

# actuarialREVIEW

VOL 51 / NO 2 / MARCH-APRIL 2024

PUBLISHED BY THE CASUALTY ACTUARIAL SOCIETY 

TELL

A

STORY

*Get Results*

The 2023 CAS Volunteer Awardees: In Their Own Words

Shopping For Data



**Trusted by actuaries  
worldwide.**



[www.actuarialcareers.com](http://www.actuarialcareers.com)  
800.766.0070

# The Perfect Fit...

**It Takes One to  
Know One...  
An Actuary  
Placing Actuaries**

To have Pauline personally  
advise you on finding your  
perfect fit, please contact her at:

✉ [pauline@ppryor.com](mailto:pauline@ppryor.com)

🌐 [www.ppryor.com](http://www.ppryor.com)

☎ (516) 935-0100 x 307 or  
(866) 6-ACTUARY

For five decades, local, national,  
and international insurance  
communities have benefited from  
Pryor's exceptional recruitment  
services.

Our renowned Actuarial, Risk, and  
Modeling Division has been directed  
by Pauline Reimer, ASA, MAAA, for  
the past thirty-five years.



# Beyond numbers

Alternative  
Markets

Enterprise Risk  
Management

Legislative  
Costing

Litigation  
Support

Loss  
Reserving

Predictive  
Analytics

Pricing and Product  
Management

Reinsurance

## Commitment Beyond Numbers

**You have unique strategic goals, and we provide tailored solutions to your business challenges.**

As a full-service actuarial firm, our mission is simple: we provide professional expertise and superior customer service. Through data-driven research presented with clear communication, we work hard to provide substantial value to your business. **You can trust Pinnacle's commitment** to look beyond today's numbers in planning for tomorrow.



[pinnacleactuaries.com](http://pinnacleactuaries.com)

# actuarialREVIEW

March-April 2024



## departments

4

### EDITOR'S NOTE

- What's the Story, Morning Glory?

6

### PRESIDENT'S MESSAGE

- Learning from Others

9

### MEMBER NEWS

- Comings and Goings
- Calendar of Events
- Meet the Veep
- In Remembrance
- CAS Staff Spotlight
- Thanks to Our PCPA Volunteers
- Downtime
- CAS Research, Marketing and Communication Efforts Are Recognized with Five Industry Awards
- Bordeleau-Tassile Wins the CAS 2023 Hacktuary Challenge

28

### PROFESSIONAL INSIGHT

- State of the California Property Market
- Inflation: A View from the Top
- On the Shelf

34

### ACTUARIAL EXPERTISE

- Shopping For Data
- The Rise of Open-Source Tools for Actuaries

40

### SOLVE THIS

- It's a Puzzlement



FSC  
LOGO



## on the cover

### Tell a Story; Get Results

22

By LAURIE MCCLELLAN

Storytelling can be an actuary's secret weapon.

### The 2023 CAS Volunteer Awardees: In Their Own Words

18

Learn about these winners' journeys in volunteerism with the CAS.

### Shopping For Data

34

By JIM WEISS

They say you are what you eat. Are your feeding your analyses the right data? That may depend on where you're shopping for it.

*Actuarial Review* (ISSN 10465081) is published bimonthly by the Casualty Actuarial Society, 4350 North Fairfax Drive, Suite 250, Arlington, VA 22203. Telephone: (703) 276-3100; Fax: (703) 276-3108; Email: [ar@casact.org](mailto:ar@casact.org). Presorted standard postage is paid in Lutherville, MD. Publications Mail Agreement No. 40035891. Return Undeliverable Canadian Addresses to PO Box 503, RPO West Beaver Creek, Richmond Hill, ON L4B 4R6.

The amount of dues applied toward each subscription of *Actuarial Review* is \$10. Subscriptions to nonmembers are \$50 per year. Postmaster: Send address changes to *Actuarial Review*, 4350 North Fairfax Drive, Suite 250, Arlington, Virginia 22203.

# actuarialREVIEW

The magazine of the  
Casualty Actuarial Society

## Editor in Chief

Jim Weiss

## AR Managing Editor and CAS Director of Publications

Elizabeth A. Smith

## CAS Editorial/Production Manager

Sarah Sapp

## CAS Managing Editor/Contributor

Donna Royston

## CAS Graphic Designer

Sonja Uyenco

## Copy Editors

Colleen Arbogast	Benjamin Kosofsky
Rebecca Armon	Julie Lederer
Daryl Atkinson	David Levy
Karen Ayres	Stuart Montgomery
Glenn Balling	Erin Olson
Aklema Begum	Shama S. Sabade
Robert Blanco	Michael Schenk
Sumanth Chebrolo	Robert Share
Sara Chen	Craig Sloss
Todd Dashoff	Rebecca Sze
Daniel Jay Falkson	Takunda Taimu
Charles Grilliot	Bradley Arthur Waller
Stephanie Groharing	James Weiss
Julie Hagerstrand	Radost Wenman
Srinand Nagendra Hegde	Ian Winograd
Kenneth S. Hsu	Nick Witrass
Fahim Hussain	Gerald Yeung
Wesley Jenq	Xuan You
Rob Kahn	Yuhan Zhao
Rebecca Knackstedt	

## Opinions Editor

Richard B. Moncher

## Explorations

Glenn G. Meyers  
James C. Guszczka  
Stephen Mildenhall

## Puzzle

Jon Evans  
John P. Robertson

## Advertising

Al Rickard, 703-402-9713  
[arickard@assocvision.com](mailto:arickard@assocvision.com)



Expertise. Insight.  
Solutions.®

**The Casualty Actuarial Society is not responsible for statements or opinions expressed in the articles, discussions or letters printed in *Actuarial Review*.**

For permission to reprint material from *Actuarial Review*, please write to the editor in chief. Letters to the editor can be sent to [AR@casact.org](mailto:AR@casact.org) or the CAS Office. To opt out of the print subscription, send a request to [AR@casact.org](mailto:AR@casact.org).  
Images: Getty Images

© 2024 Casualty Actuarial Society.  
[ar.casact.org](http://ar.casact.org)

## editor'sNOTE By JIM WEISS, AR EDITOR IN CHIEF

### What's the Story, Morning Glory?

An actuary opens a magazine and has their eyes opened to the splendor of their own story, but their name does not appear a single time in the magazine.

What on Earth did they read?! Certainly, artificial intelligence (AI) can assemble textual and photographic artifacts about people, places and things into a snappy and eloquently narrated timeline. But is an actuary's timeline any more their story than the ink on the pages of *AR* or the pixels on the *AR* landing page?

Said differently: Is the story of an actuary about the inflationary trends they analyze, the data sets and coding tools they use to do so, the marathons they run, the books they read, or any of the other exciting topics our authors cover in this month's issue?

Or rather: Is it what they see, feel and experience during each episode that will ultimately bring the chapters and volumes of their stories to life? Perhaps after reading our cover story on storytelling, readers will see their own stories as even more exciting and important than previously thought.

As readers process this issue, they may also consider how the stories we feature intersect with their own. For

example, what led 42 CAS volunteers to come together and co-author the Property and Casualty Predictive Analytics (PCPA) project? It's likely that a few anecdotes spurred developing the plan for the PCPA. In this *AR*, we recognize those who collaborated on this exciting new chapter for the CAS that evokes the spirit of volunteerism and our commitment to excellence.

Among our other stories, Dale Porfilio's "State of the California Property Market," features four perspectives on a complex issue (the future of which is still being written). You may (or may not) have perspectives on this report on a 2023 Annual Meeting session. Why should California matter to someone who lives in the Midwest or Northeast? A good story, however, has a universal quality — what can be gleaned from this story and applied to your own?

In Remembrance pays tribute to two beloved actuaries who left us recently. What wonderful stories they had! In reading this and past In Remembrance columns, these members' stories can continue.

We hope you enjoy all the stories in this issue and thank you for making *AR* a continued part of your story. ●

*Actuarial Review* welcomes story ideas from our readers. Please specify which department you intend for your item: Member News, Solve This, Professional Insight, Actuarial Expertise, etc.

SEND YOUR COMMENTS AND SUGGESTIONS TO:

*Actuarial Review*

Casualty Actuarial Society

4350 North Fairfax Drive, Suite 250

Arlington, Virginia 22203 USA

Or email us at [AR@casact.org](mailto:AR@casact.org)

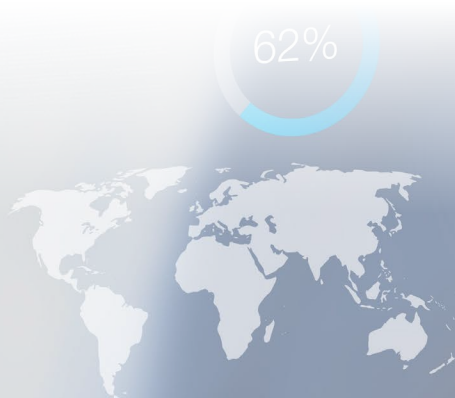
### Follow the CAS







# Obtain Your Credentials in Predictive Analytics and Catastrophe Risk Management From The CAS Institute



## Certified Catastrophe Risk Management Professional (CCRMP) and Certified Specialist in Catastrophe Risk (CSCR)



The International Society of Catastrophe Managers (ISCM) and The CAS Institute (iCAS) have joined together to offer two credentials in catastrophe risk management. The Certified Catastrophe Risk Management Professional (CCRMP) credential is available to experienced practitioners in the field through an Experienced Industry Professional (EIP) pathway. The Certified Specialist in Catastrophe Risk (CSCR) credential is available both through an EIP pathway and an examination path.

Required assessments and courses for earning the CSCR include:

- Property Insurance Fundamentals
- Catastrophe Risk in the Insurance Industry
- Introduction to Catastrophe Modeling Methodologies
- The Cat Modeling Process
- Online Course on Ethics and Professionalism

Some exam waivers are available for specific prior courses and exams.

For more information,  
visit [CatRiskCredentials.org](http://CatRiskCredentials.org).

## Certified Specialist in Predictive Analytics (CSPA)



The CAS Institute's Certified Specialist in Predictive Analytics (CSPA) credential offers analytics professionals and their employers the opportunity to certify the analytics skills specifically as applied to property-casualty insurance. The program focuses on insurance as well as technical knowledge and includes a hands-on modeling project that challenges candidates to apply what they have learned throughout their studies to address a real-world scenario.

Required assessments and courses for earning the CSPA include:

- Property-Casualty Insurance Fundamentals
- Data Concepts and Visualization
- Predictive Modeling — Methods and Techniques
- Case Study Project
- Online Course on Ethics and Professionalism

Some exam waivers are available for specific prior courses and exams.

For more information,  
visit [TheCASInstitute.org](http://TheCASInstitute.org).



## Learning from Others

In my last President's Message, I talked about collaboration as a key theme for this upcoming year, as well as a few priorities for the year. This month, I'd like to give you an update on meetings I attended within and outside of the CAS to strengthen collaboration and to learn about what's happening more broadly across the actuarial profession.

### Meeting the Executive Council

Every month, I meet with the [CAS vice presidents](#), our CEO and his leadership team in the CAS Executive Council. Since I'm early in my term, I asked the team for "[a Rose, a Bud, and a Thorn](#)" (or a mini status report) to get to know a bit about the highlights, plans and concerns for each area. Here are some of the roses and buds shared from that exercise:

1. [Avraham Adler is now a co-editor for Variance](#).
2. We launched our new [University Recognition Program](#).
3. The [floating exam break](#) went live in the fall exam sitting last year.
4. The call for reserving papers garnered a strong response.
5. The "Big 5" CAS Meetings collaboration, a focused effort to enhance

our larger meetings and seminars with input from various CAS Office departments, has started. (The "Big 5" are Spring and Annual Meetings, RPM, Reinsurance and Reserves Seminars.)

6. We held our second China Summit with 270 attendees, which was kicked off by a video from our President-Elect Dave Cummings.

In doing this exercise, my hope is that we'll be able to increase awareness across the various areas in which our multitude of passionate volunteers (nearly 3,000) are working and to generate some cool cross-collaborations.

### Meeting other actuarial organizations

Over the past few months, I've participated in a few bilateral meetings with other actuarial organizations like the [Institute and Faculty of Actuaries](#) and the [Institute of Actuaries of India](#). These meetings are a great way to learn about issues facing actuaries more broadly, as well as find areas for collaboration. Topics from these conversations range from education and outreach to climate risk and the need to promote our profession.

The impact of generative AI on our work and our exams, in particular for exams offered online, often comes up as well. These conversations help us learn how other leaders deal with our profession's issues in their countries.

### Meeting potential new members

I attended the Actuarial Students' National Association ([ASNA](#)) Convention in Montréal with CAS staffers Mike Boa, Ken Williams and Margaret Gaddy, as well as several Canadian CAS member volunteers. The convention was for aspiring actuarial students from universities across all of Canada and was, amazingly, organized by a committee of students. This committee gathers sponsors, secures the hotel and venue, arranges for speakers and a case competition, handles meeting logistics including buses and transportation, and generally directs traffic for participants at the event. In total, over 700 students attended with [over 40 sponsors](#). It was a good opportunity for us to meet the next generation of actuaries and get their perspectives.

