

actuarial REVIEW



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MITIGATION THAT MATTERS: *A Wildfire Case Study*



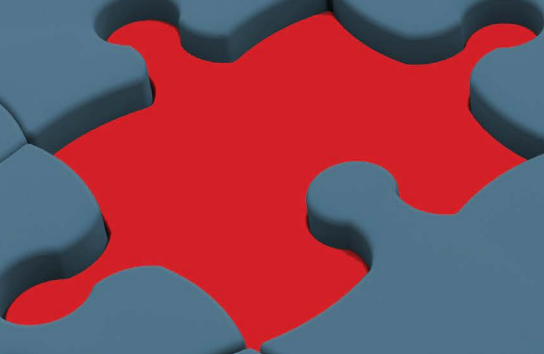


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Wildfire risk promises to be an ever-present problem for California and other Western states. An Annual Meeting General Session unpacks a recent CAS Research Paper on the importance of catastrophe models as well as mitigation efforts by homeowners.

More from the 2022 CAS Annual Meeting

Reports include the race and insurance pricing, diversifying the CAS membership pipeline and planning for the future of the actuarial profession. Also included are new *AR* web exclusives from the meeting.

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editor'sNOTE By ELIZABETH A. SMITH, AR MANAGING EDITOR

The Balminess of Minnesota

Minnesota in November. Who would've thought it could be so warm? Mind you, many people were sporting puffer jackets, gloves and hats, but the warmth at the CAS Annual Meeting in Minneapolis was as comforting as a great hug from an old friend.

The pandemic drags on, but life and meetings do go on. There's still a buzz of excitement that is present when people who've been shut in come together once again. They come to learn, to mingle or network, to listen or be listened to. They leave behind their usual surroundings in search of knowledge that nurtures them in their chosen professions.

And on a rainy Tuesday night, meeting attendees shrugged off career endeavors and got in touch with their childhoods on the rides at Nickelodeon Universe.

In our first issue of 2023, we look back to the not-so-distant past with coverage and photos from the CAS Annual Meeting. We publish CAS President Roo-

sevelt Mosley's first column as leader of the CAS. This "President's Message" lays out some of his plans for the year and makes plain why "firsts" are important. Meanwhile in "Random Sampler," CAS Past President Brian Brown dispenses his wisdom in his Annual Meeting Address to New Members. We also debut "Making Things Happen," an occasional column introducing readers to some of the many dedicated members who volunteer for the CAS.

Please enjoy this issue of *AR* - perhaps by a cozy fire. Happy New Year!

Correction

The It's a Puzzlement column, titled "Picking a Trusted Fiduciary" (November/December 2022 *AR*), contains an error. Two of Deckard's conclusions should have read as follows:

- Excluding Delilah, over half of the other candidates are truthful.
 - Excluding Leni, fewer than half of the other candidates are truthful.
- AR* regrets the error. ●



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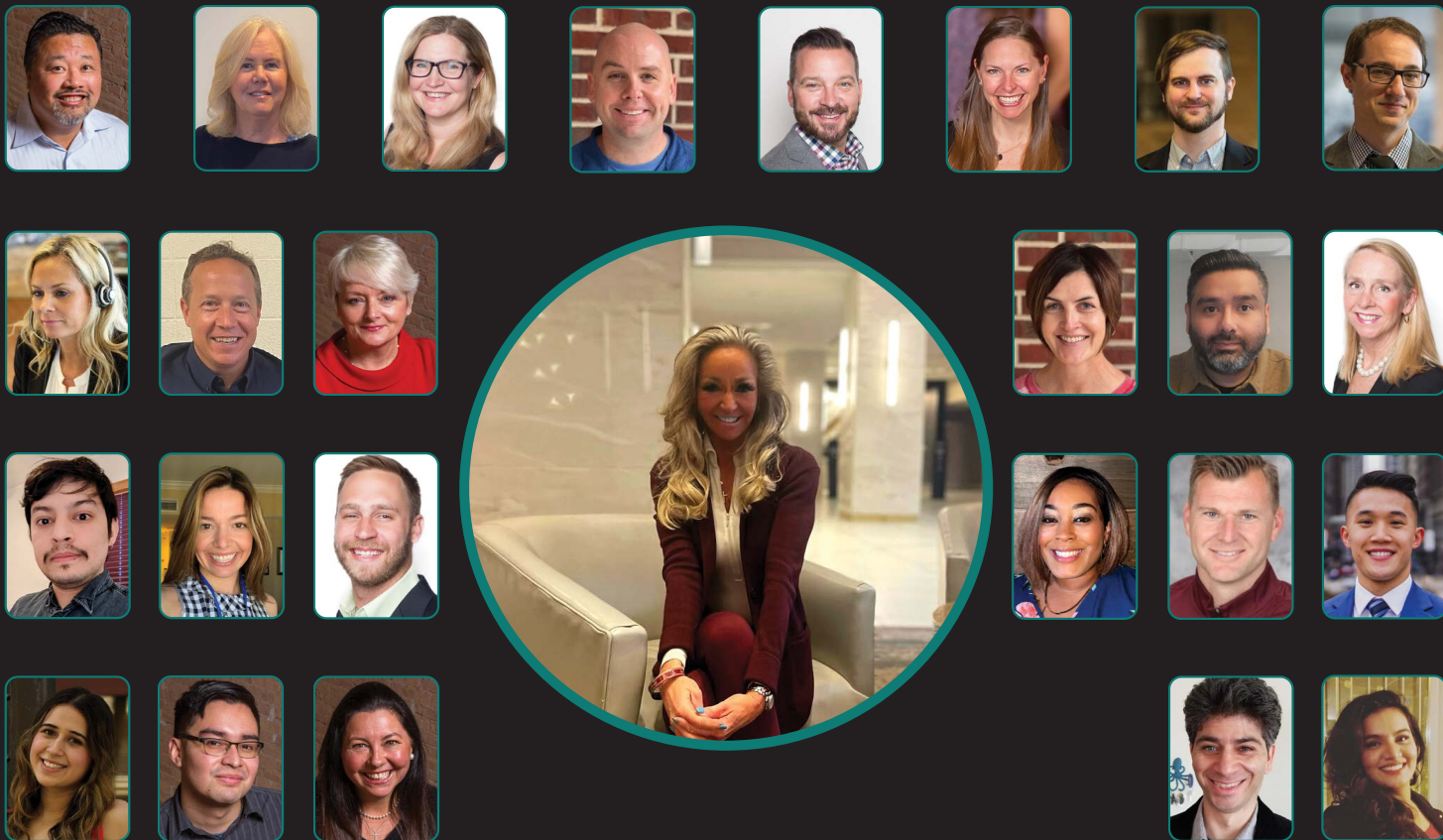
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Firsts Are Signals of Change

I am humbled and honored to serve as president of the CAS. It's a great time to be an actuary and working in the P&C field. Our profession is innovating and developing new approaches and solutions that will benefit the insurance industry as well as society. I feel fortunate to be able to continue my service to the CAS at such an important and exciting time.

The CAS, like any organization, may have issues it faces, but we are well-positioned for a very bright future. We can ensure that bright future by promoting effective communication; diversity, equity and inclusion (DE&I); and the essential skills identified in the CAS Strategic Plan as vital for the actuary of tomorrow: analytics, problem solving and domain knowledge. The advancement of those three issues will be the goal of my service as president.

As I indicated last summer when I made the decision to accept the nomination for CAS president-elect, my focus during my time in leadership will be on three things. First, I will work to continue to increase transparency and communication between the CAS Board of Directors and the membership. Significant strides have been made in this direction, including improved access to board meetings and minutes, and I look forward to continuing to strengthen the connection between the CAS leadership and our members.

Second, I am excited about the opportunity to continue moving the CAS Strategic Plan forward. As Kathy Antonello indicated in her most recent President's Message in the *Actuarial Review*, the board met at our retreat this past August and reaffirmed our

commitment to the envisioned future outlined in that plan. The first pillar of our strategic plan is focused on building skills for the future, and as we continue to build those skills, we need to boldly and frequently communicate the value that actuaries bring to those current and potential users of our services. This will ensure that actuaries continue to be sought after for our ability to apply analytics to solve key business problems.

Firsts are important because they are a signal that change is happening; but we cannot stop at firsts.

To demonstrate how actuaries solve business problems, we are working on a speaker series to highlight examples of actuaries who are doing just that — solving problems that may not be traditionally thought of as within the actuarial sphere. Stay tuned for more details.

The third pillar of our strategic plan is focused on international growth, and this will be a big part of telling our story broadly, as the opportunity to influence general insurance around the world is great. I recently had the opportunity to spend a week in Singapore last October at the Singapore Actuarial Society meeting. While I was there, I had the chance to spend time with our members, regulators and universities, and I am convinced now more than ever that we have a significant opportunity to impact the general insurance actuarial practice around the world.

