

# RISKY BUSINESS

—News and notes on the Actuarial Studies Program—

Department of Mathematics

Spring 2000

The University of Texas at Austin

## From the Director



I'll always think of this academic year as The Year of the New. And I don't just mean the new millennium.

So what's new this year? The SoA & CAS exam systems; the UT-Austin classes to cover the first four Joint Exams; a person to help with the actuarial program by teaching Interest Theory each spring; the SoA & CAS classification of actuarial programs; our M.A. program for actuarial students; and almost certainly the equivalent of an actuarial undergraduate major. See other *Risky Business* articles for more detail.

Having taught the new curriculum for several months now, I'm positive that it is more sophisticated mathematically than what it replaced. And each exam covers greater content.

It will take some time to see the impact of all these changes. Once people with transition exam credit disappear, I expect the typical well-prepared undergraduate actuarial student to graduate with one exam passed (Joint Exam 1), those that start the program as a freshman possibly to have passed two (Joint Exams 1 and 2), and the truly accomplished to have passed three (Joint Exams 1, 2, and 3). I expect master's students will average one exam more.

Thanks for all your support again this year.

*Jim Daniel, Director*

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*Risky Business* expenses are paid with gift funds from friends of the program.

## Two new degrees set B.S. proposed M.A. underway

Last spring the Mathematics Department recommended to the UT-Austin administration a restructuring of its undergraduate degrees, including creating a formal Actuarial Science Option within the B.S. in Mathematics. If approved as expected—a decision is due this summer—this would in effect constitute an undergraduate actuarial major starting next fall.

This would be a challenging degree. In addition to general education classes (English, foreign language, history, and so on), students selecting this would be required to take calculus, linear algebra, probability, statistics, one proof-oriented class, interest theory, three semesters of economics, accounting, finance, three of the four classes that cover all of Joint Exam 3 and 35% of Joint Exam 4, and nine or ten additional junior/senior hours in Mathematics or Risk Management or other specified business classes—a total of almost 60 hours of actuarially-oriented classwork.

As has been the case since 1989, Actuarial Studies would still also be available as an informal concentration for students in any major. Unless more students arrive at UT-Austin knowing they want to be actuaries, we expect that only a minority of graduating actuarial students will have followed the Actuarial Science Option within the B.S. in Mathematics. The remainder will be our usual eclectic mix of students with majors throughout the arts and sciences, business, and engineering.

## How to prepare for new Exams 3 & 4?

What's it going to take to prepare for new Joint Exams 3 and 4? How much studying will be needed? The following are Jim Daniel's thoughts.

SoA folks should consider the following. I used to teach eight semester-credit-hours (hereafter, "hours") to cover the old SoA Exam 150 life-contingencies material, and had planned to teach three hours for SoA Exam 151 on risk theory. I'm now

Graduate students are being admitted for next fall to a new actuarial focus within the existing Master of Arts degree in Mathematics.

In recent years, the Mathematics Department has admitted only students seeking a Ph.D. degree. Last spring it approved a proposal to admit students seeking only an M.A. degree in Mathematics with an actuarial focus provided that they complete a very structured program.

Details on the requirements can be found on the Web at [www.utexas.edu/depts/acs/MA.html](http://www.utexas.edu/depts/acs/MA.html). Thirty hours of coursework (usually ten classes) are required. This coursework must include the three classes covering Joint Exam 3 and at least three courses from a recommended-class list including Joint Exam 4 courses, economics, finance, statistics, risk management, and management (and information) science.

In addition, each student must complete a master's report on an actuarial project, preferably a project done as part of an actuarial internship with an actuarial employer. [Employers interested in working with such students should contact Jim Daniel.]

About a dozen students had applied for admission to the program by the somewhat-flexible deadline of 1 February. Most of these have very high scores on the quantitative portion of the Graduate Record Exam. It appears that about three to six will start the program next fall.

spending the same 11 hours covering the content for new Joint Exam 3. And the mathematical sophistication required in the new material on Exam 3 is appreciably greater than that for either 150 or 151.

*See Exams 3 & 4 on page 3*



## Welcome, Leslie!

This semester Dr. Leslie Vaaler took over the teaching of the actuarial program's interest-theory class. She thus enables Jim Daniel to add another class to the actuarial program, and he is alternating between two Joint Exam 4 classes each spring semester.

Last spring's *Risky Business* announced that Ms. Corinne Irwin would take over interest theory, but personal matters prevented her from doing so; the actuarial program was extremely fortunate that Leslie Vaaler was interested in taking on this task.