The first day of the event was brimming with energy and featured a career fair that was punctuated by a professional panel discussion and some networking activities. All students were required to go through the exhibit hall and were encouraged to apply for jobs during one of the career fair sessions. Luckily, the CAS had a booth near the entrance to capture some of this energy! Even though we weren't hiring, many students stopped by to chat and ask questions. We had great help from a few




CAS volunteers and staff talk with an ASNA attendee (foreground) at the CAS exhibit booth. From left to right are Simon Sidorenko, FCAS; CAS University Engagement Manager Margaret Gaddy; CAS Chief Communications Officer Mike Boa; Daniel Viau, FCAS; and Martin Menard, FCAS.

President's Message, page 8



# DON'T STAY UP LATE SETTING RESERVES.

## (UNLESS THAT'S YOUR THING.)

A man in a dark shirt and glasses is sitting at a desk in a dark office, working on a computer. The office has large glass windows and a green exit sign is visible in the background. The scene is dimly lit, with the primary light source being the computer screen and some ambient office lights.

**STILL STRESSING OVER DEADLINES? GET SOME PEACE OF MIND WITH ARIUS.** Our cloud-based and desktop P&C reserve analysis solutions automate, streamline, and add reliability to your entire reserving process. Find out why companies like yours rely on Arius every day for better, more efficient analysis.

[arius.milliman.com](http://arius.milliman.com)

Milliman **Arius**<sup>®</sup>

## President's Message

from page 6

Canadian CAS Fellows: Daniel Viau, Simon Sidorenko and Martin Menard. In between career fair sessions, David Mamane, FCAS, FCIA, represented the CAS in a professional panel that discussed the actuarial career and answered student questions. Our collective goal was to ensure that attendees were aware of the P&C education, training and community that the CAS provides.

On the second day, we had more opportunities to present to the students directly. In the morning, former CAS Board Member Erika Schurr, FCAS and Todd Orrett, FCAS, FCIA, gave a presentation about wildfires across Canada and the U.S. In the afternoon, CAS Staff Actuary Ken Williams covered marijuana legalization and auto risk. Both sessions addressed hot topics, and the presenters delivered interesting content — in one case, a run of puns elicited questions and laughter from the crowd. We were encouraged by the quality of the questions the students asked and their levels of engagement. We hope that the presentations showed just how interesting our field of work is. Between the sessions, I delivered a talk during lunch about redefining the actuary and how CAS members are being sought after as general risk problem solvers outside of traditional insurance.

We talked to attendees who ranged from near-graduates to first-year actuarial students. The following are a few insights from my conversations:

- The majority of attendees were actuarial science majors, but there were a few data science majors interested in actuarial science as a path to more technical roles in

insurance.

- Questions were on point. One person actually asked me a follow-up question on the spherical wheels I mentioned in my keynote! These students have bright careers ahead of them.
- The support for the students was amazing. Many of the volunteers from P&C employers were still taking exams yet took time to talk to and give free career advice to students — many students likely had internships lined up by the end of the convention. The CIA also arranged to have a professional photographer take headshots for about 250 people. (See my headshot for this column.)
- Perhaps not surprisingly, branded swag is really popular with students.

a sophomore. Despite drawing students from all over Canada and from different backgrounds, ASNA is a tight-knit community of young, aspiring people. It's no wonder that many Canadians at CAS meetings seem as though they've known each other for a long time — perhaps they have.

Just like ASNA, we at the CAS also have a strong and aspiring community. I've known many of you for a long time, too. Although our membership has grown immensely, we still have that desire for connection that has sustained our organization for nearly 110 years. I want to keep this sense of community and make it even stronger.

Thanks for reading and I hope to see you at the CAS Spring Meeting in Atlanta! ●

### A final take away

For the ASNA meeting, repeat attendees are the norm, and many students volunteer, sometimes early and often. For example, the ASNA president-elect is

**See real-time news on our social media channels. Follow us on Facebook, Instagram and LinkedIn.**

#### ACTUARIAL REVIEW LETTERS POLICY

*Letters shall not contain personal attacks or statements directly or implicitly denigrating the characters of individuals or particular groups; false or unsubstantiated claims; or political rhetoric. Letters should be no more than 250 words and must include the author's name and phone number or email address, so the editorial staff can confirm the author. Anonymous letters will not be published. There shall be no recurrence of topics; issues previously addressed will not be the subject of continued letters to the editor, unless new and pertinent information is provided. No more than one letter from an individual can appear in every other issue. Letters should address content covered in AR. Content regarding the CAS Board of Directors or individual departmental policies should be directed to the appropriate staff and volunteer groups (e.g., board, working groups, committees, task forces or councils) instead of AR. No letter that attempts to use AR as a platform for an ulterior purpose will be published. Letters are subject to space limitations and are not guaranteed to be published. The AR editorial volunteer and staff team reserves the right to edit any submitted letter so that it conforms to this policy. Decisions to publish letters and make changes to submissions shall be made at the discretion of the AR Working Group and CAS staff.*

For more information on AR editorial policies, visit [https://ar.casact.org/wp-content/uploads/2023/06/AR\\_Statement\\_of\\_Purpose.pdf](https://ar.casact.org/wp-content/uploads/2023/06/AR_Statement_of_Purpose.pdf)

## COMINGS AND GOINGS

**Peter Riihiluoma, FCAS**, has been appointed senior vice president, head of specialty reinsurance at Hamilton Re, the company's Bermuda-based insurance and reinsurance underwriting platform. Riihiluoma has held underwriting, pricing and portfolio management responsibilities across a diverse portfolio of specialty reinsurance lines since joining Hamilton in 2019 as vice president, specialty reinsurance. Prior to Hamilton, he was with Chubb for nine years, most recently as vice president, ceded reinsurance, in Minneapolis, Minnesota.

**Ralph Blanchard, FCAS**, has been appointed to the Federal Reserve Board's Insurance Policy Advisory Committee. Blanchard is a delegate for the CAS at the International Actuarial Association and CAS past president. Prior to his recent retirement, Blanchard served as assistant vice president at Aetna's property and casualty companies from 1978 to 1998. He also served as vice president and actuary, accounting policy at Travelers from 1998-2023.

**Michael Stephens, ACAS, FSA, MAAA**, has been appointed chief actuary at Trawick International. Stephens is a seasoned insurance leader with nearly 30 years of experience across diverse lines of international insurance business. Before joining Trawick International, Stephens served in a range of actuarial roles, most recently as chief actuary at Best Doctors Insurance, where he was responsible for all aspects of actuarial work for the company and managed the actuarial cost center. Additionally, and he held the role of chief actuary at BUPA, LATAM, and served in

various roles of escalating responsibility during his 13 years at Assurant.

**Ann Chai, FCAS**, has been appointed chief risk officer for Zurich North America. Chai will be responsible for leading all aspects of Zurich North America's risk function. In her most recent position with U.S. Middle Market, Chai was responsible for financial planning, metrics and reporting to ensure delivery of underwriting results and expense management. Prior to that, she was vice president and actuary for Zurich North America's finance and actuarial team. She joined Zurich in 2010 after working in several actuarial roles in both finance and data. Chai is a board member of Abacus Actuaries.

**Serhat Guven, FCAS**, has been appointed vice president, actuary of pricing and product analytics at USAA. Guven previously served as global proposition leader for Willis Towers Watson's P&C pricing, product, claims and underwriting propositions, where he had the opportunity to work with pricing experts in solving problems for the insurance industry.

**Roosevelt Mosley, FCAS**, has been promoted to managing principal at Pinnacle Actuarial Resources, Inc. Mosley has over 30 years of experience in the insurance industry and has worked for Pinnacle since 1999. He has been a principal at Pinnacle since 2006 and has led several of the firm's functions, including IT and strategic partnerships. Mosley's practice is focused on predictive analytics. He is currently the immediate past president of the CAS. He has also volunteered with many industry organizations

## CALENDAR OF EVENTS

**May 5–8, 2024**

CAS Spring Meeting  
Atlanta, Georgia

**June 2–4, 2024**

CAS Seminar on Reinsurance  
Boston, Massachusetts

**September 9–11, 2024**

Casualty Loss Reserve Seminar  
San Francisco, California

**November 3–6, 2024**

CAS Annual Meeting  
Phoenix, Arizona

Visit [casact.org](https://casact.org) for updates on meeting locations.

over the years, including the American Academy of Actuaries, the Actuarial Foundation and the International Association of Black Actuaries (IABA).

**Jake Akstins, ACAS**, has been appointed senior manager, inclusion and diversity analytics at Visa. Akstins will serve in a cross-functional, dynamic position in a consultancy model between the Inclusion and Diversity Center of Excellence and the firm's data and analytics team. He will also work across each discipline of the data and analytics team, acting as a thought partner to security role design, dashboard development, and planning process changes. ●

**EMAIL "COMINGS AND GOINGS" ITEMS TO [AR@CASACT.ORG](mailto:AR@CASACT.ORG).**

## MEET THE VEEP

## Anthony Bustillo, Vice President-Professional Education

By DR. SARAH SAPP, CAS EDITORIAL/PRODUCTION MANAGER

The professional education (PE) programs at the CAS lead the industry and help members and other insurance professionals stay current in a fast-changing field. PE volunteers and staff are responsible for developing the CAS Online Learning Center, where CAS members find resources for all their continuing education needs, and ensuring that content offered at the organization's big five events stay topical and of interest to the modern-day actuary. They are also behind the development of the [CAS Capability Model](#). At the volunteer helm of PE is Anthony Bustillo, VP-Professional Education.

"I oversee all things PE and work with the wonderful volunteers and CAS staff in doing our part for the Envisioned Future and the CAS Strategic Plan," Bustillo says. "My goals are to help the CAS move forward in building our skills in all areas of professional development, including a focus on providing quality offerings at our in-person meetings and virtual education in the best possible way."

Bustillo is most excited about implementing the CAS Capability Model. Now in its second phase, the CAS Capability Model is a visual framework guide that allows members to search for PE content based on the traits, skills and knowledge important for most property-casualty actuaries.

In addition to categorizing continu-

ing education content for the Capability Model, Bustillo and his team of volunteers are working on implementing ADA requirements for presenters across all offerings to make sessions more inclusive and accessible.

CAS Director of Professional Education Nora Potter says that the major goals for the PE Department are providing education in leadership, predictive analytics and business analytics at CAS major events and webinars. Under the direction of Bustillo, PE volunteers and staff are also building a new self-assessment tool so that actuaries can see how they rate themselves against the competencies in the Capability Model.

"Anthony brings extensive experience in the Professional Education world," says Potter. "He has practical insights, a down-to-earth attitude and a strong sense of collaboration."

Bustillo has a long history of volunteerism with the CAS. He started out helping write a paper and serving



Anthony Bustillo

those roles gave me the honor to serve as vice chair and chair for professional education working groups," says Bustillo. "I guess a few people thought I was doing a good job, so they asked me to be a VP."

Bustillo was interested in leading PE because he saw it as an area with the CAS that has a lot of touchpoints.

"You get the opportunity to drive the CAS on a path forward as to what

**I oversee all things PE and work with the wonderful volunteers and CAS staff in doing our part for the Envisioned Future and the CAS Strategic Plan.**

on a health care committee. That led to other opportunities such as being part of a meeting planning group and various task forces.

"All the positive experiences with

we want actuaries to know and learn," Bustillo says. "But it is not a one-way street. I love that we get a lot of feedback on what we do. Good and bad!"

Bustillo attended the University of Michigan where he studied math with a



concentration in actuarial science.

"I've made my way through numerous insurance companies and as a consultant. I've had the honor of helping colleagues write papers and present, and I love giving back that way to the profession."

For those looking to make their way up to volunteer leadership roles, Bustillo

has this advice:

"It's definitely a cliché, but network as much as you can. Some of us have lost or haven't honed the art of that since we only see some people virtually these days," Bustillo says. "In those instances, take the time to get to know the people you interact with through the CAS and other industry activities."

"Get out there and volunteer! Whatever your skill sets, there are CAS volunteer opportunities to showcase them. Also, continue to focus on developing professionally, as we're in a constantly evolving industry with many opportunities to exhibit your gifts and talents." ●

## IN REMEMBRANCE

*In Remembrance is an occasional column featuring short obituaries of CAS members who have recently passed away. These obituaries and sometimes longer versions are posted on the CAS website; search for "Obituaries."*

### **Lover of Travel and Spreadsheets**

#### **John Knapstein (ACAS 2007)**

**1969-2023**

John Knapstein, 54, of Mahtomedi, Minnesota, lived life to the fullest until his death in October 2023. Knapstein was a consulting actuary at Actuarial Advisors, Inc. where he provided property-casualty actuarial support in a wide variety of projects. Prior to that, he was a director at Travelers Insurance. He attended both the University of Illinois at Urbana-Champaign and the University of Minnesota. He was passionate about languages, travel, family, friends, nature, a well-constructed spreadsheet and a good taco truck. He is survived by his

wife, Libby; sons Eli (Naomi), Spencer and Camron; mother, Elizabeth; brother, Eric; sister, Susan (John); nephews Ethan and Jack; and his adoring dog, Chester, as well as an abundance of friends and family.

### **The Tennis Enthusiast**

#### **Gregory Andrew Finestine (FCAS**

**2011)**

**1979-2022**

Greg Finestine, 42, of Jersey City, New Jersey, passed away suddenly in February 2022. He was born in Princeton, New Jersey, and grew up in Flemington, New Jersey. Greg earned a B.A. degree with high honors in mathematics from

Rutgers University in 2002. He was an actuary at Zurich North America in New York. In addition to his FCAS designation, he was a Member of the American Academy of Actuaries. He served the CAS in various volunteer capacities, including the Examination Working Group and the Syllabus and Examination Committee. Finestine was not only a dedicated professional in his field but also a true tennis enthusiast, finding joy in both playing and watching the sport. He is survived by his mother, Wendy; father, Norman; sister, Jennifer; brother-in-law, Garrett; and niece, Samantha. ●



## CAS STAFF SPOTLIGHT

## Meet Annmarie Geddes Baribeau, Research Manager

**W**elcome to the CAS Staff Spotlight, a column featuring members of the CAS staff. For this spotlight, we are proud to introduce you to Annmarie Geddes Baribeau.