Third, I commit to advancing DE&I both within the CAS and the actuarial profession more broadly. Diversifying our pipeline stands solidly as the second pillar of our strategic plan, and as we are

successful in advancing this effort, all of us who are part of this great organization will benefit. While I realize that this has been a point where everyone has not necessarily seen eye to eye, I believe that by cutting through misunderstanding and misconceptions about what DE&I truly is, we can focus on the things that I believe many of us agree with.

The CAS was founded in 1914. Ruth Salzmann became the first woman to be

president of CAS in 1978. Ollie Sherman became the first Black FCAS in 1984, 70 years after the CAS was founded. Linda Shepherd became the first Black woman to attain her FCAS in 1988. Recently, my friend John Robinson, FSA, became the first Black president of the Society of Actuaries. I will be the first Black person to serve as the president of this great organization, which is a truly humbling honor. Firsts are important because they are a signal that change is happening; but we cannot stop at firsts. If you think back to many of these and other firsts, we have reached the point for some of them where we have lost count. I don't know how many Black members we have now. And at some point in the future, as many of you stand in the role of leadership, I hope that for even the highest level of CAS leadership, we reach a point where we truly have lost count. Dare I dream for a day when the need to count is no more?

It is through faith in God, the dedi-

President's Message, page 8



March 13–15, 2023
San Diego, CA
Loews Coronado Bay Resort

Ratemaking, Product and Modeling Seminar



President's Message

from page 6

cation, love and encouragement of my beautiful wife, who is truly my rock and my support, the unwavering support of all the people at Pinnacle, and the support of all of you that I even feel able to serve in this role. One of my favorite pictures of leadership is from the Bible,

To me, leadership is a position of service

when Jesus, who led his disciples for three years, got down on his knees and washed all their feet. He underscored his definition of leadership when he said, "The greatest among you will be your servant."

To me, leadership is a position of service, and I commit to serving the CAS, its members and, ultimately, the constituents we serve faithfully during my term. Thank you. ●

ACTUARIAL REVIEW LETTERS POLICIES

Letters to the editor may be sent to ar@casact.org or to the CAS Office address. Please include a telephone number with all letters. Actuarial Review reserves the right to edit all letters for length and clarity and cannot assure the publication of any letter. Please limit letters to 250 words. Under special circumstances, writers may request anonymity, but no letter will be printed if the author's identity is unknown to the editors. Event announcements will not be printed.

COMINGS AND GOINGS

Jacqueline Lewis, FCAS, MAAA, has been promoted to chief risk officer at Tokio Marine North America Services (TMNAS). Lewis joined TMNAS in 2019 and has been leading the enterprise risk management team since then. She has more than 30 years of actuarial experience, serving in both primary insurance and consulting actuarial roles at several leading organizations, including Willis Towers Watson and ACE Group. Since joining TMNAS, she has also taken on responsibility for the overall environmental, social and governance efforts of the TMNAS companies.

Joseph Kilroy, FCAS, MAAA, has been promoted to chief actuarial officer at TMNAS. In his new role, Kilroy will assume responsibility for the TMNAS actuarial team and the services it provides to the Tokio Marine North America companies, including Philadelphia Insurance Companies, Tokio Marine America and First Insurance Company of Hawaii. Kilroy joined TMNAS in September 2021 as senior vice president and deputy chief actuary after a long career at Aon Global Risk Consulting leading their retail actuarial practice.

Gary Wang, FCAS, has been appointed as senior consulting actuary at Pinnacle Actuarial Resources, Inc. (Pinnacle). Wang re-joins Pinnacle from a large insurance consultancy, where he continued his analytics focus on a consulting team. Prior to that position, Wang was a senior consulting actuary at Pinnacle for approximately 15 years. He has extensive experience in the application of advanced statistical modeling techniques for insurance. His areas of

expertise include rating and underwriting plan design, homeowners and automobile, including vehicle characteristics analysis and scorecard and territory boundary development, among others. Wang has worked in the P&C industry since 1999 and currently serves on the CAS Ratemaking, Product and Modeling Seminar Planning Committee.

Achille Sime, who is a CAS Affiliate member, has been appointed consulting actuary at Pinnacle. Sime joins Pinnacle from his own consulting firm, SL Financial. He has over 19 years of experience in consulting and is a qualified actuary in the U.S. as well as France. He has served as an appointed actuary and loss reserve specialist for a number of companies in Bermuda and the U.S. His areas of practice include rate filings, actuarial pricing and catastrophe modeling for reinsurance renewals and loss reserve and funding studies for captive insurance companies and self-insured entities. Sime was the first Fellow of the Society of Actuaries in the general insurance track and has served on professional committees, including on the National Association of Insurance Commissioners' Educational Standards and Assessment Guidance Project, the American Academy of Actuaries' (AAA) P/C Extreme Events and Property Lines and the Property and Casualty Risk-Based Capital Committees as well as the AAA's Committee on Property and Liability Financial Reporting (COPLFR).

Megan Camanocha, ACAS, has been appointed consulting actuary at Pinnacle. Camanocha brings considerable P&C actuarial and predictive

analytics experience to Pinnacle. She has worked for several large insurance carriers and possesses a strong pricing background, with a track record in personal and commercial product lines. Her actuarial expertise includes rate adequacy and rate plan development for homeowners, inland marine and businessowners insurance products and workers' compensation reserving. Throughout her career, she has been committed to the development of women professionals in the actuarial and analytics fields. Currently, Camanocha co-leads the Measurement and

Reporting Committee of the Network of Actuarial Women and Allies (NAWA). ●

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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."

Robert Armen Bear (FCAS 1986) 1947-2022

Robert Bear, of Montville, New Jersey, died in November 2022 at the age of 75. Born and raised in Connecticut and New Jersey, Bear grew up with strong ties to the Armenian community through family and his involvement in associations. In his youth, he served in the National Guard. His passion for mathematics led him to the actuarial profession and he was a long-time CAS volunteer. He worked primarily in reinsurance, most recently for PXRE, and later formed his own company, RAB Actuarial Solutions LLC. He served for many years as a deacon and elder at the Armenian Church

in Paramus. He was a deacon and board trustee at the Community Church of Mountain Lakes, New Jersey, and was also very involved in the Unity Spiritual Center of Morris County. An avid dog lover, Bear served on the Montville Dog Park Committee for many years and was appointed president. He loved golf, swimming and theater — he was a longtime supporter of the Barn Theatre in Montville, which made special accommodations for him to be able to attend in his later years. He is survived by his wife of 45 years, Carolyn Jean Bear; daughters, Cheryl Bear and Crystal (Jordan) Goretti; sister, Iris Desilets; and two grandchildren. ●

CALENDAR OF EVENTS

March 13-15, 2023

Rate-making, Product and Modeling
Seminar & Workshops
San Diego, California

May 7-10, 2023

CAS Spring Meeting
Boston, Massachusetts

June 5-6, 2023

Seminar on Reinsurance
Philadelphia, Pennsylvania

September 11-13, 2023

Casualty Loss Reserve
Seminar & Workshops
Orlando, Florida

November 5-8, 2023

CAS Annual Meeting
Los Angeles, California

Visit casact.org for updates on meeting locations.

IN MEMORIAM

Robert Armen Bear (FCAS 1986)
1947-2022

2022 Annual Report of the CAS Discipline Committee

The [CAS Rules of Procedure for Disciplinary Actions](#) (as amended May 3, 2009, by the CAS Board of Directors) requires an annual report by the Discipline Committee to the CAS Board of Directors and to the membership. This report shall include a description of its activities, including commentary on the types of cases pending, resolved and dismissed. The annual report is subject to the confidentiality requirements.

2022 Activity

On January 4, 2022, the Discipline Committee received a report of an Actuarial Board for Counseling and Discipline proceeding with respect to Mr. Ryan Patterson, ACAS. In accordance with the CAS Rules of Procedure for Disciplinary Actions, a hearing was held on March 25, 2022, and continued on April 20, 2022.

The Discipline Committee panel voted unanimously to expel Mr. Ryan Patterson for materially violating Precept 1 of the Code of Professional Conduct, effective June 30, 2022.

In response to recommendations made by the CAS Discipline Committee in its March 2021 report of the inquiry involving unauthorized access of the CAS website, the CAS Board of Directors approved changes to the CAS Policy on Examination Discipline in February 2022.

In March 2022, the Discipline Committee chair worked with the CAS Chief Executive Officer and counsel to respond to a request by the Institute of Actuaries of India with respect to a disciplinary matter involving one of their members, also a member of the CAS. Consideration was given to the CAS Discipline Committee confidentiality

requirements as well as the terms of the Mutual Recognition Agreement between the Casualty Actuarial Society and the Institute of Actuaries of India in the CAS response.

