rmidept/actSci.htm  
Exams 1, 2, 4, 6, 9

### Casualty Study Manuals

www.csmanuals.com/csframe.htm  
Exams 1, 2, 3, 4, 6, 9

### New England Actuarial Seminars

www.neas-seminars.com/misc  
Exam 2, 3, 4, 6, 9

### Midwest Actuarial Forum

www.casact.org/affiliates/maf  
Exams 3, 4

### G. V. Ramanathan

www.actuarialexamprep.us  
Exams 1, 3

### SlideRule Books

www.sliderulebooks.com  
Exams 1, 2, 3, 4, 6 



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

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# Representative Sought for Candidate Liaison Committee

The CAS Candidate Liaison Committee is looking for a person taking CAS exams to join the committee as an official candidate representative. The selected person would be an active participant on the *Future Fellows* editorial board. The representative would be responsible for presenting candidate views to the committee to help identify issues that should be addressed by the CAS. The candidate must meet the following requirements:


- Be a candidate for the Casualty Actuarial Society;
- Be active in the examination process (must have sat for a CAS examination within the last two sittings);
- Be willing to serve a two-year term; and
- Participate in the Candidate Liaison Committee meetings (quarterly telephone conferences and an annual in-person meeting).

The new representative will be selected in late July. The two-year term will begin in early September.

An application is available in the "Admissions" section on the CAS Web Site ([www.casact.org](http://www.casact.org)) or may be obtained by contacting the CAS Office. The application deadline is July 7, 2004. 

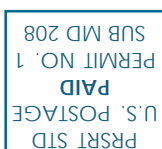
## *Learning Objectives and Knowledge Statements*

# Feedback on New Syllabus Format Sought

Candidates who studied for CAS Spring 2004 Exams 3, 5, 7, and 8 are encouraged to provide feedback on the revised format of the CAS *Syllabus of Examinations*. The 2004 edition contained for the first time explicit learning objectives and related knowledge statements in addition to the syllabus readings. The "New *Syllabus* Format Survey" will be available in the "Admissions" Section of the CAS Web Site until July 16, 2004. 



Verify your exam status in the "Admissions" section of the CAS Web Site. It is important that credit for joint CAS/SOA Exams is properly recorded.



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