- **What do you do at the CAS?**

As the organization's research manager, I partner with dedicated volunteers who contribute to nearly every stage of the research process.

- **How does your role support the strategic plan/envisioned future?**

Part of my job is to promote CAS research to elevate the CAS brand. The CAS supports awesome research, and it is an honor to help spread the word.

- **Describe your educational and professional background.**

I attended Cuyahoga Community College while in high school before high schools and community colleges developed formal programs. I graduated with honors with a BS degree from the E.W. Scripps School of Journalism at Ohio University in Athens (not to be confused with the Buckeyes in Columbus!).

My career started at the Ohio Bureau of Workers' Compensation (BWC), a self-contained single-line insurance system, where I learned about actuarial topics like ratemaking and self-insurance for employers and groups. I have worked with actuaries ever since.

After leaving the Ohio BWC, I worked for two separate publishing companies and then, to achieve a work/life balance, I started my own company that I ran for more than 20 years.

- **What do you bring to the organization?**

More than 30 years of communications experience ranging from investigative journalism to marketing. My clients ranged from publishing companies to insurers, actuarial firms, insurance organizations and a lobbying association. I have written at least 75 feature stories combined for *Actuarial Review* and the American Academy of Actuaries' *Contingencies* magazine.

- **What inspires you in your job?**

**What do you most love about your job?**

Working with actuaries. They inspire me for many reasons. I like to work with actuaries because they prefer to work with objective facts, as I do given my journalism background. Actuaries also hold each other accountable with stated professional standards, which relates to their strong work ethic and high ethical standards. They also possess the perseverance necessary to get through famously difficult actuarial exams.

Actuaries are thought leaders who deserve greater attention from the insurance industry. Being the re-



Annmarie Geddes Baribeau

search manager for the CAS affords me more opportunities to promote critical actuarial insight to a variety of audiences, including consumers. On a personal note, several actuaries have supported me professionally, and a few have personally as well. I've tried to pay it forward by volunteering at different actuarial groups as a speaker upon request.

- **What is your favorite hobby outside of work?**

Genealogical research has led to a book I am writing about the Civil War in Virginia. I also enjoy gardening, cooking and sewing.

- **What would your colleagues find surprising about you?**

I had a live, call-in radio show in Cleveland, Ohio, before moving to the Washington, D.C. area.

- **How would your friends and family describe you?**

Genuine. ●



# Thanks to Our Property and Casualty Predictive Analytics Volunteers!

In November 2023, the CAS launched the first offering of the new Property and Casualty Predictive Analytics (PCPA) project and examination. Forty-two volunteers engaged with the new exam and project to help make the future and final product as successful as possible for its official launch in May 2024.

As the CAS analyzes the feedback we received during the beta phase, the volunteers' input will help directly shape the final product that is delivered.

Ruffin Adja	Yifan Jin	Nur Atikah Mohamed Rozali
Janghyuk An	Adam Karnik	Sajini Samuel
Lance Anderson	Issa Kiendrebeogo	Wenming Shi
Zachary Boaz	Do young Kim	Masato Shimizu
Qinwei Cai	Liz Li	Ming Ping Tan
Yiwen Chen	Mitchell Lipka	Jim Tao
Aleksandr Chertok	Fangquan Liu	Ming Feng Teow
Chia-Hao Chuang	Lingsheng Liu	Jing Ya Wang
Dana Coons	Sarah Luevano-Woods	Kan Wang
Marco De Virgilis	Amanda McCormick-Cathey	Thanaphol
Katherine Ferri	Ivan Minokhin	Watthanachoktaweek
Fangyi Fu	Nicholas Misawo	Emmanuel Yeboah
Grace Garay	Youngok Park	Zhibin Yu
Jason Hartman	Di Peng	Xiaolu Zhang
		Yingqi Zhang

**We thank these volunteers for their contributions to the final PCPA product and for their willingness, dedication and passion.**

## DOWNTIME

## When Mathematicians Marathon

When Bob Conger, FCAS, MAAA, HonFIA, celebrated his 70th birthday earlier this year, he set a goal of running his first marathon before the end of 2023. Not only did he accomplish his goal, Conger used his platform to raise more than \$8,000 for The Actuarial Foundation.

"I prepared to run the marathon, putting in 534 miles of training June through October," Conger said. "My goal was 500 miles of training. I finished the Marine Corps Marathon on October 29, my first-ever marathon, without injury."

His finish time was 3:53, an average pace of 8:54 minutes per mile. He crushed his goal of finishing in 4:20, which would have been a 9:55 minute pace.

"I'm extremely happy with that result, and I was thrilled to learn that I was

"Thanks to my training, the first 22 miles were pretty smooth and comfortable," Conger said. "However, the last four miles were a struggle. All my supporters' encouraging notes became a wonderful collective voice in my head that kept me putting one foot ahead of the other. I really appreciate their words of support."

Joining his supporters' voices was that of a young man named James, one of the Washington D.C. high school students Conger tutored in The Actuarial Foundation's Math Motivators program.

"I remember the rainy Tuesday afternoon when he tackled an algebra concept that previously had eluded his grasp," Conger said. "We started with an easy problem, and it clicked. Eagerly, and with growing confidence, he nailed several more problems of increasing difficulty. He turned to me with delight

with each word. With everyone's support, Math Motivators can take the next step in helping students like James gain the math skills and confidence that they need to succeed in school and in life."

Conger spent most of his career as a consultant with Willis Towers Watson and its predecessor organizations. His consulting practice covered a wide range of business issues facing property and casualty insurers, with a particular focus on workers' compensation. Conger's first actuarial position was with American Mutual Liability Insurance Group, with responsibilities focused on pricing and loss reserving all P&C lines. Subsequently, at the Massachusetts rating bureaus, he was responsible for all workers' compensation and auto insurance ratemaking, research and statistical functions of the organization. Conger graduated from Amherst College in 1975, with majors in economics and mathematics.

Conger is also a member of the American Academy of Actuaries. Since attaining his credentials, he has been a very active volunteer in the actuarial profession — including numerous committee, leadership and Board roles for the CAS, the American Academy of Actuaries, The Actuarial Foundation, the International Actuarial Association, ASTIN and two Regional Affiliates.

He served in leadership roles with the CAS from the mid-1980s until 2001 — one-third of the organization's history. In 1991, during his tenure as VP-Administration, the first-ever CAS office was established.

"In authorizing this significant strategic shift and major investment, the Board recognized that numerous important CAS functions and roles would be best served by full-time staff members

the top finisher in the age 70-74 group out of 58 male finishers and 15 female finishers," Conger said.

Out of the overall field of more than 30,000 runners, he finished 1,761. His time qualifies him for the 2025 Boston Marathon.

written all over his face, exclaiming 'I can do this!' and proceeded to plow his way through ever-more-difficult problems."

"As I ground through miles 25 and 26 of the marathon, I repeated his mantra, 'I can do this,' taking another step





with professional expertise in essential areas of CAS activity,” Conger said. “As a direct result of this change — and our ability to hire a great team of talented and dedicated people — the scope, size and speed of ambitious CAS initiatives really accelerated.”

Conger is proud of the strides the organization has made in terms of improving diversity since he became an FCAS in 1979.

“It has been great to see diversity expanding along numerous dimensions over the years among CAS candidates, members and leaders,” Conger said. “I am proud of what the CAS has enabled and accomplished in this arena, but I also believe that the CAS journey must do more — both within our own ranks, as well as embracing initiatives that reach down into middle schools, high schools and colleges to strengthen math literacy among future actuaries and future non-actuaries.”

Conger is also pleased with the expansion the organization has undergone internationally since he became a member.

“Over the past two decades, most of my CAS volunteer work has been focused on supporting the development of the CAS and the actuarial profession more broadly in geographies where it is not well-established,” Conger said.

In his personal life, Conger and his wife Maggie have been married for 48 years. They live in Washington D.C. and on the coast of Maine. They share an interest in travel and food, and especially enjoy time with their two daughters, two sons-in-law and two grandchildren. Conger’s other interests include solving logic and math puzzles, reading and volunteering in the community. And running. ●



*Conger pauses at mile 14 to greet two of his cheerleaders, granddaughters Genevieve (left) and Adelaide.*

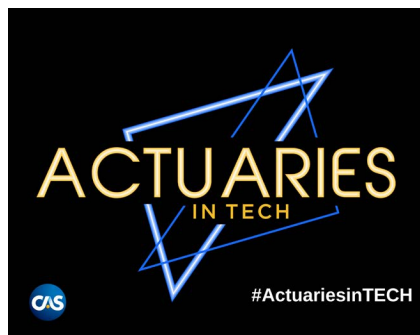
## CAS Research, Marketing and Communication Efforts Are Recognized with Five Industry Awards

In 2023 the CAS received five awards from four association award programs for exemplary work completed in 2022. The programs are [EXCEL](#), [TRENDY](#), [ASAE Power of Associations](#) and [Communicator](#).

"The CAS is exceptionally proud to be recognized for our dedication, creativity and innovation by receiving these five industry awards," said CAS Chief Executive Officer Victor Carter-Bey.

The complete listing of honored projects includes:

### [Actuaries in Tech Social Media Campaign](#)



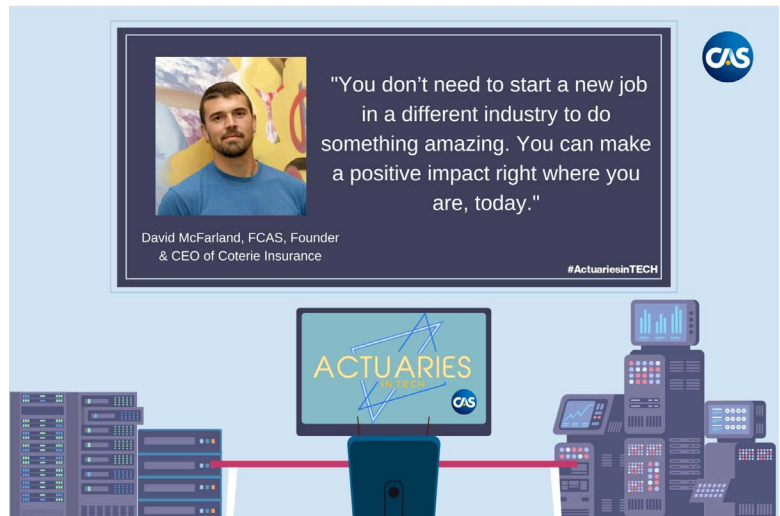
ASSOCIATION TRENDS TRENDY AWARD,  
BRONZE COMMUNICATOR

COMMUNICATOR AWARDS, AWARD OF  
DISTINCTION

In order to showcase how CAS members are helping to innovate and disrupt the technology industry, the CAS launched Actuaries in Tech Month.

Throughout the month of July 2022, the organization shared highlights of CAS members on LinkedIn, Instagram, Facebook and Twitter platforms using the hashtag #ActuariesinTECH.

The campaign highlighted how our



*Social media post by David McFarland, FCAS, for the #ActuariesinTECH campaign.*

members interact with the technology sphere, focusing on personal profiles of members who work at companies ranging from small tech startups to large, established technology companies. The featured interviews with CAS members working in tech on the CAS Roundtable Blog provide additional insight into how members are translating their actuarial skills to the tech world.

### [CAS Research Paper Series on Race and Insurance Pricing](#)

COMMUNICATOR AWARDS, AWARD OF  
EXCELLENCE

EXCEL AWARDS, SILVER

ASAE POWER OF ASSOCIATIONS  
AWARDS, GOLD AWARD

In 2020 the CAS recognized a pressing need to use members' specialized expertise to serve as a leader on the larger issue of potential bias in insurance pricing. To that end, the organization developed a CAS Approach to Race and Insurance Pricing, with activities con-

centrated in four key areas of education, research, leadership and collaboration.

The goal was to enable the community of subject matter experts to take the lead in engaging with the insurance industry as it addresses issues of potential racial bias over the coming years. As part of this approach, the CAS created a new special Research Paper series to help educate the insurance industry toward quantitative solutions addressing the



topic. Each paper in the CAS Research Paper Series on Race and Insurance Pricing deals with a different aspect of the topic from a property and casualty insurance perspective. ●



# Bordeleau-Tassile Wins the CAS 2023 Hacktuary Challenge

By ANNMARIE GEDDES BARIBEAU, CAS RESEARCH MANAGER

Michaël Bordeleau-Tassile, FCAS, has created the winning app for the 2023 Hacktuary Challenge, which is beneficial to consumers and insurers. It's the second win for Bordeleau-Tassile, who was named the co-winner of the first Hacktuary contest in 2022 along with Caesar Balona. (See AR Web Exclusives for the story and videos about last year's winners <https://ar.casact.org/hacktuary-winners-build-novel-apps-with-actuarial-know-how/>.)

His app, PropertInsight (<https://propertinsight.shinyapps.io/launch/>), gives at-a-glance overviews of property characteristics and hazards and helpful insights for consumers.

Insurers can also benefit from the catalog of insurance-related open data sets that can be used to improve risk assessments, identify new opportunities and deploy advanced analytics.