In May 2022, the Discipline Committee was asked for guidance by the CAS Admissions Department with respect to a potential violation of [Precept 1](#) by a member. Several members of the Discipline Committee discussed the requirements of the [CAS Code of Professional Conduct](#) with representatives from the CAS Admissions Department with respect to this matter.

There were no cases pending before the committee as of November 30, 2022.

—Pat Teufel, Chairperson of the
2022 Discipline Committee
December 13, 2022 ●

CAS Volunteer Orientation Video Now Available

The CAS has released a new video developed to orient all CAS volunteers, both new and returning, on the CAS Council Structure and Strategic Plan.

The video, found at <https://youtu.be/OyVkOHXfYEE>, features CAS Vice President of Marketing and Communications Kim Guerriero, FCAS, and CAS Chief Executive Officer Victor Carter-Bey, DM.

Viewers can learn how each volunteer area fits into the overall volunteer structure and how volunteers' work helps achieve the components of the CAS Strategic Plan.

Video highlights include:



- a personal thank you to volunteers from CAS Leadership.
- overview of the CAS Strategic Plan.
- introduction to the CAS Council Structure.
- information on board committees, councils, working groups, task forces, and microvolunteer opportunities. ●

CAS STAFF SPOTLIGHT

Meet Carrie Cross, Strategy and Learning Partner

Welcome to the CAS Staff Spotlight, a column featuring members of the CAS staff. For this spotlight, we are proud to introduce you to Carrie Cross.

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

I am helping to develop the Actuary of the Future, a pillar within the CAS's Envisioned Future, by partnering with and developing strategies for the Professional Education and Admissions divisions of the CAS.

- **What inspires you in your job and what do you most love about it?**

I love implementing best practices in adult learning methodologies across all the educational offerings that the CAS provides from continuing education to certification.

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

I have a master's degree in public administration and 15+ years of

experience working with associations to develop high-impact, revenue-generating professional learning programs across health care, government, retail, talent development and now for actuaries.

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

My favorite hobby is being a mom to fantastic four-year-old twins and a six-year-old. Another hobby is helping professional women in mid-life learn how to grow through periods of transition.

- **If you could visit any place in the world, where would you go and why?**

I would go back to Israel, this time with my husband and kids. It's a country with a rich culture and long his-



Carrie Cross

tory, not to mention the best falafel and hummus you'll ever find!

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

Thanks to growing up in Duluth, Minnesota, I can both downhill ski and water ski with the best of them!

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

I'm known for digging in, investigating solutions and creating buy-in, figuring out what needs to get done, not being afraid to take a leap of faith based on calculated risks and trying again until I get it right. ●



EXPANDING GLOBALLY

CAS Leaders Visit Singapore, Malaysia and Vietnam

By RONALD KOZLOWSKI, FCAS

I With actuarial conferences beginning again in the fall of 2022 in parts of Asia, Roosevelt Mosley (then president-elect) and Frank Chang (current president-elect) learned firsthand about the growing general insurance markets in Asia. They travelled with the CAS's Asia Ambassador, Ron Kozlowski, attending local actuarial association conferences, meeting with local CAS members, regulators, employers, university faculty and students.

During the first week of October, Mosley and Kozlowski attended the Singapore Actuarial Conference 2022, "Economic Sustainable Governing Actuaries," presenting on the topics of race and insurance, the state of big data and analytics in insurance and corporate social responsibility. The CAS also hosted an employer's breakfast that gave Mosley insight into the local market, the good reputation of the CAS credential in Singapore and the need for the development of CAS members' soft skills. Mosley, Kozlowski, Jeremy Lian (ARECA president) and others visited Nanyang Technological University (NTU) and Singapore Management University (SMU), raising the interest in students to consider general insurance after graduation.

"I am more encouraged than ever



CAS President, Roosevelt Mosley (center, left, in white shirt) and Asia Ambassador, Ron Kozlowski (center, right, in plaid shirt) meet with CAS members during a networking event in Singapore in October 2022.

about our opportunities to influence the practice of general insurance in Asia," Mosley said. "The reputation of CAS is strong in Asia, and we can build on that strength in partnership with local actuaries to lift the visibility of the value that general insurance actuaries bring."

Over Thanksgiving week, Chang and Kozlowski attended the ASM-CAS General Insurance Seminar where Chang gave a talk on actuaries in nontraditional roles and Kozlowski and Chor Leong Aw Yong facilitated a two-hour professionalism session at the ASM Annual Dinner. Chang, Kozlowski, Yong and Shze Yeong Ong visited Malaysia's University Malaya and Sunway University. Chang was encouraged by the

developing course content on general insurance but recognized the need for raising the profile of general insurance among college students in Southeast Asia.

"It's encouraging to see the growth in the number of general insurance practitioners in Malaysia as well as to spend time with the next generation of casualty actuaries," Chang said. "At the same time, we need to continue to improve awareness of the value of the CAS curriculum to our university partners abroad."

Chang and Kozlowski followed up the Malaysia trip with a visit to Hanoi, meeting with the local regulators, insurance associations and the Hanoi

National Economic University. Chang and Kozlowski were met on the first night in Hanoi by a group of local students currently taking from the concepts underlying P&C ratemaking course. The enthusiasm of the local general insurance students was encouraging. Chang is interested in supporting other endeavors in Vietnam.

Based on these visits, both Mosley and Chang promised to be champions

of the CAS's opportunities in Southeast Asia. ●

Ronald Kozlowski, FCAS, is the lead consultant with RTK Actuarial & Professional Services in San Francisco. He is involved in numerous CAS international working groups and task forces as well as the Professionalism Education Working Group and helps plan continuing education events around the globe.

CAS and IAV Partner on Ratemaking Course for Vietnam's Developing GI Market

By RONALD KOZLOWSKI, FCAS

In the summer of 2021, Vo Duy Cuong and Luong Xuan Truong approached the CAS with an idea. Cuong, a general manager in risk management in the actuarial department of BaoMinh Insurance Corporation in Ho Chi Minh City, and Truong, an appointed actuary for Baoviet Life in Hanoi, wanted a pricing course for health insurance developed with the help of the CAS and Insurance Association of Vietnam (IAV).

Bob Conger, FCAS, and I thought it would be best to provide a course on general insurance ratemaking and then apply the concepts to health insurance. Our next step was to find an instructor. We contacted Peter Murdza, FCAS, a retired professor from the University of Hartford and South Korea's Soongsil University as well as author of *Casualty Study Manuals*. Mary Hosford, FCAS, the chief health actuary for the Commonwealth of Massachusetts Division of Insurance, was an obvious choice as a

subject matter expert.

Murdza's materials were readily available, so we began tweaking the course for our Vietnamese students to add Hosford's insights into health ratemaking and my considerations concerning business challenges. Murdza taught the virtual 12-session course, "Concepts Underlying Property-Casualty Ratemaking," which ran from June through October 2022 and covered materials from the CAS Exam 5, including introductions to ratemaking and reserving. Also contributing to this effort were Roberto Perez, FCAS, who taught one of the classes on predictive modeling, and some dedicated volunteers who translated the materials into Vietnamese.

Of the 84 students who started the class, about 46 students took an IAV Exam focusing on the materials. I encourage these students to continue to study and take the CAS Part 5 Exam. ●

The CAS in...



In November 2022 in Nairobi, CAS Board Member Yvonne Palm, FCAS, and Bryan Ware, FCAS, spoke at the Actuarial Society of Kenya's recent annual conference themed "Winning the Future." The CAS was a Bronze-level sponsor.



CAS Staff Actuary Brian Fannin joined Nicolás Vega, FCAS, in presenting a one-day predictive modeling workshop, which followed a conference hosted by the ACA, the Colombian Actuarial Association (Asociación Colombiana de Actuarios). The event took place in Bogotá, Colombia.



CAS Staff Actuary Brian Fannin and Jordan Ko recently presented at the General Insurance Research Organising committee conference in Liverpool, England. GIRO is a wing of the Institute and Faculty of Actuaries (IFoA) focused on General Insurance.

CAS Announces Recent Board Appointments

By KATE NISWANDER, CAS DIRECTOR OF MARKETING & COMMUNICATIONS

The Casualty Actuarial Society announces the appointment to the CAS Board of Directors of Brian Duperreault, ACAS, former CEO and executive chairman of American International Group, Inc. (AIG); Stephanie Espy, founder and CEO, MathSP, LLCM; and Alicia Speight, a senior insurance executive with WTW. The CAS also announces the appointment of a new vice president-professional education, Anthony Bustillo, FCAS, to the CAS Executive Council for 2022-2023. These appointments began on November 9, 2022, at the close of the CAS Annual Meeting.