Leslie (then Federer) received her Ph.D. in pure mathematics from Princeton in 1982 and then held a series of distinguished research-oriented positions. She later decided on a teaching-oriented career and joined the faculty at Washington and Lee University, a very selective small college.

She moved to UT-Austin as a Lecturer in 1988 to join her then-fiancé, Math's own Professor Jeff Vaaler. After marrying Jeff in 1989, she taught full time for the Math Department through 1989-90, where she compiled a strong teaching record. After taking time out for childbirth and full time motherhood, she returned to part-time teaching here in fall 1998.

The Actuarial Studies Advisory Council met Leslie at its fall meeting; Council members, students in this semester's interest-theory class, and Jim Daniel all find her a wonderful addition to the program and look forward to possible expansion of her role.

### Javier "Harv" Aranda Santa Rosa, TX

Graduating in May 2003 in Math. Led high school math team to five UIL state championships. Interested in running, basketball, music, reading.

# SoA, CAS classify programs

UT-Austin appears on two new SoA/CAS lists: one, with only about 45 U.S. programs providing extensive undergraduate actuarial education; the other, with only about 25 U.S. programs providing graduate actuarial education.

These lists replace the former SoA list of about 55 U.S. "full actuarial programs" and reflect how the programs are covering the new YK2 exam syllabi. For details, see [www.soa.org/academic/actcol.html](http://www.soa.org/academic/actcol.html).

To be listed on the new Advanced Undergraduate list, a program must in effect offer the equivalent of an undergraduate major. It must offer courses covering the content of new Joint Exams 1 and 2 and at least 12 semester-credit-hours of material for Joint Exams 3 and 4, including contingent payment models, and frequency and severity and aggregate-claim models. UT's program does this, and the closest competing programs are 700 miles away (Maryville in St. Louis, and Nebraska).

To be listed on the new Graduate Education or Graduate Education and Research lists, a program must in effect offer the equivalent of a master's degree. It must offer courses covering the content of Exams 1, 2, 3, and 4. For the Education and Research list, it must provide additional actuarially-related classes and have an active program in actuarial research. UT's program does this, and the closest competing programs are over 800 miles away (Drake, Georgia State).

Check out our Website:  
<http://www.utexas.edu/depts/acs/>  
for resumés, classes, program info.

### Daniel Schwanke Houston, TX

Credit for new Exams 1 & 2,  
graduating in May 2001 in Math.  
Interested in soccer, running, music.

## Daniel elected to posts in MAA, E & R section of SoA

This winter Jim Daniel was elected to some leadership positions in the 27,000-member Mathematical Association of America (MAA)—the primary professional organization of college and university mathematics teachers.

Jim's election to the three-person Budget Committee makes him a member of the Board of Governors and the 10-person Executive Committee, as well as of other committees on financial matters. His term is for four years, with re-election possible.

He has long been active in MAA matters, most recently having chaired for six years the various committees that supervise the MAA's publications: three journals, seven book series, a student magazine, and a Web site. He has for several years organized a yearly session on actuarial education at the national MAA meeting in January.

In the fall, Jim was also elected to the governing Council of the SoA's Education and Research Section. Because of the difficulty of attending both the many MAA committee meetings and the Council meetings, he has resigned his Council seat effective at the end of the first year of his two-year term.

## Actuarial Studies Advisory Council

The ASAC meets each fall to provide advice on the operation of the program, hear a detailed report on the use of gift monies, brainstorm on future activities, and assist with fund-raising plans.

The fall 1999 meeting was dominated by discussion of various changes related to the revised actuarial exam system and the revised UT-Austin classes. After the meeting, the usual reception for ASAC members and actuarial students was a lively success.

Present ASAC members are: Wayne Barnard of American General Insurance, Houston; Malcolm Brachman of Northwest Oil, Dallas; Frank Broll of American National Insurance, Galveston (ASAC Chair); John Butcher of Tillinghast/Towers Perrin, Dallas; Jim Davis of Milliman & Robertson, Dallas; Phil Dial of Rudd & Wisdom, Austin; Brian Forman of Columbia Universal Life, Austin; Valerie Lopez of Towers Perrin, Chicago; Norman Parrish of Hewitt Associates, The Woodlands; Arlie Proctor of Scruggs Consulting, Argyle; Roger Ray of Watson Wyatt Worldwide, Dallas; Tammy Shelton of Buck Consultants, Dallas; Glenn Tobleman of Lewis & Ellis, Richardson; Linda Walker of William Mercer Co., Houston; and Geoff Werner of USAA Insurance, San Antonio.

# Nine make Associate

Starting with the 1994 issue, *Risky Business* has attempted to identify all new Associates that have come through the UT program since its move to Mathematics. No attempt is made to recognize other important status changes, however: Fellowship, membership in the Academy, marriage, parenthood, Lotto winnings, and the like. We don't have a team of reporters, remember!