Showcasing Montréal, Canada, as its use location, the app displays property risk factors ranging from

environmental and climate characteristics to proximity to fire stations. Factors of special interest to actuaries cover a property's age and value along with nearby road conditions and closeness to businesses including drinking establishments.

"The entry is a standout illustration of how actuaries can apply technology to demonstrate risk potential to better inform consumers," said Morgan Bugbee, vice president of research for the CAS. The CAS awarded Bordeleau-Tassile \$15,000 for his winning submission.

The CAS began its Hacktuary Contest in 2022 to showcase the actuarial and technical skills necessary for developing novel risk engineering solutions. Entrants are challenged to create actuarially grounded end-user applications that offer consumer-relevant risk management solutions.

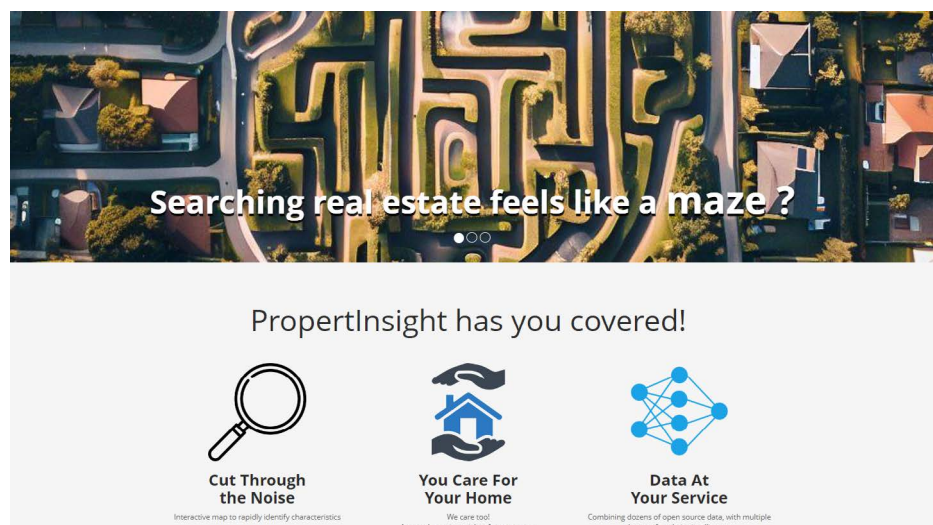
Winners are also required to post the app's code on the publicly available CAS GitHub site, a cloud-based, public platform for collaborative code



Michaël Bordeleau-Tassile, FCAS, winner of the CAS Hacktuary Challenge.

development. The code for PropertInsight is located at <https://github.com/ResearchActuary/PropertInsight>. (GitHub code encompasses more than just software. By writing in a format like [RMarkdown](#), users can also share research papers, and other human-readable items.)

Plans for the 2024 Hacktuary Contest are coming soon. For questions regarding the Hacktuary Challenge or GitHub at the CAS, please write Research Manager Annmarie Baribeau at [abaribeau@casact.org](mailto:abaribeau@casact.org). ●



Searching real estate feels like a maze?

PropertInsight has you covered!

**Cut Through the Noise**  
Interactive map to rapidly identify characteristics

**You Care For Your Home**  
We care tool!  
Assess the various risks of any property

**Data At Your Service**  
Combining dozens of open source data, with multiple layers of analytics intelligence

# The 2023 CAS Volunteer Awardees: In Their Own Words

About one-third of the CAS membership volunteers every year. Of that group, the CAS honored 10 exceptional volunteers during last year's Annual Meeting. What makes these awardees even more special is that they were nominated by their peers. Some go above and beyond for a focused and finite project over the course of a year. Some are new to volunteering and to the CAS but have shown themselves as outstanding leaders. Others are long-time volunteers who have devoted themselves throughout their careers to elevating and advancing the actuarial profession. With National Volunteer Week beginning April 21 of this year, we thought it was the perfect time to honor these volunteers by giving them an opportunity to speak of their experiences volunteering with the CAS — why they do it, what they enjoy most about it, and what aspect stands out.

## The New Members Award

*Recognizes volunteer contributions during an individual's first five years from their most recent credential.*

### Ildiko Ban, FCAS

*Recognized for work on the Candidate Advocate Working Group*

I started volunteering after being inspired to do so by my prior colleagues who have been very active with the CAS. From there, there was no turning back. I find it rewarding giving back to the actuarial community, but to be honest, I like it just as much that volunteering gives me the ability to have a say in matters impacting candidates and members, and this way, influence the organization's direction.

Volunteering gave me the opportunity to glance behind the scenes and see all the hard work done by volunteers and CAS staff to run an organization of this size smoothly. I had a direct view to see how much attention is given to feedback



Ban

received from candidates and members via different channels. I could also see how much work is put into coming up with solutions for concerns raised. Some of these can't be solved easily or quickly, but now I know that staff and volunteers will work tirelessly to find the needed solutions.

### Rafael Costa, FCAS

*Recognized for work on Brazil Outreach and the Data Insurance Series Courses (DISC) Task Force*

It starts with giving back to the profession that has created so many opportunities for me, both on the personal side and in terms of career growth. As volunteers, we get to shape the CAS with input on its strategy and also bring it to life. For example, the work that I get to do on the Latin America Regional Working Group supports our ambition to expand globally, which is an important strategic initiative that will benefit all of us as CAS members.

I value the fact that the CAS structures volunteering opportunities in a way that enables and empowers most of our members to be able to help. For example, when I worked on developing the CAS DISC online course "Introduction to Data Analytics," our team had a mix of people who had only a few hours available to help and others who were able to dedicate time to various stages of the project. Also, volunteers can find opportunities that best align with skills they wish to develop, ranging from soft skills to research on cutting-edge topics. That flexibility has helped me adjust the amount and type of volunteering that I have done over the years.



Costa

### Michael Mancuso, FCAS

*Recognized for University Liaisons, the CAS Student Central Summer Program, the Syllabus and Examination Working Group, and the Annual and Spring Meeting Planning Working Groups*

I am very proud of being an actuary, and I am very proud of the CAS. Helping spread awareness around the actuarial profession and any contributions that I can make to the CAS,

both big and small, helps to raise the profession up for everyone.

I love hearing updates from mentees as they progress through their exams, careers and life. I hope my excitement lives on in them as they get their credentials and inspires them to continue the cycle of volunteerism!

#### **Jason Nikowitz, FCAS**

*Recognized for the Student Programs Task Force and Property Casualty Predictive Analytics Task Force*

I enjoy how much I've continued to learn about the profession from the people I volunteer with. It seems like every volunteer call I pick up has information I wasn't aware of previously. Sometimes it's small "fun facts," but other times it can be pretty interesting and complex. Occasionally, there's even a follow-up e-mail where someone shares a white paper or article for further learning.

Volunteering has a lot to offer, and every experience is a little different. At the end of the day, it's an opportunity to engage with others in the same profession while helping build or maintain one of the organizations that defines that profession.

#### **Above and Beyond Achievement Award**

*Recognizes outstanding volunteer contributions during the previous year.*

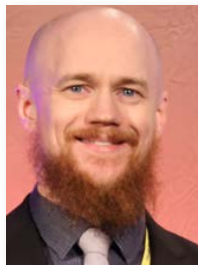
#### **Bob Downer, FCAS**

*Recognized for the Investment Council and tenure as Assistant Treasurer*

I love the CAS and want to give back for many reasons. First, the CAS helped to open the door to my career as an actuary — a career full of challenge and meaningful rewards. Second, the roles played by actuaries remain of great value to the economy. Third, the CAS continues to grow and seek greater value for the profession. Finally, the CAS uses a business model where volunteers are the core of strategic and tactical management.



*Mancuso*



*Nikowitz*



*Downer*

It is good that the volunteer-centric business model for the CAS remains in place. It is also good that the CAS remains on its own as *the* professional association representing P&C actuaries.

#### **Laura Hemmer, FCAS**

*Recognized for the Candidate Advocate Working Group*

I really like being able to connect with CAS members from across the U.S. and the world. I work for a small insurance company, and volunteering gives me the opportunity to grow my actuarial circle. It's always fun to see people at CAS meetings and to reconnect.

There are so many more opportunities to volunteer with the CAS than you're probably aware of. Everyone is familiar with the Exam Committees and grading positions (and those are great opportunities to volunteer), but there is a whole host of other working groups! The CAS has done a great job recently with doing bios of each group. So, read through them and find one that interests you. Don't feel like you can't contribute until you've been a member for a while — hearing new voices is very important to the Society.

#### **Regina Kintana, ACAS**

*Recognized for the Organization of Latino Actuaries (OLA)*

Years before OLA existed, I had a vision. I wanted to introduce the Association of Latino Professionals for America (ALPFA) to the actuarial profession. ALPFA has an annual convention, and I've always wanted to have actuarial representation there. In 2018 my dream was realized! OLA sponsored students to attend the convention.

Most of my volunteer work has been with OLA. I have loved the relationships I've built and seeing the success of my students. I love seeing them with letters after their names! But I absolutely love getting those "I-got-an-offer" text messages. I know that for them the journey is entering a new chapter, but getting to that part is huge. I've also had students tell me that their starting salaries are more than what their parents make. Talk about improving the wealth gap!



*Hemmer*



*Kintana*



### **Jeremy Lian, FCAS**

*Recognized for the Asia Region Casualty Actuaries (ARECA)*

I am honored to have been given the opportunity to serve as the CAS's Asia Regional Casualty Actuaries president. I have tried my best to organize as many events as possible and activities for CAS members in Asia to earn CPD credits and to get to know one another.

We had a mixture of virtual meetings and on-site seminars, and the latter were quite well attended as most countries in the region were getting out of COVID and restrictions. I could not have done this without my great team of volunteers, CAS staff members and the CAS Asia Ambassador, who managed to bring the CAS community in Asia closer, especially the new members who may have felt "lost" after completing the CAS exams. I had the opportunity to engage with local regulators, universities and employers in my capacity as a CAS leader, which I would not have been able to do on my own. I even had dinner with the CAS president and the CAS Asia ambassador at a local eatery in Singapore.

There are many people who would like to volunteer but do not know where to start or how much time and effort is required. Whenever you are ready to volunteer for the CAS, you can contact a CAS staff member or any of our ARECA members. There are various volunteering opportunities, ranging from ad hoc speaker engagements, professionalism programs and special interest task forces and working groups. I am certain there is some work that will interest you. For ARECA, we welcome volunteers from Hong Kong, Singapore, Malaysia, Thailand, India, the Philippines, and any other territory in Asia.

### **The Matthew Rodermund Memorial Service Award**

*Acknowledges CAS members who have made considerable volunteer contributions to the actuarial profession over the course of their careers.*

### **Mary Hosford, FCAS**

[Volunteering for the CAS is] fun, interesting, and educational! I am always impressed at the viewpoints and smarts



*Lian*

that other CAS members contribute to resolve issues. Through volunteering I have learned a lot about how to work together to get things done.

[My favorite memory is] chairing committees or taking on other leadership positions, which isn't — or wasn't, anyway — really like me. I was pretty much badgered into taking on my first volunteer role as a member of the [then-called] Ratemaking Seminar Committee. I never dreamed at the time that I would one day serve on the CAS Board or as a VP.

After all these years, I love that I can walk into a CAS reception or other event and usually run into a number of people that I know (and like)! It's a great way to make connections. It's great that as a volunteer you get a glimpse of how certain aspects of the CAS (or, depending on the role, all of them) are carried out. It is a smart organization, and getting the inside scoop makes me proud to be a member of it.

### **Kenneth Quintilian, FCAS**

I am very proud to have been nominated by the CAS and elected by the membership to the CAS Board of Directors (some years ago now). In total I spent nine years attending CAS Board meetings in various capacities (secretary, VP and board member), and all of my fondest memories of volunteering arise from those years.

You get out of it what you put into it. My favorite experience and my best memories were of my years in CAS executive leadership. However, those were also the most demanding of me in terms of time as well as travel. The hardest jobs are the ones that bring you the greatest rewards long-term, and that applies to volunteer jobs as well.

I did not volunteer as an ACAS because I thought it more appropriate to focus my efforts on finishing my exams. But for a new FCAS, I suggest you start with something doable (don't overcommit), and in an area in which you are interested. They told me all new Fellows work in Admissions. But I was never interested in writing questions or grading exams when I was a new FCAS, so I looked around for something more appealing to me. I struck on the board of the CAS Regional Affiliate CAGNY. This turned out to be a great way for a new Fellow to get exposure locally, meet other actuaries both on the CAGNY Board and at CAGNY meetings, and to get the word "president" (of CAGNY) into my CV only a few years after my



*Quintilian*



*Hosford*

Fellowship! As a junior consulting actuary, I was also glad that it was not terribly time-consuming. I was always glad I chose that as my first foray into volunteering.

#### Julia Stenberg, FCAS

There are so many reasons I volunteer. First, it's fun! I've enjoyed meeting so many people through my CAS work, and it's not superficial — I've gotten to know a lot of folks pretty well over the years, and I always enjoy meeting and working with new members.