Duperreault is the former CEO and executive chairman of AIG. Prior to joining AIG, he was chairman and CEO of Hamilton Insurance Group. He also served as president and CEO of Marsh & McLennan Companies and ACE Limited. Duperreault is a member of the boards of the Geneva Association, Saint Joseph's University, the Bermuda Institute of Ocean Sciences (BIOS) and the Partnership for New York City. Duperreault earned his bachelor's degree in mathematics from Saint Joseph's University in Philadelphia.

Espy is the founder and CEO of MathSP, a STEM academic coaching and test prep coaching company empowering the next generation of STEM leaders through a foundation and concept-based approach. She is also the executive director of STEM Gems (and author of the book with the same name), which focuses on exposing girls and young women to STEM careers and

inspiring women in STEM. Espy holds a bachelor's degree in chemical engineering from the Massachusetts Institute of Technology, a master's degree in chemical engineering from the University of California, Berkeley, and an MBA from Emory University.

Speight is an executive with more than 40 years of experience in brokerage, risk management and underwriting. She currently oversees WTW's operations in Florida and is responsible for driving growth across the company's core business segments in her market: risk and broking and health, wealth & career. Prior to this role, Speight held senior managerial roles at Crystal & Company, Gulf Insurance and Johnson & Higgins. In addition to her business role at WTW, Speight is heavily involved in all aspects of inclusion & diversity as a member of the company's North America I&D Council and has led the team in the DiveIn Festival for more than five years. She also sits on the Insurance Advisory Committee for the Boy Scouts of America (BSA) and on the Board of the South Florida Council BSA. Speight holds a bachelor's degree in quantitative analysis from St. John's University and an MBA from Pace University.

Bustillo is deputy chief risk officer at Safety National. He earned his CAS Fellowship in 2005 and has extensive volunteer experience, serving as chair for several CAS professional education working groups, including the Casualty Loss Reserve Seminar Joint Program Committee, the In Focus Seminar Planning Committee and the Microlearning



Brian Duperreault



Stephanie Espy



Alicia Speight



Anthony Bustillo

Working Group. Bustillo will replace current CAS vice president-professional education Amy Juknelis, FCAS.

In addition, the CAS Board reappointed the following incumbent vice presidents to the CAS Executive Council: Kendra Felisky, FCAS, vice president-international; Kimberly Guerriero, FCAS, vice president-marketing & communications; Mary Hosford, FCAS, vice president-administration; Jim Weiss, FCAS, CSPA, vice president-research & development; William Wilder, FCAS, vice president-admissions.

"These experienced individuals will provide important contributions to our work at the CAS," said Kathy Antonello. "Their knowledge across a variety of insurance, business and quantitative areas will bring critical insights to our future projects." ●

Volunteer Finds Creative Outlet Through Service

The Making Things Happen column features CAS members who serve the association in many capacities and enrich the volunteer experience for all.

For Rebecca Williams, ACAS, her CAS service started as a way of networking and interacting with other actuaries (an activity she still enjoys today), but she found volunteering met more than one need.

“Volunteering is one way to feed my need to be creative,” Williams said. “I love finding ways to be creative in anything I do.”

Williams is the volunteer chair for the Ratemaking, Product and Modeling Seminar Working Group (RPMSWG). She started her volunteer work in 2009 with the Committee on Professional Education (renamed Professional Education Working Group) and has continued as a member of that group ever since. She also served and held positions in other CAS groups, including Casualty Actuaries of the Southeast, VEE Administration Committee and the Member Advisory Panel.

Her current goal is to execute a successful RPM Seminar that is returning to an in-person (hybrid) experience in 2023. The seminar has been an all-virtual event since the pandemic hit in 2020.

“I am excited that for 2023, RPM will have a robust offering with both in-person and livestream options,” Williams said.

She is eager to incorporate the topic of wildfires as a focus in the 2023 RPM Seminar.

“We are working on highly engaging ways to dive deeper into the subject and encourage engagement from the audience,” Williams said.

Williams is proud of the working group for having survived three years of virtual RPM and the loss of much of the networking opportunities that the in-person experience offers.

“I’m a sole practitioner who looked forward to in-person interactions to grow my network,” Williams said.

Williams has a list of favorites that come to mind when she thinks about the CAS. Her favorite meeting: the 2014 CAS Centennial and Annual Meeting in New York City, where she got to sing in the CAS Centennial Choir. Favorite volunteer moment: playing the role of MC for “Actuarial Idol” at a Course on Professionalism. Favorite swag: *I Love CAS* socks.

“As a CAS member, I am inspired by a fabulous group of volunteers on the working group and awed by the support from CAS staff. This is true for both committees on which I serve.”

For members who want to move into volunteer leadership roles, she recommends engaging and contributing as a member.

“When you make contributions to the working group, your peers will rec-



Rebecca Williams with her children.

ognize this and invite you to step up and help lead,” Williams said.

In her full-time roles, Williams has worked for both the government (Texas Department of Insurance) and private insurance companies. She now works for the North Carolina Rate Bureau, where she likes interacting with a number of companies and other actuaries.

Fun Fact: In 2023, Williams’ favorite silly holiday, Pi Day, overlaps with the RPM Seminar on March 14.

“I taught my kids a Pi song, purchased Pi t-shirts for the family, and even have a Pi magnet on the back of my car. Now I’m helping to find ways we can incorporate the infinite number (3.14159...) into the seminar,” Williams said. ●

Planning Ahead: CAS Meetings and Seminars

By SARAH SAPP, CAS EDITORIAL/PRODUCTION MANAGER

While COVID-19 has been a major disruption to in-person continuing education (CE) across all professions, the CAS is poised to offer a full slate of in-person professional education programs, along with robust asynchronous online and live virtual offerings in 2023 and beyond.

The current environment continues to pose its challenges. Associations are rushing to return to in-person meetings, which is making it harder to secure locations because of the increased competition for meeting spaces. For that reason, the CAS is aggressively working to book locations and properties for 2024 and 2025 events after securing accommodations for the 2023 events. This will allow the organization to secure desirable locations and allow members and candidates to plan which events they want to attend further in advance.

“Pre-COVID, the CAS typically signed contracts for our largest events one and a half to two years in advance,” said Kathleen Dean, director of meeting services. “That timeframe helped us to better project attendance fluctuations and avoid being stuck with inflated room blocks and high meal function costs. Since the pandemic, we’ve been hesitant to sign contracts going out that far because of all the uncertainty surrounding business travel. If we assume wrong and have a contract signed, we face the risk of massive attrition and cancellation penalties from a hotel.”

While the CAS has held four large in-person events since the pandemic began, the organization had two other

events planned as in-person that had to pivot to virtual: the 2022 RPM and 2022 Reinsurance Seminars. From that experience, it’s clear that the more contracts that are signed further in advance for upcoming events, the greater the financial risk should the business travel environment change.

The return to in-person events started with the 2021 Annual Meeting in San Diego, when the environment was still uncertain and tentative. The CAS received mixed reactions from the Employer Advisory Council on whether their organizations would support business travel for their employees, not to mention whether employees were willing to travel. Despite the ongoing concerns with COVID-19 and employer-paid travel, approximately 715 attendees participated in the meeting.

“Typically, we have a few cities targeted for a specific event,” Dean said. “For the 2021 Annual Meeting, we instead reached out to our various national sales representatives from all the major hotel chains and made an unusual request. This time we asked them to look at any hotel properties in the continental U.S., but we gave a strict list of conditions that would have to be met to enable us to truly partner with the hotel and share the financial risk. Dean said the two most risk-averse requirements requested were 50% guestroom attrition and 50% of the typical food and beverage minimum.

Attrition rate refers to the percentage of rooms that must be filled to avoid paying a penalty; typical guestroom attrition is 80%. Having a hotel offer 50%

attrition means that if the organization held the program as planned/contracted and the CAS only had half the number of registrants expected, the CAS would not incur any attrition penalties. A food and beverage (F&B) minimum is the amount a group is required to spend on food and beverage to use a space. For an event the size of the Annual Meeting, a \$350,000 F&B minimum is normal, but the 2021 Annual Meeting hotel partner offered half of that, or \$175,000.

“This meant that if we only brought in half the people to use hotel rooms, and thus only ordered half the amount of food we planned to at the time of contract, we would not owe the hotel a penalty.” Dean said, “These gracious contractual terms gave us the breathing room we needed to feel comfortable during so much uncertainty.”

The CAS began offering in-person and online (hybrid) learning at all major events prior to COVID. At these events the first full day of education in one or two designated meeting rooms on-site is livestreamed to a virtual audience. The virtual registrants have a choice of two sessions and are encouraged to submit questions to the speakers in real time. Their registration fee is less and comes with fewer options but does offer quality, interactive continuing education. Conversely, the in-person registrants pay a higher registration fee, which comes with more options of sessions (typically six to eight sessions instead of just two), in addition to more opportunities to connect, network and interact.