To the best of our knowledge, only the following persons that were UT actuarial students since fall 1989 have become Associates since last year's *Risky Business* (omissions are regretted, and corrections will be appreciated).

Sonja Allan Coffin, A.S.A., Ernst & Young (Dallas)  
Courtney Dubbs, A.S.A., William M. Mercer, Inc. (Houston)  
Tom Kenning, A.S.A., American National Insurance (Galveston)  
Peter Latshaw, A.C.A.S., USAA Insurance (San Antonio)  
Theresa Lee, A.S.A., American General Insurance (Houston)  
Shangjing Li, A.C.A.S., Tillinghast/Towers Perrin (Atlanta)  
Joshephine Teruel Richardson, unaffiliated (Chablee, GA)  
George Sanger, Hewitt Associates (The Woodlands)

*Congratulations!*

## Writing assignments return to program

Those hated writing assignments have returned to UT's life-contingencies classes.

Students from the last several years no doubt recall the so-called Descriptive Analyses required in the second of the two classes covering life contingencies. These were four-to-six page papers sometimes explaining technical ideas and requiring students to write clearly. *Verbs?! Sentences?! Paragraphs?!*

The surprise loss of the writing grader on short notice led to the elimination of those assignments in the 1998-99 school year. Since communication skills are so important for actuaries, the Actuarial Studies Advisory Council urged the return of the assignments. And so they're back—in the spring class covering most of the life contingencies material on Exam 3.

In the ideal assignment, students would read two or three pages of technical analysis and calculation and would then be required to write a report, including an Executive Summary, explaining the issues and conclusions for non-technical readers. The difficulty lies in finding such "two or three pages of technical analysis and calculation".

Jim Daniel has no such examples and instead relies on assignments that require students to perform and explain some calculations or to interview people—about their attitudes toward insurance, for instance—and report on the results. Anyone that could supply Jim with concrete examples of "two or three pages of technical analysis and calculation" should contact him. *Please!*

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## E-mail forwarding available for alums

*The Texas Exes—UT's alumni association—now provides free e-mail forwarding for life for former UT students. You receive a permanent e-mail address, and incoming e-mail is automatically forwarded to your current e-mail address. For information, see [www.alumni.utexas.net/](http://www.alumni.utexas.net/).*

## Alum-organized mock interviews help students

Alumni of the UT actuarial program offer students the opportunity to practice their interviewing skills at Mock Interview sessions held on campus at the beginning of both the fall and spring semesters.

This event, sponsored by the UT Actuarial Alumni Association (UTAAA), has received extremely positive student feedback. In the midst of such a strong job market, actuarial students are discovering the importance of effective interviews and solid resumes.

Students attend these sessions to receive advice and hints about frequently asked interview questions, key information employers look for on a resume, the types of candidates employers like to pursue, etc. The one-on-one interview, followed by an individual evaluation, allows students to receive immediate feedback to better prepare themselves for actual job interviews.

This past school year, alumni from the following companies volunteered their time: American General, Buck Consultants, Hewitt, Mercer, Milliman & Robertson, USAA, and Watson Wyatt.

Recent alumni interested in joining the UTAAA or volunteering at the Mock Interviews should contact the UTAAA Chairperson:

Lillian Cho  
Milliman & Robertson, Inc.  
9400 N. Central Expressway, #1000  
Dallas, TX 75231  
Phone: 214-863-5500  
E-mail: [lillian.cho@milliman.com](mailto:lillian.cho@milliman.com)

## Exams 3 & 4 continues

The story is similar for CAS folks. I used to spend seven to eight semester-credit-hours (hereafter, "hours") to cover the old CAS Exam 4A life-contingencies and 4B loss-models material, plus about three hours for the 4A interest-theory material. I'm now spending the same 11 hours covering the content for new Joint Exam 3. And the mathematical sophistication required in the new material on Exam 3 is appreciably greater than that for either 4A or 4B.

I think that student actuaries preparing for new Joint Exam 3 are going to need

more time than they needed for SoA Exams 150 and 151 together, and more time than they needed for CAS Exams 4A and 4B together. Many students in my former SoA Exam 150 intensive seminars had started studying four to five months before the exam; I suspect that that needs to be six to seven months for Joint Exam 3.

The story for Exam 4 is similar; for example, I spend nine hours covering that material—more than that for the old 150 exam, triple that for the old 4B exam.

Student actuaries and employers need to adjust their study plans, study programs, and expectations.