Another reason I volunteer is that I've learned and had the opportunity to practice a lot of skills that have helped me in my real job. I can effectively run a lot of different types of meetings. Having a performance conversation with a volunteer — holding them accountable for what they promised to do — is not that much different from having a performance conversation with an employee. I've been able to practice my communication skills —



Stenberg

especially my listening skills, which always need work — while serving on various committees where not everyone agrees on a course of action. I've led complex projects. When I was on the CAS Board of Directors, I had the opportunity to serve on the board committee that did a CEO search. Going through the exercise of talking about our organization, agreeing on key skills for the new CEO, interviewing candidates and evaluating them as part of a committee was a real growth experience for me. In more recent years, I have noticed that I'm more attracted to roles that are more strategic than execution-oriented. In my early years of volunteering, I worked on committees and working groups with specific deliverables — an exam or a meeting. Now I'm more interested in working on bigger issues, such as what are the skills that actuaries will need five to 10 years from now? What sets us apart from data scientists and other quantitative professions? How do young actuaries develop influencing skills and leadership skills, for the good of the profession? There are lots of big, meaty questions out there to make progress on. ●

**FREE**  
REGISTRATION  
[GALA.ACTUARIAL  
FOUNDATION.ORG](https://GALA.ACTUARIALFOUNDATION.ORG)

The ACTUARIAL FOUNDATION Celebrates  
**formula** 2024  
Empowering Students Through Math Education  
*Virtual Gala*

**MAY 9, 2024 | 5 - 6PM, CT**  
**FORMULA 2024 VIRTUAL GALA**

**HELP US CELEBRATE 30 YEARS!**

**FEATURING**



*Ellen Ochoa*

**American Engineer & Former Astronaut**

**KEYNOTE SPEAKER**







# TELL A STORY

*Get Results*

By LAURIE MCCLELLAN

## Storytelling can be an actuary's secret weapon.

It was a freezing winter night, and Tim was stranded in the middle of nowhere. He'd been traveling around England, making a documentary. He'd missed the last bus to the village where he was staying, and there were no taxis. But after a minute's thought, Tim ordered a pizza.

Curious about what happened next? That may be the power of storytelling at work.

Tim asked for the pizza to be delivered to his hotel in the next town, then asked if he could ride along. The pizza — and Tim — arrived safely. In *How to Tell a Story*, co-author Catherine Burns describes her friend Tim's anecdote as perfect for a job interview. "The story demonstrates that Tim is a creative problem solver, with an adventurous spirit and a great sense of humor," she writes. "Think through the stories in your arsenal before the interview and have one or two prepped."

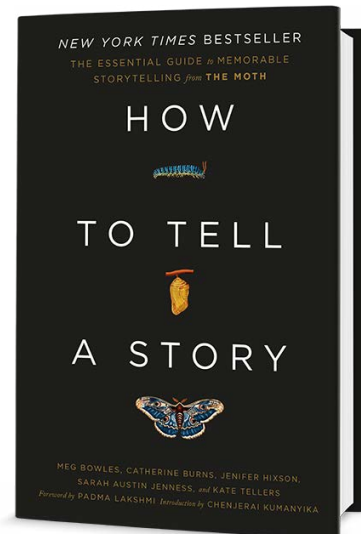
A friendly guide to developing your own storytelling skills, *How to Tell a Story* may be one of the most unusual books to find an audience in the business world in recent years. Yet it's been

longlisted for both the Porchlight Business Book Award and Inc.'s Non-Obvious Book Award. The book's five co-authors are all hosts and producers with The Moth, a nonprofit founded in 1997 that focuses on a simple act: people telling short, true stories about their lives, in front of an audience. Some of those live stories are later featured on *The Moth Podcast*, which receives 100 million annual downloads, or *The Moth Radio Hour*, which airs nationally.

Co-author Sarah Austin Jenness, who oversees *The Moth Podcast*, agrees that job interviews are a setting where storytelling can shine. "Having a few anecdotes and scenes can help you stand out from the rest," she says. "Most people just answer questions with facts and declarative sentences, which aren't quite as memorable."

On the surface, the ability to tell a story might not seem like a skill that actuaries need. But being able to craft a narrative is increasingly seen as an important tool. Similar to the tools outlined in the recent CAS webinar, "Communication Skills for Actuaries," storytelling can help actuaries succeed when meeting with clients or the C-suite.

Job interviews are just one setting



## Listen to some work stories

A college student answers the phone at her hometown newspaper during the Watergate hearings.

A doctor declares her first death in the hospital.

A writer becomes a New York City sanitation worker and learns why the work matters.

To hear these and other Moth stories that take place on the job, visit <https://themoth.org/tags/jobs-employment>.

where creating a narrative can make a difference. The book guides readers to use storytelling to write grant proposals, give presentations, build teams or just deliver a toast at a retirement party.

In any of those situations, making information memorable can be the key to success. The authors credit cognitive psychologist Jerome Bruner with the statement, “We are twenty-two times more likely to remember a fact when it has been wrapped in a story.”

Jenness is also part of The Moth Works Department, which has brought storytelling workshops to businesses including Google, American Express and MetLife. At one tech company, scientists were trying to show just how sensitive, and therefore cutting-edge, their experiments were. They tried to explain it with data — lots and lots of data.

But over lunch, one scientist told a little anecdote. He explained that the team had to schedule their work around a train station more than two miles away because the movement of the trains disrupted the experiments. “Years later,” states the book, “we still remember that story; the data was supplemental.” In a scenario that may seem familiar to actuaries, the stakeholders whom the scientists needed to convince didn’t respond well to data. It turned out that a story brought them the buy-in they needed.

As an organization, The Moth practices what it preaches. According to Jenness, the nonprofit has begun holding quarterly storytelling workshops for staffs. “Even in our own Moth work environment,” Jenness says, “you feel like sometimes you don’t know your coworkers very well. Now in this day and age of hybrid workplaces, you have fewer of the water cooler moments. People are very

busy, with an incredible pile of work on their desks. And so personal stories can be very short, but they can really help to break down barriers and connect people.” After a three-hour storytelling workshop, Jenness says, “Some of the scenes that folks are sharing, they’re rough stories, but they’re gorgeous. And I’ve seen my co-workers in a totally different light.”

The feeling of connection that storytelling inspires has recently been backed up by science. The book cites a study led by neuroscientist Uri Hasson, which found that “when a person is listening and comprehending a story, their brain activity begins to couple, or align, with the brain of the teller ... MRI scans of two brains, one talking, one listening, showed that the brains began to sync.”

Once people feel connected, changing minds can be an easier task. “I’ve worked a lot with people who are advocates and activists, and some of them are scientists, doctors and lawyers, and people who are trying to make a difference in the world,” says Jenness. “It’s an incredibly different experience if you roll into the room with statistics about an issue ... compared to when you say, ‘When I was 24, I was fired for being a woman.’ I think hearing from someone who has lived it is quite different from hearing about it.”

A narrative can also provide a roadmap for a co-worker facing a problem. Sometimes sharing a story from your own life can help a team member handle the same situation. For example, most people have had to face a fear at work, whether it’s nerves over chairing a meeting or dealing with a VIP. And what if that VIP was one of the world’s spiritual leaders? Jenness has a story about that.

“One day, the United States Insti-

tute of Peace asked me to help young peacebuilders tell stories for the Dalai Lama,” said Jenness. “Of course, I said yes, but then I was terrified! I shut Zoom off, and I felt like I was levitating. But then the ticket came, I packed my bag, and I went — terrified the whole time, and acting like I really had it down.”

“There were three days of convening, and on the very first day, I was in a very short and small meeting with the Dalai Lama. So, the meeting was very, very serious, of course. There were only six of us in the room with him, and we were talking about how the convening would go with all the 50 peacebuilders the next day. And I was very quiet.”

“At the very end, I remembered I had brought him gifts because I had been told that he likes gifts. Everyone was filing out, and I felt my body just say something. It’s like body versus mind. ‘Oh, your Holiness,’ I said. My mind was hearing this like I was astral projecting. And he said, ‘Yes?’ And I said, ‘I brought you gifts.’ And he said, ‘Gifts?’”

Then a photographer entered the room, and Jenness handed the Dalai Lama the book *How to Tell a Story* and said, “I also help people tell stories for peace and better understanding,” to which he nodded. “But then I gave him a Yankees cap. And he was really excited about the Yankees cap,” she continued. “So, he put the Yankees hat on, and now I have all these strange photographs of me standing next to the Dalai Lama, and he’s wearing a Yankees hat and holding *The Moth* book.”

What did Jenness take away from the experience? “I

think that even people who have skills and are supposed to be masters in their fields, just get really scared, and work through it. It’s a battle sometimes, mind over matter. I thought that trip was truly memorable, but it included a lot of moments where I was just terrified ... I think that’s what is so beautiful about stories. We can share the stories and then learn from each other and feel closer.”

### Getting Started

Everyone has a story, but how do you find yours? *How to Tell a Story* breaks down the process into a series of logical steps. One way of beginning is to mine your memories. Think of a place, an object, or a relationship that was important to you. Big changes can also kick off a story. Sometimes it’s a decision that marks

**“You are driving this tour bus through your story, and you choose which scenes your passengers see — what we cruise past or where we pull over for a closer look.”**

**— *How to Tell a Story***



## Kick off a meeting with a story

The Moth team has some ideas to get people talking. Following are a few prompts they suggest from *How to Tell a Story*:

- About the work: Tell us about a time you realized this work was important to you.
- About the theme of the meeting (for example, expanding into new markets): Tell us about a time you knew you had to leave home.
- About company values (for example, working with integrity): Tell us about a time you had to stand up for what's right.

a turning point, such as deciding to switch career paths, leave a job, go back to school or speak up. Jenness says that many stories are based on the first time, the last time, the best time or the worst time.

As you pick a topic, remember that vulnerability can be the key to making a story work. "It's okay to celebrate success," the book states, "but that success will be more interesting if you tell us about your stumbles along the way."

For example, The Moth worked with astronaut Michael Massimino as he developed his story, "A View of the Earth." Massimino pitched the idea by saying, "I could tell you about the time I broke the Hubble Telescope." While Massimino eventually found a way to solve the problem, the writers point out that "most of us will never be sent into outer space by NASA. But who can't relate to spending many hours of your life preparing for something important, only to be undermined by something as tiny and common as a stripped screw?"

Once you've picked a story, the next step is to develop it more fully by creating scenes. According to the writers, "You are driving this tour bus through your story, and you choose which scenes your passengers see — what we cruise past or where we pull over for a closer look." Describe those scenes using details to make the story seem vivid and real. Some of those details can come from your senses, like the smell of cookies baking or the sound of rain on a roof. A detail can also be what you were thinking at the time.

When it's time to tell your story, the Moth team says it's better not to

memorize it or write it down. Instead, they suggest just familiarizing yourself with your story, by practicing telling it out loud. According to the authors, if you read the story, "You're less present in the room. You risk losing connection with the listener." Instead, use the Moth method: Memorize only the first and last lines of your story.

It's normal to feel nervous when telling a story for the first time. "If you feel your voice trembling," the writers advise, "pause and take a deep breath before you speak again. You may not be able to outwardly acknowledge your nerves, but a moment of silence can steady you."

While the stories told on Moth stages are usually five minutes or longer, Jenness says the book can also be used to craft the much shorter narratives that can be useful at work. "I've seen people use very short stories to open up keynotes, team meetings and board meetings," says Jenness. "Any time you can add a little bit of your own humanity and how you see the world, I think that you build rapport immediately."

If you're ready to bring storytelling to work, the most important thing, according to Jenness, is to simply get started. "I would challenge people to just try it," she says. "Try telling a story, even if it's just one minute long. And just see what the response is, and see how it makes you feel, and see how others light up. Because it really can be life-changing." ●

---

*Laurie McClellan is a freelance writer and photographer living in Arlington, Virginia.*





# Access More Qualified Applicants. Period.



**Expertise. Insight.  
Solutions.®**

The CAS Career Center allows employers and recruiting firms to post open positions to a focused audience of credentialed P&C actuaries, actuarial candidates, and interns.

Posted positions average nearly 1,000 hits each.

**Learn more at**  
**<https://careers.casact.org/employers/>**

CAS Society Partners receive a discount on all Career Center advertising. **Learn more at**  
**<https://www.casact.org/advertising>**

## State of the California Property Market By DALE PORFILIO

**B**ecause it was held in Los Angeles, the CAS 2023 Annual Meeting featured two general sessions on the unique risks and insurance market dynamics of California.

The final session featured a conversation among four leaders in the California insurance industry, moderated by Steve Armstrong, chief actuary at Allstate Insurance Company and CAS past president.

Each panelist represented different stakeholders in this very large and strained insurance marketplace:

- Rex Frazier is president of the Personal Insurance Federation of California, representing the interests of insurance carriers.
- Doug Heller is director of insurance for the Consumer Federation of America (CFA), representing the interests of consumers.
- Victoria Roach is president of the California FAIR Plan, which is intended to be the insurer of last resort.
- Ed Cimini, FCAS, MAAA, is senior casualty actuary at the California Department of Insurance (CDI), which is intended to balance the interests of all insurance stakeholders.

Armstrong opened with an overview of the California property insurance market. From 2022 through September 2023, seven of the top 12 insurance companies have paused or restricted new business despite rate increases approved or pending with the CDI. The FAIR Plan has increased to 3% of the California market, becoming the unintended insurer of first resort. At the same time, AM Best has downgraded several com-

panies due to their risk concentration in California.

In addition, rate filings are becoming more complex year-to-year; CDI filing reviews can take longer than six months and consumer groups are empowered to engage in the California rate filing process. Finally, insurers will not write in high-risk areas unless they can cover 100% of consumer claims and their expense, along with earning a fair profit.