“I find that it’s hardest to recreate the networking component of in-person

events — the casual conversations while waiting for a session to begin, or serendipitous meetings in the hallways that lead to quality contacts,” Dean said. “We strive to improve the interactive components of our virtual offerings — some events lend more to networking than others. We also had to invest a great deal of time ahead of the events preparing speakers and attendees on the technology. This added significantly to the staff and volunteer labor needed to put on these virtual events.”

Despite the challenges of virtual events, many benefits surfaced quickly at the onset of the pandemic. “We avoided cancelling upcoming events and issuing refunds because we were able to offer an option to members stuck at home and looking for ways to fill time,” Dean said. “We had education

ready and found ourselves with a captive and appreciative audience.”

The meetings services team also realized that there was pent-up demand for more virtual CE in addition to webinars, where there would be live audience interaction. Some members who could not attend in-person events were able to attend events virtually, so it opened CAS CE to another set of members.

CAS Professional Education Manager Nora Potter had piloted a virtual seminar in October 2019 and the CAS had an existing relationship with an online education vendor, which gave us an advantage. “We were able to get a jump on virtual education faster than most,” said Dean. “Because of Nora’s piloting the event pre-pandemic, while other organizations were starting from scratch to find a vendor and learn a platform,

we were able to put our resources into informing our stakeholders and training staff to run the virtual events and then training speakers on the platform,” she said. “We have now streamlined the process for our speakers; everyone is overcoming the learning curve to using new technology.”

With rich experience in offering multiple platforms for CE, the CAS stands ready to serve its members in any learning environment.

“Like our members trying to account for future events, we don’t have the ability to see what the future of CAS CE events will look like,” she said. “However, we will continue to monitor the environment, track our trends, offer a mix of education delivery methods and remain nimble in case more pivots are in our future.” ●

2023 CAS Elections Kick-Off: Call for Nominations

Submit your nominations, including self-nominations, to aid the Nominating Committee in preparing the 2023 slate of candidates for CAS President-Elect and Board Directors who will be voted on by the Voting Members in August. If your nominee is selected to be included on the ballot as a candidate for president-elect and directors, you will receive a \$100 Amazon gift card. Up to 10 gift cards will be awarded. If multiple individuals submit the same candidate, the winner of the gift card will be the first individual who submitted the name. Self-nominations are included in the referral bonus program.

Submit your nominations by **February 24, 2023**, by completing the simple online form or by emailing Laura Stout at lstout@casact.org. You are welcome to

include a few words about why you are nominating yourself or your colleague; the additional information is optional.

In addition to the call for nominations, Fellows may be included on the ballot for board and president-elect candidates by the submission of a petition form and disclosure statement. **Petitions are due by February 24, 2023.**

The petition for the Board of Directors must be signed by 63 Voting Members (or more, representing at least 1% of the Fellows). The petition for President-Elect must be signed by 126 Voting Members (or more, representing at least 2% of the Fellows). Upon receipt of the petition form and completed disclosure statement, the candidate will be contacted by the Nominating Committee to confirm their interest and then included on the 2022 CAS election ballot.

Additional Information

The following documents are provided for members who are considering nominations or petitioning to be placed on the ballot:

- [Nominating Guidelines](#)
- [President-Elect Position Description](#)
- [Board of Directors Position Description](#)
- [Board of Directors Attendance Policy](#)
- [Conflict of Interest Policy and Statement](#)
- [Nominating Petition for Board Candidates](#)
- [2022 CAS Election Procedures](#)

Thank you for your participation in the 2023 CAS election process. ●

CAS Named Diversity and Inclusion Industry Champion of the Year by Gamma Iota Sigma

In recognition of outstanding leadership and efforts within the insurance industry developing solutions for authenticity, inclusion and diversity, the CAS has been honored with the 2022 Diversity and Inclusion Industry Champion of the Year award from [Gamma Iota Sigma \(GIS\)](#). GIS is the industry’s premier collegiate talent pipeline, serving over 5,000 students and 25,000 alumni from a growing network of over 100 colleges and universities throughout North America.

“We are so grateful for everything the Casualty Actuarial Society does to support diversity and inclusion across the actuarial profession and the broader insurance industry,” said Gamma Iota Sigma Executive Director Grace Grant. “CAS is a valuable partner to GIS members and alumni, and its continued support is critical in fulfilling our mission to promote and sustain student interest in the industry and ultimately grow and diversify the insurance industry’s talent pipeline.”

The award recognizes a demonstrated commitment to advancing the future of insurance through the support

of a diverse talent pipeline. The inaugural GIS Diversity and Inclusion Industry Champion of the Year award was presented in 2021 to global data analytics provider Verisk.

The CAS serves as both a Sustaining Partner of GIS and a longstanding GIS Annual Conference Platinum Sponsor. The CAS also supports GammaSAID (Solutions for Authenticity, Inclusion, and Diversity), GIS’s student-centered DE&I strategy to drive long-term insurance industry talent pool growth, diversification and accessibility.

The CAS has made a significant commitment to DE&I over the past year, with the organization’s board of directors adopting its current strategic approach to DE&I in February 2022. This [plan](#) states that the CAS is committed to fostering a diverse and inclusive actuarial community in which all members are encouraged to contribute to the advancement of the profession. The plan outlines eight tactics that support the organizations’s DE&I efforts.

“The CAS is proud to be recognized for our efforts over the past year in developing a more diverse and



inclusive actuarial talent pipeline,” said Victor Carter-Bey, CAS CEO. “We plan to continue our commitment with not just words but actions, as we implement concrete tactics to move the CAS and other insurance industry stakeholders forward to bridge DE&I gaps.”

CAS activities in 2022 that were recognized in consideration of the award included:

- Building awareness of the actuarial profession and insurance industry through [Be An Actuary Day events](#) for high school students
- Producing the [CAS Research Series on Race and Insurance Pricing](#) to help guide the insurance industry toward proactive, quantitative solutions to address potential racial bias in insurance pricing.
- Working with related stakeholders such as [American Indian Science and Engineering Society \(AISES\)](#), [Inroads](#), and [Association for Women in Mathematics \(AWM\)](#).
- Increasing financial accessibility of exams through programs with the Society of Actuaries including the [Diversity Exam Reimbursement Program](#) and the [Needs-Based Exam Reimbursement Program](#).

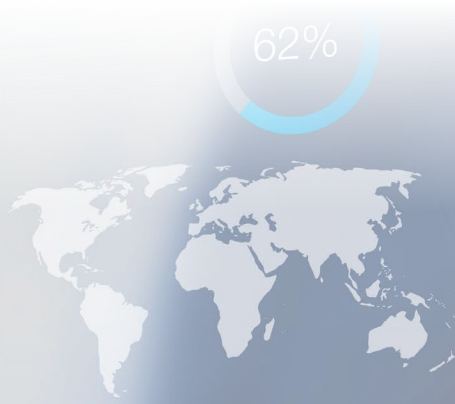
For more information about the CAS and its diversity efforts, visit casact.org/about/diversity-equity-inclusion. ●

Students from DePaul University at a Be An Actuary event that the CAS co-hosted. Kathy Olcese (far left holding a water bottle) was one of the event speakers.





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.

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.

2022 CAS ANNUAL MEETING





1. Pictured left to right, CIA Associate Georgina Montiel Santoya and new CAS Associates Ibrahim Sylla and Natasha Paz at the session "Hot Topics for International Actuaries."
2. New Fellow Kyle Gutowski, left, and new Associate Campbell Michele Wilks sport purple boas in recognition of "The Purple One," Prince, who was a native of Minneapolis.
3. CAS President Kathy Antonello, right, and Professor Pallav Kumar Baruah of India's Sri Sathya Sai Institute of Higher Learning. Dr. Baruah's school is one of four CAS University Award recipients in 2022.
4. The carousel at Nickelodeon Universe is located at the site of the Annual Meeting's Tuesday night event at The Mall of America in Minneapolis.
5. Someone is quite pleased with his swag. His favorite piece? The CAS beanie, of course!
6. New Associate Nicholas O'Shea, left, and Hannah Kramlik, ACAS, love actuarial science.
7. From left to right, outgoing CAS President Kathy Antonello, incoming CAS President Roosevelt Mosley, outgoing CAS Board Chair Jessica Leong and CAS President-Elect Frank Chang conduct a "Townhall on Actuaries and Technology."
8. Left to right, Maja Dos Santos, FCAS; Sandy Shyu Lowe, FCAS; and Madhuri Kumar mingle at the CAS Diversity Reception. Lowe is the leader of the Network of Actuarial Women and Allies (<https://www.nawaactuaries.org/>).
9. Laura Nees, ACAS, second from left, celebrates earning her Associateship with her family.