# Focus on students

## Financial-aid honor roll

With educational costs continuing to rise faster than inflation, funding for financial aid continues as the program's biggest need. Most scholarships are funded by directed gifts from companies and individuals, although the George Jordan, Jr., Scholarships are funded from the many annual discretionary gifts, small and large, from both individuals and companies.

Outstanding students receiving merit-based financial aid from the actuarial program during academic year summer 1999 through spring 2000 included:

Actuaries Club of the Southwest Scholarships: Connie Chen, Sarah Fowler, Samuel Hau, Elvina Richardson, Brian Sprawka

AEGON Insurance Group Actuarial Mathematics Scholarships: Sarah Fowler, Elvina Richardson

William W. Hand Memorial Actuarial Scholarship (American Society of Pension Actuaries): Kevin Zagortz

George R. Jordan, Jr., Actuarial Scholarships: Kyle Hood, William Mantzel, Jessica McLeod, Kale Sears, Natali Teszler, Adrienne Wagner, Kevin Zagortz

Milliman & Robertson Standard of Excellence Actuarial Scholarship: Stella So  
C. Mitchell Actuarial Scholarship: Samuel Hau

Rudd and Wisdom Actuarial Studies Scholarship: Daniel Schwanke  
D. W. Simpson & Co. Scholarship: Elvina Richardson

Southwest Actuarial Forum Scholarships: Eddie Bradford, Kyle Hood, William Mantzel, Elvina Richardson, Stella So

Towers Perrin Actuarial Scholarship: Brian Sprawka  
USAA Actuarial Scholarships: Eddie Bradford, Sarah Fowler

Watson Wyatt Actuarial Scholarships: Eddie Bradford, Connie Chen, Kevin Zagortz

Eugene Wisdom Memorial Scholarship in Actuarial Studies: William Mantzel

Actuarial Studies Excellence Awards (Fireman's Fund and USF&G merit-based loan program to assist the Texas Department of Insurance): Eddie Bradford, Carlton Greenhaw, Tuner Hall, Samuel Hau, Myra Seals

Texas Department of Insurance Internship (Fireman's Fund and USF&G program to assist the Texas Department of Insurance): Dathan Camacho, Connie Chen, Tuner Hall, Christine Neilsen, David Rhea, Elvina Richardson, Myra Seals

*Congratulations to you all!*

## Job market flaming hot

The job market for UT actuarial students is the hottest here in over a decade.

Last year there were a couple of May/August graduates that did not provide resumés for mailing in February because they had already accepted jobs or were considering only the companies that interviewed them in the fall. This year the majority of the students were in that position.

By early February, the following had accepted jobs and others were about to do so: Connie Chen (Hewitt, Dallas), Elizabeth DeVaul (Watson Wyatt, Chicago), Christine Neilsen and Ashlee Tolle (Towers Perrin, Houston), Stella So (Saloman Brothers, New York), Natali Teszler (Texas Department of Insurance, Austin), Kevin Zagortz (Watson Wyatt, Dallas), and Amanda Zukowski (Mercer, New York). As a result the February permanent-job resumé booklet contained information on only four May/August graduates.

The future may see fall-only recruiting for May/August graduates.

The hot job market has also trickled down to the summer-internship level. A few years ago companies rarely interviewed on campus for summer interns; now most do so as part of their entry-level recruiting visit. And we're starting to see some summer interns hired by early winter.

## Actuarial Student Club having tasty year

As the job market gets tighter, the recruiting process becomes increasingly tasty. Students are being whisked through a world of free food and grab-bag prizes—hopefully on their way to landing a high paying job of their choice with or without an exam.

This year we have been treated to everything from an elegant dinner at one of Austin's nicest steak houses to a catered dinner at the ritziest country club in town. Companies have given us chocolate and gum with their name on it and shirts with the company's logo embroidered on it. Club members are enjoying the year—and appreciate the interest.

While this is great for us students, I'm concerned about our lower exam pass rates. When students are likely at present to get a job regardless of whether or not they pass a test, there is much less incentive to do so. There's unmet demand for students, and increasing the supply is the only solution. The Actuarial Student Club is considering creating an advertisement for the actuarial program that we could mail to central Texas high schools.

The Club has held study sessions for actuarial exams and before tests in classes. This term we are planning other activities as well.

*Eddie Bradford, President*

**Adrienne Wagner**  
**Houston, TX**

Credit for new Exam 1, old SoA 140.  
Graduating in May 2001 in Math.  
Interested in UT Club soccer, camping, needlework.

**Brian Sprawka**  
**Victoria, TX**

Credit for new Exam 1.  
Graduating in May 2002 in Finance and Business Honors.  
Interested in investments, weightlifting, cooking, running, church.