Armstrong then summarized California's [Sustainable Insurance Strategy](#) (SIS), a package of reforms unveiled by Commissioner Ricardo Lara on behalf

### **From 2022 through September 2023, seven of the top 12 insurance companies have paused or restricted new business despite rate increases approved or pending with the CDI.**

of the CDI in September 2023. This comprehensive plan has three overriding goals:

- Provide accessible insurance for Californians.
- Create a resilient insurance market.
- Protect communities from climate change.

The SIS is responding to a complex web of market challenges, so it includes a lengthy list of regulatory solutions which Armstrong summarized from the [CDI's press release](#):

- Transition homeowners and businesses back to traditional carriers, with commitments from insurers to cover all parts of California by writing no less than 85% of their statewide market share in high wildfire risk communities. For ex-

ample, if a company writes 20 out of 100 homes statewide, it must write 17 out of 100 homes in a distressed area.

- Give FAIR Plan policyholders who comply with the new ["Safer from Wildfires" regulation](#) first priority for transition to the normal market, thus enhancing the state's wildfire safety efforts.
- Expedite the CDI's introduction of new rules for the review of climate catastrophe models that recognize the benefits of wildfire safety and mitigation actions at the state, local and parcel levels.

- Direct the FAIR Plan to expand commercial coverage to \$20 million per building to close insurance gaps for homeowners' associations and condominium developments. This will help the state meet its housing goals and provide required coverage to other large businesses in the state.
- Hold public meetings to explore incorporating California-only reinsurance costs into rate filings.
- Improve rate filing procedures and timelines by:
  - Enforcing the requirement that insurers submit a complete rate filing.
  - Hiring additional CDI staff to review rate applications and inform regulatory changes.



- Enacting intervenor reform to increase transparency and public participation in the process.
- Increase data reporting by the FAIR Plan to the CDI, legislature and governor to monitor progress toward reducing its number of policyholders.
- Order changes to the FAIR Plan to prevent it from going bankrupt in the event of an extraordinary catastrophe. The changes would include building its reserves and other financial safeguards.

With the background set, Armstrong introduced the four panelists and asked Cimini to start the discussion by describing how life has changed at the CDI given the new strategy. His answer began with staffing — the human face of the department. The passage of Proposition 103 in 1988 prompted the CDI to expand its staffing significantly, and many of those staff are retiring after 35 years of service. The CDI is hiring replacement staff with far less industry and regulatory experience, requiring the remaining tenured staff to invest in training and development of new hires to review the approximately 8,000 filings received per year across the wide range of insurance products. Staff transition is slowing the implementation of the SIS and requiring the department to rely on external subject matter experts for some processes, like the climate catastrophe model review.

This first question (and several that followed) led to verbal sparring between Heller and Frazier as they discussed the difficult balance between availability and affordability of insurance products, as well as expediency and due diligence in rate filings. Heller emphasized the importance of ensuring that insurance

products are priced correctly. CFA considers getting it right more important than fast rate filing approvals and speed to market. Frazier countered by reminding the audience that Proposition 103 includes a requirement for timely review of rate filings (within 60 days), and companies are experiencing multiples of that in recent years. For example, Roach shared that the FAIR Plan's most recent rate filing took two years to get approved.

Given many parts of the SIS impact on the FAIR Plan, Armstrong asked Roach what her organization is doing in response to the announcement. First, they have already expanded FAIR Plan underwriting limits to accept up to \$20 million coverage per commercial location. Given that they are required to have broad availability for high-risk properties, they are working on filings to improve overall rate adequacy and implement new surcharges for high-risk characteristics. They are changing to a different vendor for wildfire risk scoring and were first in the market to offer a wildfire mitigation discount. Even with all that, the FAIR Plan continues to grow 20% year-over-year, which is not optimal for a healthy market and not sustainable for any single writer.

Armstrong asked Cimini where the Department of Insurance is heading on its review of catastrophe models and inclusion of the net cost of reinsurance in rate filings. Cimini summarized that the department is progressing well on both topics and is on pace for implementation by the end of 2024, as promised in Commissioner Lara's announcement. Roach shared that the FAIR Plan is actively meeting with the CDI about incorporating their reinsurance costs into their rate filings to ensure actuari-

ally sound pricing.

Heller reiterated his caution on the industry's sense of urgency for change when the California homeowners' insurance market has been extremely profitable since the 2017-2018 wildfire seasons. CFA believes that prospective combined ratios in California homeowners will be well below the rest of the U.S. based on the amount of rate increases approved since 2019. Further, CFA advocates for regulation of reinsurers because they earn higher returns than primary insurers without comparable regulation and consumer protection.

Frazier countered about the market's apparent profitability as losses experienced from the 2017-2018 wildfires more than offset the eight profitable years in the last decade. He said most carriers today still have double-digit rate indications using the CDI's approved formula. He also pointed out that California has a regulation allowing the use of reinsurance costs for three products (notably earthquake), but not wildfire. So, he argued, the industry is constrained by existing regulations beyond the provisions of Proposition 103.

After taking questions from the audience, Armstrong had to close the conversation with many of his planned questions left unasked. The spirited discussion and differing views across the stakeholders make clear the complex challenges of improving the availability and affordability of property insurance in California. If you were not able to attend this Annual Meeting session, it is worth your time to watch it on demand. ●

---

*Dale Porfilio, FCAS, MAAA, is the chief insurance officer for the Insurance Information Institute.*

## Inflation: A View from the Top By JIM LYNCH

**M**ost research on inflation is written when inflation is happening. One excellent overview, though, was undertaken when it wasn't clear whether prices would rise or fall.

That was around 2010. The U.S. was stuck in an economic rut after the Great Recession, a slowdown so extreme that some economists worried prices would fall relentlessly. At the same time, lawmakers and the Federal Reserve injected trillions into the economy, leading some other economists to fear prices would soar.

Neither extreme happened, but in 2012, actuarial science academicians Kevin Ahlgrim and Stephen D'Arcy published "[The Effect of Deflation or High Inflation on the Insurance Industry](#)."

The Casualty Actuarial Society, the Canadian Institute of Actuaries and the Society of Actuaries jointly supported the paper.<sup>1</sup> It was intended as a primer and guide and still serves as a clear enunciation of what inflation and deflation are, how they are measured, how they affect insurers and, at a high level, how they can be modeled.

Following is an overview, with some comment on how well the paper applied to the inflation of the early 2020s.

Section 1 discusses the causes of inflation, how the government measures inflation and how all of that affects insurance costs.

The causes of inflation you probably remember from economics class:

- Cost-push inflation comes from rising underlying costs. We saw this in early 2022, when Russia's invasion

of Ukraine [drove up grain and oil prices](#).

- Demand-pull inflation arises when lots of people want to buy the same thing. The seller responds to the increasing demand by raising prices. This occurred early in the pandemic when the lockdown turned the United States into a nation of remodelers. Lumber prices rose more than 300%, according to [trade journals cited by National Public Radio](#).

The measurement of inflation is important to insurers because, as the authors put it, "the effects on insurers may be dramatically different" from what the official statistics show.

Government measurements, like the consumer price index, adjust inflation for product quality. These are

to replace them. This implies that growth in claim severity will always exceed an underlying inflation measure.

Ahlgrim and D'Arcy mention two other effects impacting insurance costs that are not perfectly captured by government indices. Auto liability insurers face exposure to the cost of auto parts (for property damage claims) and the cost of medical treatment (for bodily injury claims).

There is also a knock-on effect, as inflation affects other parts of the economy that can affect insurer costs. For example, unemployment is often low when inflation is high. Low unemployment can affect the number and size of workers' compensation and disability claims.

Section 2 discusses inflation trends across time. The authors suggest infla-

### **There is also a knock-on effect, as inflation affects other parts of the economy that can affect insurer costs.**

known as hedonic adjustments, "the extra costs embedded in new products that reflect product upgrades." Ahlgrim and D'Arcy note that in the decade preceding their paper, the retail price of automobiles increased on the order of 25%, but the official inflation rate on autos was likely considerably less. Newer cars have features old cars lacked. The new car costs more, but that is partly because the new car is a better car. Government statistics reflect that.

The new features don't show up in the inflation rate, but if there is an accident, an insurance company must pay

tion falls into three regimes, a topic they return to later. They define:

- Normal inflation, between 0% and 6% annually. Their data (1914-2010 in the U.S. and 1916-2010 in Canada) showed normal inflation occurs about two-thirds of the time.
- High inflation, above 6%. This happens about 20% of the time. They note that inflation also fluctuates more in this regime.
- Deflation, which happens least frequently. Inflation fluctuates least during periods of negative inflation. Section 3 summarizes research into

<sup>1</sup> The paper discusses life insurance as well as property-casualty, but I will only focus on the latter.



**Table 1.**

Inflation Regime	Avg. Inflation	Avg. UPM	Corr. Inf & UPM	Avg. NII	Corr. Inf & NII	Avg. Stock Return	Corr. Inf & Stock	Avg. Unemployment Rate	Corr. Inf & Unemp
Deflation	-4.0%	1.2%	0.49	3.4%	-0.69	9.7%	0.45	11.9%	-0.42
Moderate	2.6%	-1.7%	-0.26	3.8%	0.37	8.1%	-0.18	6.3%	0.03
High	10.5%	0.6%	-0.04	4.3%	-0.02	2.0%	-0.19	5.6%	-0.02
Total	3.4%	-0.8%	0.01	3.9%	0.22	7.0%	-0.11	7.0%	-0.38

UPM = Underwriting profit margin

NII = Net investment income as a percentage of average assets

how inflation affects insurance results.

Claim costs rise, of course — more than the official inflation rate indicates, for reasons we’ve discussed. Any claim costs involving health care are further distorted because health insurers can negotiate the cost of treating an injury in advance, while property-casualty insurers generally cannot.

In addition to affecting costs of future claims, a rise in inflation can cause loss reserves to develop adversely, and the increase is taken directly from surplus. Longer-tailed lines suffer more.

The authors home in on how results differ by the level of inflation — deflation, normal or high — that they defined earlier. I’ve reproduced their results in Table 1.

They caution against overinterpreting results, but note that the data show:

- Underwriting profits are lowest when inflation is moderate and highest during periods of deflation. When inflation is high, underwriting profits were not highly correlated with the inflation rate.
- Net investment income was fairly even across inflation regimes. It was positively correlated with moderate inflation and negatively correlated

with deflation.

- Stock returns were highest during deflationary periods and lowest when inflation was high.
- When inflation was high, unemployment was low, and vice versa.

The recent high-inflation years of 2021 and 2022 don’t exactly follow that script, according to U.S. industry results published by [the National Association of Insurance Commissioners](#).

- Underwriting profits declined, with the combined ratio rising from 98.7 in 2020 to 99.6 in 2021 and 102.5 in 2022. The authors’ data indicated the opposite would happen. Catastrophes and rising auto frequency — presumably uncorrelated with inflation — took their toll.
  - Net investment income rose a little in 2021, and — consistent with the authors’ data — a lot (more than 30%) in 2022, as insurers were able to put new premium into higher yielding investments.
  - Capital gains rose in 2021 but fell in 2022, consistent with stock performance in both years. The authors’ data signaled weak performance was most likely to occur.
- Section 4 discusses how insurers

can mitigate risk during periods of high inflation or deflation.

When inflation is high, they suggest reducing policy terms — moving from, say, annual policies to six-month policies — with actuaries adjusting rates as frequently as possible. They recommend reserving actuaries use methods that separate inflation rates from loss experience, then plug up-to-date inflation estimates into the model.<sup>2</sup> Lines of business subject to premium audit should beef up the audit function.

To invest when inflation is high, Ahlgrim and D’Arcy suggest moving to short-term bonds, which are less vulnerable to changes in the inflation rate. This would reduce earnings, usually, but less so than the capital loss induced by holding longer-term bonds. They also suggest investing in commodities that affect insurer costs the most, like steel, timber and other drivers of replacement costs.

Deflation, they note, usually happens when the economy is quite weak. Higher unemployment means fewer renewals. The lapse rate increases. They recommend focusing on areas where counterparty risk is great: agents’ balances, installment payments, unpaid balances.

<sup>2</sup> The authors point specifically to Greg C. Taylor, “Separation of Inflation and Other Effects from the Distribution of Non-Life Insurance Claim Delays,” *ASTIN Bulletin* 9, 1-2:219-230; and Stephen D’Arcy and Richard W. Gorvett, “Measuring the Interest Rate Sensitivity of Loss Reserves,” *Proceedings of the Casualty Actuarial Society*, Vol 87, 2000, pp. 365-400 <http://www.casact.org/pubs/proceed/proceed00/00365.pdf>

Section 5 touches on how actuaries could model inflation. They suggest starting from a simple autoregressive model — a weighted average of the current inflation rate and the long-term inflation rate, plus a random error term. They also suggest building a regime-switching component into the models. With regime switching, the mathematics doesn't change — the model is still a weighted average — but when moving

from one regime to the next, the parameters feeding the model do.

The authors don't go into much detail about modeling in this paper. They had built a public access model, and left the details to an accompanying paper. Both papers and the public access model can be found at the following URL: <https://www.casact.org/abstract/effect-deflation-or-high-inflation-insurance-industry>.

Overall, Ahlgrim and D'Arcy give a sound, clear outline of the impacts of inflation on insurers. Their work is helpful not only to actuaries, but to anyone who works in the insurance industry. ●

---

*Jim Lynch, FCAS, MAAA, is retired from his position as chief actuary at Triple-I and has his own consulting firm.*

## ON THE SHELF

### How Wall Street Looks at Tail Risk By JIM LYNCH

***Chaos Kings* by Scott Patterson, Scribner 2023, \$15.00**

For an insurance professional, *Chaos Kings* is thought-provoking until its narrative hits a brick wall. Author Scott Patterson, a veteran reporter for *The Wall Street Journal* and a *New York Times* best-selling author, profiles the quants who find profit in financial calamity.