NEW FELLOWS ADMITTED OR RECOGNIZED IN NOVEMBER 2022



Row 1, left to right: *Emilie Dionne, Isabelle Guérard, Kwan Yuen Cheung, Congren Zhang, CAS President Katherine Antonello, Leong Qi Zheng, Chelsea Brooke Gelley, Nicholas Kunkle, Daniel Ryan Koldin.*
Row 2, left to right: *Zachary Stone Shiro, Jacy Shanen Petersen, Hervey KF Abotsi, Jake Edward Daniels, Ian Mackenzie, David Ryan Brooks, Nicole L. Esquivel, Victoria Ann Zeilor.*
Row 3, left to right: *Oliverio Hernandez, Joshua M. Pomerantz, Tyler Robert Riehle Wykoff, Kyle Robert Gutowski, Thomas Jackson Rowell, Yumeng Tang, Hayden H. Mierl, Benjamin Jay Landes.*



Row 1, left to right: *Kathryn Elizabeth Burke, Rafael Bergerman, Dylan Bernklau, Joshua M. Collier, CAS President Katherine Antonello, Jamie Alison Eversdyke, Shane Martin Randa, Marko Martinovic, Stephanie Uibel.*
Row 2, left to right: *Andrew Tang, Linette Claire Davis, Allison Rae Hettinger, Brittany Claire Marie Baudier, Jeffrey James Greco, Michelle Anne Zimmerman, Andrew DiFronzo Jr., Robert Daniel Jurgens.*
Row 3, left to right: *Michael Gerard Musary Jr., Katherine Jean Buehler, Vanessa (Wenzheng) Zhang, Kyla Thurneer, Justine Roy, William Morissette, Raphaëlle Freniere, Jasmine Lemay-Dagenais, Joseph Kyujoon Lee.*

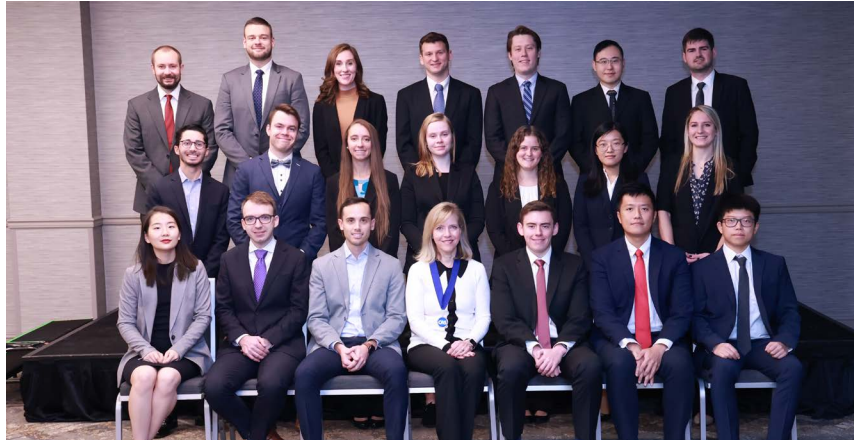


Row 1, left to right: Patricia Xu, Lisha Qin, Shruti Saxena, Jacques Zang, **CAS President Katherine Antonello**, Geoffrey Malott, Akshay Mandalia, Trenton James Lipka, Spencer Miller.
Row 2, left to right: Eric Hang, Rahim Rauji, Yipeng Hong, Jing Wei Goh, Jasmine Jia Wen Yeo, Erin Elizabeth Fogarty, Anthony Stachowski, Frank Zhang.
Row 3, left to right: Dalton Streff, Simon Chowanec, Cameron Timothy Custis, Taylor S. Vaughn, Marc-Antoine Beaulieu Gagne, Christopher Michael Schneider, Alexander L. Buzzell, Ian Long, Jacob B. Lain.



Row 1, left to right: Sabina Preda, Nicholas Matthew Zielinski, Chelsea Yost, James Franklin Greb, **CAS President Katherine Antonello**, Satomi Miyanaga, Aaron Sass, Ashley Ann Reilly, Ryan Alexander Tompkins.
Row 2, left to right: Jessica Crumrine, Fangyuan Wu, Rui Tang, Farnaz Ziaee, Melissa N. Huenefeldt, Paul Nicolas Nelson, Anna Breigenzer.
Row 3, left to right: Coty William Hallay, Boden Pradel, Samuel Lamar Bushong, Dmitriy Korogodskiy, Alexander Donald Schulz, Courtney Gerard Sims, Alex David Denfeld, Jared John Brown.

NEW FELLOWS ADMITTED OR RECOGNIZED IN NOVEMBER 2022



Row 1, left to right: Anqi Yang, Tyler David Downs, Nicholas D’Orazio, **CAS President Katherine Antonello**, Jackson Hunt, Ka Tsun Chan, Yujia Zhang.

Row 2, left to right: Anthony J. Maley, Alexandre Carrier, Katelyn E. Evans, Yuliya Semibratova, Emily Ann Thoman, Yujia Gan, Krystal Angelic Smuda.

Row 3, left to right: Ryan Scott Ward, William Britt, Brigh N. Desjardins, James Riley, Alexander Loveland, Ting Hei Adrian Lai, Gabriel Dufresne.

New Fellows not shown: Safdar Abbas Ali, Brett Lyndon Appleyard, Etienne Beland, Jordan C. Bonner, Alyssa Rae Brehm, Emma Casehart, Tian Qiao Chen, Xiaoming Chen, Yingying Chen, Iris Ching, Albert B. Choi, Zhe Ren Choong, Cameron Luke Cooper, Ryan R. Diedrich, Connor Louis Dietrich, Joseph P. Drennan, Payton Ebelherr, Andrew J. Fang, Shuyuan Fang, Kahyee Fong, Robert P. Fox, Ryan Bradley Frank, Fengyu Gao, Long Gu, Amin Hashimi, Hanbing He, Sung Hong, Devin Tyler Jones, Karine Kaprielova, Ivan Mikhail Karavitchev, Chad D. Karczewski, Ghayoor Ali Kazim, Ee Kean Kew, Isha Khera, Ethan HyunWoo Kim, Jiho Kim, Nayoon Kim, Sean Kirwan, Bradford Lee, Cheuk Him Lee, Lei Lei, Qi Zheng Leong, Miao Rui Li, Chunli Liang, Eric Shawn Liddle, Jia Min Lim, Tao Lin, Li Liu, Sean Le Ming Loke, Xiang Luan, Sovanna Ly, Codey Jay Mack, Alexis Linn Martini, Alexander Eugene Matia, Paul McVittie, Brandon Leo Middlebrook, James W. Morse, Kelley Marie Murrone, Ngoc Phuong Hong Nghiem, Belinda Nguyen, Simone Nichols, Lawrence Paul Overway III, Donaldson Miles Peay, Max Nathaniel Peterson, John Xavier Potter, Austin James Rieger, Simon Rivard, Cameron Andrew Rose, Bastien Samson, Kun Shi, Brady William Skjfstad, Michael Joseph Sokol, Timothy Charles Specht, Logan Harris Stern, Jean-Francois St-Pierre, Kevin Ka Chun Suen, Brady Allen Swope, Junyi Tang, Pei Gim Tee, Chung-Han Tsai, Kathryn Lynn Vista, Ari Walfish, Matthew Walkowiak, Yiming Wang, Benjamin Nathan Welch, Patrick Wells, Brady Wallace Wilson, Sebastian Mathew Wong Chi Jin, Yuping Wu, Jialing (Jeri) Xu, Jacob G. Yohn, Xuan You, Brendan James Zehnder, Edward Xiang Zeng, Katherine Zeske, Jin Zhang, Xiaoran Zhang, Ronglin Zhao, Yuhan Zhao.

NEW ASSOCIATES ADMITTED OR RECOGNIZED IN NOVEMBER 2022



Row 1, left to right: Ross Denkin, Yao Ge, Dung Thi Thuy Bui, Yijing Wang, **CAS President Katherine Antonello**, Amy Lynn Schroeder, Nicholas Fragale, Danny Tshitumbu, Matthew McDermott.

Row 2, left to right: Ryne Yamada, Alvaro Ortiz, Steven Lock Son, Jessica R. Ackley, Jingfei Li, Brett Dobinski, Long Du.

Row 3, left to right: Cody John Laskowski, Jacob Alan Hendren, Matthew Cairo, Sarah Davidson, Zachary Anderson, Matthew William Bush, John Walter McGinn, Ryan J. Peyton.



Row 1, left to right: Martin Edward Marion, Jeffrey Shen, Danish Zulfiqar, Railya Mamedova, **CAS President Katherine Antonello**, David Joe, Thomas Dukes, Cody James Neverman, Kaya Robertshaw.

Row 2, left to right: Phillipa Kristin Mould, Kristin Cherney, Walter Scott Richards, Julian Moorehead, Lucy Zhang, Jonathan Wolff, Tristin Steven Guevara, Paige Nicholas.

Row 3, left to right: Ying Zhang, Sara Wortmann, Seong Won Jang, Michael O'Connor, Kyle Christensen, John William Wiemer, Laura L. Nees, Amanda Conklin.

NEW ASSOCIATES ADMITTED OR RECOGNIZED IN NOVEMBER 2022



Row 1, left to right: Campbell Michelle Wilks, Jiayi Huang, Xiaoling Zhou, Anqi Yang, **CAS President Katherine Antonello**, Stacy Lynn Blatz, Carlina Rae Frombach, Amanda McCormick-Cathey, Matthew Wieckhorst.
Row 2, left to right: Kyle Austin Walker, Peyton Scot Biernat, Kyle Slonka, Ed Sudol, Dillon Franklin Bok, Erica Knoll, Alice Bergeron.
Row 3, left to right: Jhon E. Osorno, David Arthur Kornack, Daniel Christopher Wetherell, Alton Lee Schneider, Nicholas J. Palmer, Lawrence I. Portuese, Jin Myeong Lee, Nicholas O'Shea.



Row 1, left to right: Gabrielle Dube, Justine Power, Christopher Filips, Eric Belshoff, **CAS President Katherine Antonello**, Khoa Dang Truong, Anass Lechgar, Lydia Daigle, Richard Harris Safran.
Row 2, left to right: Noah H. Daniels, Dominika Magdalena Kaszuba, Riddhi Kumar, Jaime Osleeb, Kelsi Olnor, Ashley Morgan Kerr, Trevor Herzig, Savannah Streeter, Jennifer Golden.
Row 3, left to right: Jason Louis Verna, Tara Russo, Peter Abbate, Katherine Marie Reister, William Raymond Beety, Ian Long, Keith Quigley, Brian Andersen.



Row 1, left to right: Kara Lynne Hashemi, Anders Thor Beyer, Geoffrey Thomas Cooper, Jacob Yuan, **CAS President Katherine Antonello**, Nicholas Scott Goers, Kayleigh Donnelly, Taylor Van Laar, Darryl R. Sorenson.

Row 2, left to right: Natasha Paz, Maria Morosan, Carissa Sue Varick, Xiangkun Kong, Kenneth Louis Zesso-Hoernis, Sean Kim, Fahim Hussan, Xinyi Dong.

Row 3, left to right: Yi-Ching Liu, Vanessa (Wenzheng) Zhang, Samuel Rioux, Maxime Poulin-Bellisle, Caleb Hancock, Ryon Tartell, Kenny A. Dobberpuhl, Matthew J. Kulczak, Ibrahim Sylla.

New Associates not shown: Joshua S. Abramson, Satchal Moaaz Aminuddin, Thomas Anderson, Garrett James Andrews, Marie-Christine Beliveau, Melissa Dawn Betthausen, Veneta Bojilova, Aiden Busby-Mott, Rachel Lynn Bushman, Jose Joaquin Camara, Lukas Cechura, Wilson Chi Toeh Chan, Tiffany Chang, Benjamin Chen, Carrie Chen, Alice Chi, Cheryl Huey Wynn Chin, Calvin Chu, Lucas David Cronin, Marie-Pier Demers, Jessica Rose Dilley, Brian M. Dudding, Matthew D. Edson, Nicholas Wade Egli, Stephen Sullivan Esposito, Tiffany Wai Sing Fan, Chandler Fischbeck, Zean Gao, Samuel Joseph Garvey, Rochel Pruss Glazer, Joseph Goodman, Henry Guo, Laura Lynn Haas, Zhe Han, Yajie He, Andrew Holly, Nathan Hu, Yiyang Huang, Daniel Michael Jenzano, Jheng Lin Jhan, Ryan Kehlet, Anthony Kestel, Aidan Sungho Kim, Eun Mi Kim, Daniel James Kosten, Matthew Kovar, Samuel N. Krinsky, Anthony Joseph Kulowski, Ivan Y. Lai, Antoine Langevin, Alex Michael Lawrence, Zhijun Li, Raymond Lin, Yingrui Lu, Qipeng Luo, Mariia Makarishcheva, Rishika Malhotra-Dhir, Alexander James Mancinelli, Taylor Williams Marrs, Caroline Martin, Dresdina Mavindidze, Matthew McDonough, Daniel Scott McGovern, Stephen McInturff, Benjamin Merrill, David Alan Miller, Stephanie Mohorcic, Hyun K. Moon, Stefanie Mueller, Martin Murphy, Aliya Nathoo, Jiwei Ni, Mark Palij, Frank Pan, Ilmok Park, Sumil Patel, Francis Proulx, Robert Rhodes, Kyerna Christine Richards, Connor James Rogers, Kenda Sanderson, Gentry Scott Schneider, Matthew J. Sealy, Nicholas Harvey Senior, Serena Shah, Matthew R. Shefcik, Justin Tyler Shelton, Bradley Robert Simon, Andrew Smith, Logan Smith, Tyler Steele, Melanie Kay Steen, Christian Leonard John Strilchuk, Robert Swoverland, Gege Tian, Jiarui Tian, Cody Leigh Tribble, Chun Wai Tsang, Yexin Tu, Matthew Viox, CFA, Hao Wang, Jing Ya Wang, Victor Wen Qi Wang, Ying Wang, Daniel John Wasson, Yotsaphon Wattanawangkraisri, Miles Westrich, Yuting Yang, Daniel Yip, Henry Yu, Julie Zhang, Yoel Zuman.

MITIGATION THAT MATTERS: *A Wildfire Case Study*

By DALE PORFILIO

The CAS strives for its funded research to be timely and applicable to its members' work. They struck gold when the CAS Research Paper "[Catastrophe Models for Wildfire Mitigation: Quantifying Credits and Benefits to Homeowners and Communities](#)" was published on October 25, 2022.

The California Department of Insurance issued a new regulation, effective October 14, 2022, requiring all insurance companies to file homeowners rating factors for wildfire mitigation credits by April 2023. The new California Code of Regulations 2644.9 mandates rating factors for both individual property-level and community-level mitigation. While the wildfire risk is increasing statewide, many details must be navigated for every California homeowners insurance writer to develop actuarially sound wildfire mitigation credits and incorporate them into an actuarially sound rating plan for overall rate adequacy.

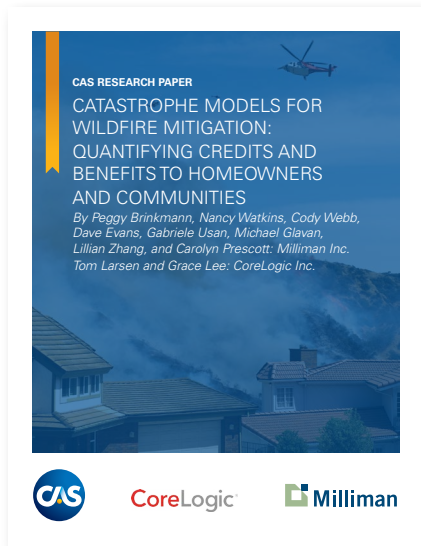
The CAS paper was a result of collaborative research between actuaries at

Milliman Inc. and catastrophe modelers at CoreLogic Inc., leveraging the strength of both organizations. At the 2022 CAS Annual Meeting, Peggy Brinkmann, FCAS, CSPA, of Milliman and Thomas Larsen of CoreLogic summarized the existential crisis that is California wildfire risk and discussed the ability of catastrophe models to evaluate and quantify the risk. They also gave their analyses to estimate wildfire mitigation credits for a wide range of scenarios.

Brinkmann opened the session with an overview of wildfire risk in the U.S., but most poignantly in California. Figure 1 captures the elevated economic cost of U.S. wildfires from 2017-2021, with over 70% of these losses occurring in California alone. This has contributed to insurance availability and affordability challenges for California homeowners. Private insurers have filed for rate increases and tightened their underwriting standards, while the California FAIR Plan policy count started growing rapidly in 2019.

The Insurance Institute for Business and Home Safety (IBHS) created the Wildfire Prepared Home program to pro-





This and other CAS Research Papers can be found on the CAS website under the tab Publications and Research.