*Chaos Kings* purports to explore the dark regions where quants “turn extreme events into financial windfalls.” And what is insurance but a dark region where actuaries turn extreme events into, if not windfalls, steady income streams?

I thought I'd be reading how Wall Street profits from apocalypses: earthquakes, wildfires and hurricanes. Patterson instead focuses on metaphorical quakes, fires and 'canes. When financial markets plunge — for whatever reason — characters in this book can make

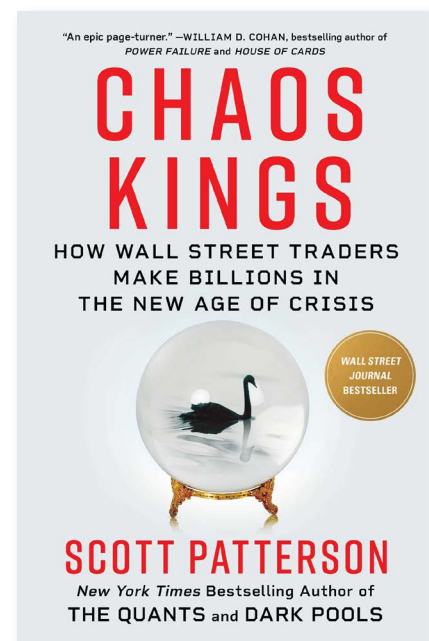
millions.

How do they do it? The narrative, at first, pits competing visions.

On one side are a team: derivative trader Mark Spitznagel and theorist Nassim Nicholas Taleb. Spitznagel learned in the pits of the Chicago Board of Trade that one big score can offset dozens or hundreds of tiny losses. Taleb popularized the idea of black swans — extraordinary events that can't be predicted precisely but that affect markets in predictable ways.

Their life lessons drive their financial strategy. They purchase extraordinarily cheap stock options, usually puts, whose values rise when the value of their underlying security falls. The options are cheap because markets underprice the likelihood of disaster.

When the market is wrong Spitznagel and Taleb benefit. At the outset of the



global financial crisis in 2008, while the S&P 500 fell 37%, their Universa hedge fund made \$1 billion.

Their opposite is Didier Sornette, a French mathematician who noticed that the pattern of stock prices in the late 1990s resembled the signals certain pressure tanks throw off as they approach failure. It was a universal failure signal, he concluded, and so he successfully predicted the bursting of the dot-com bubble in 1999.

Success sent Sornette on a modeling quest. He sought Dragon Kings — rare, catastrophic market events that, given enough information, could be predicted.

The parallels to actuarial science are obvious. Author Patterson sees them but oversimplifies. “Insurers, who can diversify risk across many independent events, worry only about the expected loss,” he writes. “But when there’s no one able to provide insurance ... then you absolutely must ... add a risk premium.”

Like Sornette, we seek models that pinpoint where calamity awaits. We worry about the tail of the distribution. And we do add a risk premium, where one is allowed and appropriate.

Unlike Sornette, we understand at a deeper level the changing nature of risk. Insurance history teems with risks that weren’t anticipated but were covered. Asbestos losses were an expensive example; ransomware a recent one. Using Sornette’s imagery, today’s Dragon King was a salamander not long ago. How do you model that?

Actuaries know a good model can explain a lot, but it can’t explain everything. If it did, it wouldn’t be a model. It would be reality.

Author Patterson might realize the futility of Sornette’s approach. He refocuses on Spitznagel and Taleb and

their hedging. It’s a good call from a veteran financial writer. Patterson worked at *The Wall Street Journal* and wrote a bestseller, *The Quants*, about the rise of mathematical traders.

The author sketches his characters enough to keep them interesting. Sornette motorcycles L.A. freeways at 175 mph.

Spitznagel snowboards deep powder and guides gliders above mountains. But he is a patient trader, absorbing

doesn’t): The strategy doesn’t eliminate risk. It shifts it. If markets tank, can the folks who sold you those cheap puts pay what they owe? Counterparty risk drove the 2008 financial crisis. Owners of mortgage securities had hedged their risks. When the securities faltered, the counterparties couldn’t pay.

It’s all good fun reading, until that brick wall. Two-thirds of the way into the book, dragons and swans yield to an exploration of the risk of climate change.

## **The parallels to actuarial science are obvious. Author Patterson sees them but oversimplifies.**

years of tiny losses before calamity triggers a payoff.

Taleb goes swan crazy. After the 2008 market crash the term “black swan” becomes a buzzword. Taleb embraces his celebrity and starts to see threatening swans everywhere: black ones, white ones, gray ones.

The true foe of Spitznagel and Taleb is modern portfolio theory, the investing philosophy that suggests diversifying investments at, say, 60% stocks and 40% bonds, will maximize gains while minimizing risk. Spitznagel and Taleb would recommend an off-kilter bar-belling of extremes. They counsel something like 97% in stocks and put 3% in their Universa fund, with its strategy of buying way-out-of-the-money puts for the rainiest of days.

The 97% strategy means you’ll make more in a typical year because stocks generally outperform bonds. The 3% hedge protects you in years roiled by bursting bubbles or pandemic panics.

It’s worth noting (Patterson

It’s certainly an important issue, but the risk has been reasonably well modeled. The initial forecasts, 30 years on, have held up. Climate change is a problem of politics, not math or science.

For the rest of the book, the author flails as anyone might after a brick-wall encounter. He conflates the Jan. 6 insurrection; the collapse of Texas’ electrical grid; water-treatment problems in Jackson, Mississippi; wildfires near Mount Rainier; and Hurricane Ida to suggest a world gone out of control. He glosses over solutions — parametric insurance grounded in the blockchain; gray swan research by Aon; a Lloyd’s of London project.

The book feels slapdash as it concludes. The narrative drive and tension that made it fun are gone. It fails to show a coherent approach to the cataclysms of the 2020s.

But perhaps that is the author’s ultimate point. ●

## Shopping For Data By JIM WEISS

### **Do you like your data organic?**

Imagine you are hosting some dignitaries at your home for a delicious meal to-night. Feel free to choose whichever dignitaries you wish to imagine hosting, but for the sake of argument, let's assume we are wining and dining with CEO Victor Carter-Bey, CAS President Frank Chang and CAS Board Chair Roosevelt Mosley. Where will we be shopping for our ingredients — the local ShopRite, Whole Foods or perhaps the nearest farmers market? Suppose besides dinner, we are also serving these gentlemen some freshly baked actuarial analysis for dessert. Where are we shopping for the analysis ingredients? In either scenario, the final taste left behind may depend in part on our shopping decisions.

### **Verdant pastures, unpasteurized**

To provide our guests with the most organic experience, we may travel to a local farm, pick some fruits and vegetables, milk a few cows and perhaps herd some livestock into our trunk. When we manage to get these items home, it will likely be a grisly and time-consuming endeavor to make them edible for our guests — but there will be little doubt as to the items' freshness or quality.

Similar to our farm, a data lake contains fresh, uncontaminated ingredients such as web server logs, clickstreams or telemetric data, in native formats such as JSON or XML. For example, if a prospective policyholder obtains a quote over an insurer's website, all the information accumulated during that journey — such as entries and selections, clicks and uploads, as well as any information permissibly retrieved via third-party web services — may be

stored as a single semi-structured object and sent swimming in the lake. We may need to wield some tools that we are less familiar with, such as Python, to locate these items and render them suitable for analysis, but at least we know the exact path they took from farm to table. As we become more familiar with the carving tools, we may become more adept with them, or we may simply decide to

house benefits from some artisan having already gone to the data lake and magically transformed JSON blobs and overgrown XML trees into endless supplies of majestic and well organized columns for us. Any quoting option or click sequence from the aforementioned user journey tagged in even one XML earns its very own column on every row of the warehouse. We all know columns

**Similar to our farm, a data lake contains fresh, uncontaminated ingredients such as web server logs, clickstreams or telemetric data, in native formats such as JSON or XML.**

befriend other skilled professionals such as butchers or web developers who can help us prepare our food and data from farm/lake to table in the future.

Unfortunately, the time and effort required to execute effectively here likely renders the lake impractical for the present predicament.

### **Aisles upon aisles, shelves upon shelves**

Rather than reaping and butchering our own ingredients, we may instead pull over at Costco (assuming we are members). Here we will have economical access to virtually limitless supplies. We may need to buy in bulk — 50 filets and 100 potatoes to serve three guests — and take a hydraulic lift to reach the gravy. However, we can rest assured that everything we need will be neatly packaged, on a dustless shelf (row), on one side or another of a spacious, cryptically labeled aisle (column).

Similar to Costco, a data ware-

(mostly empty or not) lend themselves very well to the types of longitudinal analysis used by actuaries, particularly in certain Microsoft Office applications that many of us excel at and use frequently.

If we have an elaborate vision and a fair chunk of the afternoon to devote to the cause, a data warehouse may provide amply for our guests — but it still requires prior knowledge to navigate, and it offers a lot of stuff we may not want or need.

### **Whatever fits on a microwavable tray**

Running out of options, we may consider Walmart as a final resort. Here we will instantly feel welcome (thanks, greeter!), and the freezer section will not be far from the entrance. Within minutes, we will find four Hungry-Man Dinners that have proteins, potatoes and veggies all in the same package — not to mention dessert. (We mean dessert in both the



# DATA MART



traditional sense of a sweet treat following a meal, as well as in the figurative sense of the post-nosh actuarial analysis we promised the guests — assuming nutritional information broadly qualifies as actuarial.) Once home we can throw our four trays in the microwave, go set the table and hope for the best.

Similar to Walmart, a data mart benefits from someone having already rummaged through data lakes and warehouses and slapped together what they needed into a single “ready-to-eat” package. Do we need quoting, claims and customer satisfaction data for our analysis? So did some other person once! Their hard work will save us all the time we would have spent rummaging through lakes and warehouses. If their work does not exactly serve our purposes, we can sprinkle on some herbs (joins) and spices (transformations), serve our guests and write down the recipe for posterity. If the guests really like it (or pretend to), we might even open our very own data mart that regularly has the modified recipe in supply.

Data marts may not always yield five-star analyses, but sometimes a Hungry-Man dinner can be just what the doctor ordered.

## Bringing everyone to the table

So where are we shopping for our dinner and analysis ingredients after all this? That will likely depend on several factors. An obvious one is the amount of time we have on our hands, with the less time we have, the further down the supply chain we’ll need to go. Another factor might be the tools at our ready disposal, whether those tools are open-source programming languages that can manipulate non-structured and semi-structured data (lakes) or the prior knowledge of how our data is organized (warehouses). The three guests I imagined do not strike me as fussy, but they probably expected more than microwaved Hungry-Man meals and recycled analyses — so our stakeholders’ expectations should also factor into our decisions. We may also consider whether we plan to serve this meal/analysis again and how others in our community might make productive use of the leftovers.

All else equal, I generally prefer to get my food from the farm and my data from the lake. In a practical sense, I often find myself in Walmarts or data marts buying Hungry-Man meals and analyzing glommed datasets. Either approach can be okay, but our default

should not always be to pull over at the most nearby or expedient place we think has our supplies. As technology and our stakeholders’ needs evolve, so should we. Generative AI feasts on non-structured data and setting it loose in a mart would be like sending Gordon Ramsay to 7-Eleven. Moreover, even if we are meeting stakeholders’ expectations, we could potentially exceed them by availing ourselves of data that does not make its way downstream. Do we even know how much fell off the truck on its way to the data mart? If not, we should consider asking our nearest enterprise architect. Analyses need not be single sourced, so we can also mix and match, getting our vegetables from the farm, our proteins at Walmart, our premiums/losses at the data mart and our clickstreams from the data lake. We can also ask our dignitaries if they mind waiting a few weeks for a more worthy meal or analysis. The more satisfying experience we provide our guests, the more likely they will be to come back in the future. ●

---

*Jim Weiss, FCAS, CSPA, is a vice president for Crum & Forster and is editor in chief for Actuarial Review.*

## The Rise of Open-Source Tools for Actuaries By KENNETH HSU AND BRIAN FANNIN

Over a century ago — even prior to the establishment of the modern SOA and CAS — individuals specializing in various insurance domains within different companies began congregating to exchange insights, collaborate and collectively advance their expertise on risk management using mathematics and statistics. Since its inception, actuarial science has embraced an open exchange of ideas, amassing a substantial repository of freely accessible papers, monographs and studies, all generously made available by the CAS and other research organizations.

Open-source software is designed to be publicly accessible — anyone can see, modify and distribute the code as he/she sees fit. These tools manifest in diverse forms, encompassing operating systems, software applications, programming languages and database management systems, among others. In 2019, the CAS inaugurated a [GitHub site](#), extending the ethos of actuarial science to encompass open-source software tools.

However, prior to determining one's

involvement, it is prudent to compare the advantages and disadvantages of adopting or using open-source tools compared with using other proprietary software products.

### Open-Source Tools Pros and Cons

Pros:

- **Cost:** Open-source tools are cost-effective because they are typically free to use, making them accessible to individuals and organizations with limited financial budgets.
- **Permission:** Open-source licenses often allow for extensive freedom in how the software is used, modified and distributed, enabling diverse and innovative applications. The software often has standardized licenses. We can finally leave our lawyers out of it.
- **Transparency:** Open-source tools provide transparency into their codebase, fostering trust and enabling users to verify security, functionality and privacy.
- **Reproducibility:** Because these tools are transparent, anyone will be able to reproduce and replicate

the results published by someone else.

- **Flexible:** Open-source tools can be customized and adapted to suit specific needs, making them versatile for a wide range of applications and industries. In fact, most open-source tools are utilized because of their flexibility.
- **Direct access to developers:** Users of open-source tools often have direct access to the developer community, facilitating quick issue resolution and collaboration. There's no need to go through help-desks and wait for your tickets to be rerouted by customer service agents that have little to no clue what you are asking for.
- **Speed:** Open-source tools are generally faster, especially for making complex calculations or running simulations.
- **Source of ideas and talent:** Open-source projects attract talent from around the world, fostering innovation and generating new ideas that benefit the entire community.
- **Democratic:** Open-source tools can

## Examples of Open Source Tools

### Operating Systems



### Software



### Languages



### Databases



promote an inclusive and democratic development model, where contributions and decisions are made by a global community rather than a single entity.

- **Pull requests:** Open-source projects encourage collaboration through “pull requests” that can be made when an independent developer wants his/her code or contribution “pulled” into the main project’s code repository. This allows anyone to contribute by fixing bugs or implementing new features to the project.
- **Fork:** In the event of a disagreement (for example, when a pull request is rejected) the ability to fork open-source projects allows users to create new versions of the software, promoting diversity and competition in the development ecosystem.

Cons:

- **Skills:** Open-source tools can be more complex, necessitating a more significant up-front investment of time and effort to master compared to some commercial alternatives, especially if you need to customize the tools for your specific needs.
- **Familiarity:** Open-source tool projects are often foreign to many users, both in terms of understanding the raw source code and accessing results. This sometimes creates additional friction between business units.
- **Compatibility:** Compatibility issues may arise when integrating open-source tools with existing legacy systems, potentially causing disruptions

and additional development efforts.

- **Usage restrictions:** Some organizations may have cybersecurity policies or governmental regulatory constraints that limit the use of open-source tools, potentially hindering their adoption.
- **Limited resources:** Open-source projects may experience irregular maintenance or even abandonment due to their limited resources, leaving users with outdated or unsupported software and potential security vulnerabilities.
- **Intellectual property & licenses:** Users sometimes need to be aware of the various open-source licenses and the associated permissions and requirements and how these would impact their company intellectual property. For example, the General Public License (GPL) requires derivative works to be distributed under GPL terms, which means the derivative works must be open-source as well.

### CAS Technology Survey

The CAS conducts an annual technology survey, and the responses to the question “In which of the following tools do you plan to increase your proficiency in the next 12 months?” speak for themselves. Respondents are overwhelmingly interested in advancing skills that utilize open-source concepts; the top three choices (R, Python, and SQL) are all open-source tools. Even though the respondents might not consider if a project is open-source or not as the most important criteria, there is a certain

appeal to open-source tools that make them popular and attractive.

### Examples of Top-Rated Actuarial Open-Source Tools

ActuarialOpenSource.org, which is an open-source project itself, compiles a list of all popular actuarial open-source projects across all practicing disciplines. And of the top five projects (ranked by GitHub stars<sup>1</sup>), three of them are property and casualty related.

#### #1 [chainladder-python](#) (P&C,

**Python):** The chainladder-python package offers a range of features including manipulation of triangle data, calculation of link ratios and estimation of IBNR using both deterministic and stochastic models.

#### #2 [lifelib](#) (Life, Python): lifelib serves multiple purposes, including model validation, pricing, research, valuation, asset-liability modeling, risk assessment and modernization of actuarial practices by replacing spreadsheet models.

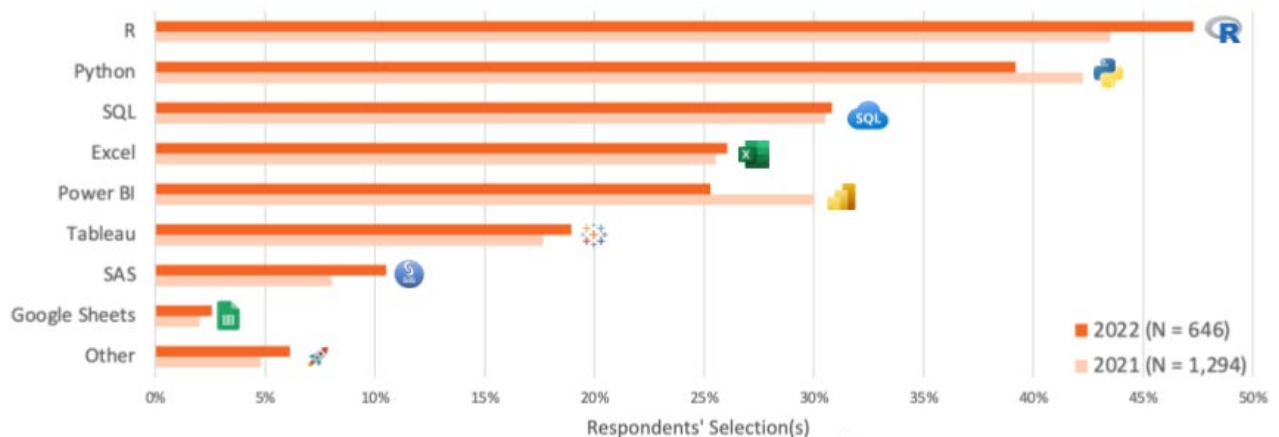
#### #3 [OasisLMF](#) (P&C, Python): OasisLMF offers a comprehensive command-line toolkit for the end-to-end development, testing and execution of Oasis models. These models can calculate ground-up losses, direct/insured losses and reinsurance losses.

#### #4 [ChainLadder](#) (P&C, R): ChainLadder is an R package designed for insurance claims reserving, offering a range of methods and models commonly used in the field. This is also the original package that inspired chainladder-python.

#### #5 [modelx](#) (General, Python): modelx

<sup>1</sup> GitHub stars: A “star” in GitHub is a way for users to indicate that they like a particular repository or that they find it useful. When a repository is starred, its developers are notified, which can serve as a way to encourage them to continue developing and maintaining the project.

## Which of the following tools do you plan to increase your proficiency in the next 12 months?



Extracted from the CAS Technology Survey  
[github.com/casact/technology\\_survey](https://github.com/casact/technology_survey)

is a numerical computing tool that transforms Python into a spreadsheet-like environment. It is ideally suited for implementing complex mathematical models expressed through extensive systems of recursive formulas.

### Other Notable Open-Source Initiatives (in Alphabetical Order)

**actuar** (P&C, R): actuar is one of the first open-source projects. It focuses on computational functionality for additional probability distributions, loss modeling, risk and ruin theory, simulation capabilities and credibility theory.

**actuaRE** (P&C, R): actuaRE allows you to fit a random effects model using either the hierarchical credibility model, a combination of the hierarchical credibility model with a generalized linear model or a Tweedie generalized linear mixed model.

**aggregate** (P&C, Python): aggregate is a modeling library designed to provide approximate compound

distributions using DecL, an expressive domain-specific language.

**FASLR (P&C, Python):** FASLR is a graphical user interface for open-source reserving packages, mainly chainladder-python.

**Loss Data Analytics (general, language-agnostic):** Loss Data Analytics is a freely available textbook that discusses many insurance topics such as modeling frequency and severity, model selection, aggregate loss models, simulations, risk classification, experience rating, credibility theory, portfolio management and many more.

### What's Next for Actuaries and Open-Source Projects?

Over a century ago, all the P&C actuaries practicing in North America could — and sometimes did — fit into a hotel ballroom to exchange ideas and advance the profession. This model has evolved in the decades since. Academic publication continues, but does it meet the moment? Open-source tools seek a level

of transparency and reproducibility that was unthinkable when the profession began. It is no longer necessary for a modern actuary to reinvent the tools that he/she often uses. But to fully exploit this opportunity, actuaries — along with their employers and actuarial organizations — must be willing to expose ideas tangibly and openly. Other fields are prepared for this. Are we?

*Special thanks to Gene Dan from SCOR, John Bogaardt from WCF, Kenny Lee from Tokio Marine, Matthew Caseres from Intrepid Direct, Patrick Yu from Kaiser Permanente, Rajesh Sahasrabudhe from Oliver Wyman and Robert Ballmer from ISMIE Mutual for contributing ideas to this article. Also, thanks to the many developers for maintaining these open-source tools and projects.* ●

*Kenneth Hsu, FCAS, MAAA, CSPA, is head of actuarial for Breach Insurance and a member of the AR Working Group. Brian Fannin, ACAS, CSPA, is a consultant for Milliman.*



# VALUED

At the CAS, we strive to be a valued and trusted resource for risk professionals, giving them unparalleled support as they develop professionally and advance their careers.

Learn more about our premier educational resources and training for the global community of property and casualty experts at [casact.org/valued](https://casact.org/valued).



**Expertise. Insight.  
Solutions.®**

[casact.org](https://casact.org)

**IT'S A PUZZLEMENT** By JON EVANS

# Hyperspace Ball and Cube

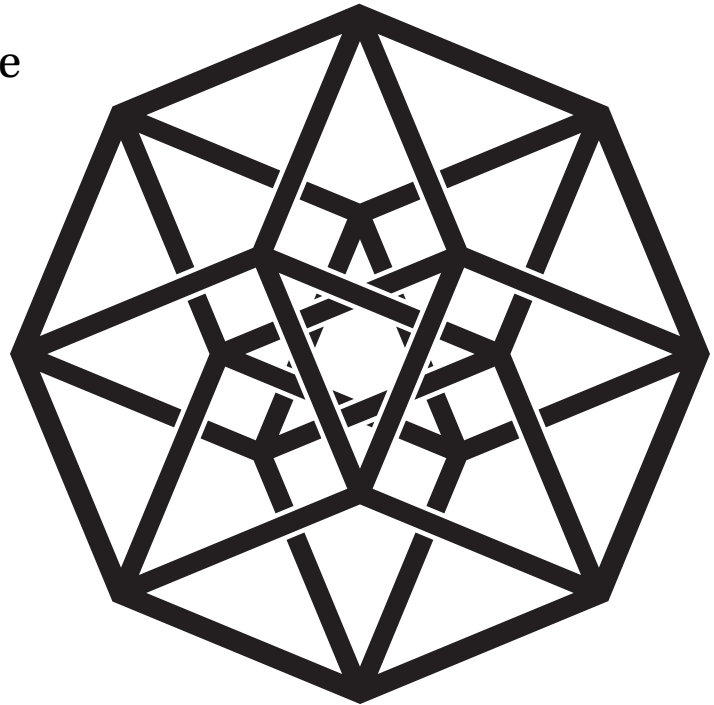
**A** 25-dimensional ball (a 25-ball) with radius 3 and a 25-dimensional hypercube with edge length 2 are concentric. What is the 25-dimensional volume of their intersection? Estimate with high confidence of at least three correct leading digits.

## Turning into Traffic

To recap the puzzle: You are at a stop sign on a two-lane road that intersects a four-lane (two lanes going each way) road without a stop sign. In each individual lane of the four-lane road, on average, a car passes by the stop sign every four seconds. Given your car's performance, cars on the intersecting road need to be at least four seconds away for you to safely make the turn. If you are in a right-hand traffic country, like the U.S, how long do you expect to wait to make a right-hand turn? How long is it for a left-hand turn? What if you are unlucky and

have to wait a long time (worst 10%, worst 1%, ...)?

Independent estimates from Bob Conger and John Berglund are very close. So, there is a very good chance they are right! Answers are in the table below, and details of their solutions are posted on the [AR website](#). ●



**Know the answer?**  
Send your solution to  
[ar@casact.org](mailto:ar@casact.org).

### Bob Conger's rounded estimates

	Right Turn	Left Turn
Mean waiting time	2.9 seconds	21.4 seconds
90th %ile waiting time	7.9 seconds	50.7 seconds
99th %ile waiting time	17.3 seconds	101.4 seconds

### John Berglund's rounded estimates

	Right Turn	Left Turn
Mean waiting time	2.873 seconds	21.447 seconds
90th %ile waiting time	8 seconds	51 seconds
99th %ile waiting time	17 seconds	102 seconds





2024 Spring Meeting

# ATL | **Adapt Transform Lead**

May 5-8 2024 • Atlanta, Georgia



Dive into a selection of sessions covering everything from the latest in predictive analytics and climate risk to essential business skills and professional ethics. Connect with industry leaders, engage in rich discussions, and expand your network. Whether you're looking to deepen your expertise, stay ahead of emerging trends, or lead with renewed vision, the Spring Meeting is your gateway to a future defined by excellence in the actuarial world.

Where will you take your career?

**[spring.casact.org](https://spring.casact.org)**





Expertise. Insight.  
Solutions.®

**Casualty Actuarial Society**  
4350 North Fairfax Drive, Suite 250  
Arlington, Virginia 22203 USA  
Phone: 703-276-3100, Fax: 703-276-3108  
[www.casact.org](http://www.casact.org)

PRESORTED  
STANDARD MAIL  
U.S. POSTAGE PAID  
LUTHERVILLE, MD  
PERMIT NO. 171

# ELEVATE YOUR INSURANCE INDUSTRY RESEARCH

Strengthen your assessment of public and private insurer performance and industry trends with *Best's Financial Suite*—the source for unparalleled ratings, data and analytics covering the insurance industry worldwide.



24.FIN039A