Figure 1. Historical wildfire costs in the United States (2017–2021)

State	Wildfire Cost (Billions)	Percentage of U.S. Total	Annual Cost per Capita (Dollars)	Annual Cost per Square Km (Dollars)
California	\$87.29	73%	\$53	\$4,902
Colorado	\$5.27	4%	\$22	\$465
Oregon	\$4.97	4%	\$28	\$464
Montana	\$2.91	2%	\$65	\$182
Texas	\$2.85	2%	\$2	\$97
Idaho	\$2.85	2%	\$39	\$313
Washington	\$2.51	2%	\$8	\$324
Alaska	\$2.03	2%	\$66	\$28
Tennessee	\$1.64	1%	\$6	\$357
New Mexico	\$1.42	1%	\$16	\$108
Utah	\$1.25	1%	\$9	\$135
Arizona	\$1.17	1%	\$4	\$95
Nevada	\$1.11	1%	\$9	\$92
Wyoming	\$0.98	1%	\$40	\$92
Alabama	\$0.66	1%	\$3	\$116
Oklahoma	\$0.31	0%	\$2	\$41
Florida	\$0.28	0%	\$0	\$39
Georgia	\$0.27	0%	\$1	\$41
South Dakota	\$0.10	0%	\$3	\$11
Minnesota	\$0.09	0%	\$0	\$10
North Carolina	\$0.08	0%	\$0	\$14
Nebraska	\$0.05	0%	\$1	\$6
Mississippi	\$0.04	0%	\$0	\$7
North Dakota	\$0.01	0%	\$0	\$2
United States	\$120.13	100%	\$9	\$21

Source: NCEI (2022).

vide standards for how to reduce the fire risk of individual homes. Their standards contain two key components:

- defensible space — reducing the fire risk in zones around the home.
- home hardening — reducing the fire risk of the home (e.g., roofs, siding, windows).

IBHS has created comparable community mitigation standards, as have the National Fire Protection Association (NFPA) through its Firewise USA program and the Federal Emergency Management Agency (FEMA) through its Shelter-in-Place recommendations.

This new [Milliman and CoreLogic paper](#) includes case studies of individual home and community mitigation credits. They outline the process and the math for an illustrative book of business in the California communities of Orinda and Moraga using generalized linear

models applied to the output from CoreLogic’s RQE Wildland Fire model. Their first case study estimated individual home wildfire mitigation credits. They intensely tested myriad combinations of roofing and zone clearance options around the home. Key findings include:

- Roof replacements provide the greatest mitigation benefit, but because they are the most expensive method, they are the least frequently used.
- If a roof cannot be replaced, maintaining clearance zones is the next most impactful action.
- Clearing an area of 30-100 feet from the home of combustible material creates the most effective buffer zone, followed by a zone zero to five feet adjacent to the home.

The paper includes extensive tables of percentage and dollar credits for dif-

ferent combinations of clearance and roof fire classes, which should help actuaries in preparing their own filings.

Their second case study estimated community mitigation credits. These are more complex because homeowners insurance rates must be property-specific, and yet individual homeowners cannot control everything about how a community may choose to mitigate wildfire risk for all its citizens. Milliman and CoreLogic modeled community credits in combination with individual credits to capture this complexity. The paper includes extensive tables of percentage and dollar credits refining the individual credit based on whether they reside in a low-, medium- or high-risk community.

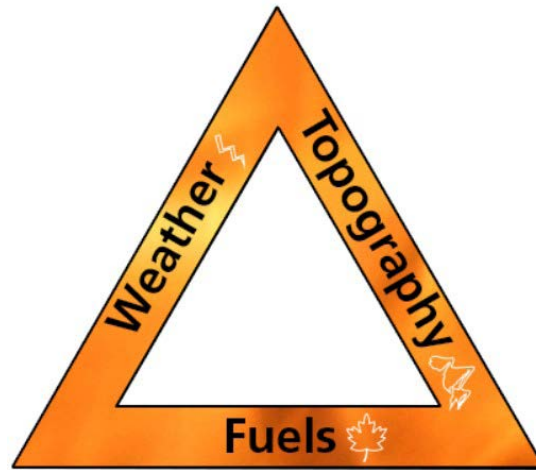
Their third case study compares the impacts of individual and community-level mitigation on individual homeowner risks. As expected, the model indicates that all mitigation measures reduce the individual risk, but individual home mitigation — which individual homeowners control — can have a bigger impact than any community mitigation alone.

Brinkmann closed with a quick summary of some implementation challenges for actuaries and California regulators:

- needing to start with adequate rates.
- obtaining data on property-level mitigations.
- acquiring current data on defensible space.
- getting data on community-level mitigation and translating into model inputs.
- avoiding overlap with territory and other rating plans.

All of the items on this list are essential to have actuarially sound prices

Figure 2. The fire behavior triangle's three legs are fuels, weather and topography.



Source: [National Park Service Wildland Fire Learning In Depth series.](#)

that balance affordability and availability.

Larsen's presentation focused on the complexities of wildfire science and how CoreLogic models the risk. The breadth of his content provided new insights for both veterans and novices to wildfire risk. For example, he opened with a recap of the first day of the Camp Fire in 2018, which destroyed the town of Paradise, California. The common element in recent fires is that most damage to property and human life happens in the first eight hours after a wildfire starts, even though it may take many more days for the fire to be fully suppressed.

When it comes to California wildfires, climate risk is causing the future to be far more severe than the past. Fuel (i.e., unburnt vegetation) is increasing every year in large part because fighting forest fires became standard practice after World War II. Summers are getting longer and hotter. Housing growth in Wildland Urban Interface (WUI) continues unabated, including 33% growth in California in the last 20 years. New for-

As expected, the model indicates all mitigation measures reduce the individual risk, but individual home mitigation — which individual homeowners control — can have a bigger impact than any community mitigation alone.

When it comes to modeling the physics of a wildfire, the range of possible outcomes is well beyond the historical event set from which modelers can build.

estry management mitigation programs are being introduced. In total, planning requires something beyond experience rating.

The key elements to a wildland fire are as follows (see Figure 2):

- weather — including temperature, humidity, wind speed and direction.
- topography — shape of the land, elevation, slope and aspect.
- fuels — moisture level, chemical makeup and density (i.e., the degree of flammability).

The worst combination is high fuel around properties on slopes with high winds.

When it comes to modeling the physics of a wildfire, the range of possible outcomes is well beyond the historical event set from which modelers can build. Hurricanes have immensely large wind fields and cause a wide range of property damage —from total losses to minor exterior damage. Wildfires are far smaller in size and yet typically cause total losses of dwelling and contents. Further, many locations which today are at significant risk of wildfire have never experienced a prior event. Since 1990 hundreds of thousands of homes have been built in the California Wildland-Urban Interface (WUI), where formerly there were none.

To make this comparison between perils more tangible, Hurricane Andrew generated about two million claims across its full path in 1992. The Northridge earthquake affected about three million homes radiating out from its fault line in 1994. The Camp Fire in 2018

was one of the costliest in history, and it destroyed 18,804 structures before it was fully extinguished.

Larsen provided a brief overview of how CoreLogic modeled the three case studies from the joint paper. This included the different roofing type classes, additional secondary structure modifiers and perimeter clearance. He also covered key mitigation resources and visual examples of homes in need of further wildfire mitigation.

He closed by recapping three critical aspects of managing and mitigating wildfire risk:

- ignition — Related to human activity, so it can be reduced but never fully eliminated.
- fire spread to homes — Driven by fuels, which can be reduced, and wind which cannot be predicted or controlled.
- home destruction — Homes can be hardened to reduce the risk, but the risk cannot be eliminated so long as properties are built in the WUI.

The CAS Research Paper by Milliman and CoreLogic, as well as Brinkmann's and Larsen's presentations, are highly recommended for any actuary or regulator responsible for the pricing and underwriting California properties. Wildfire risk, homeowners and community risk mitigation and insurer risk transfer are intensely complex and will require much attention in the months and years ahead. ●

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

CAS 2022 Annual Meeting

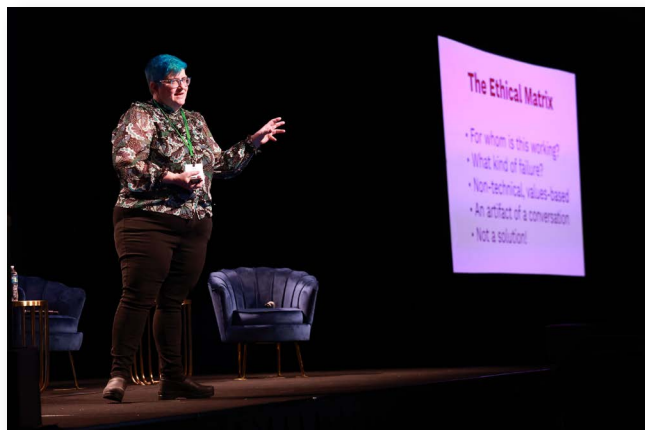
CAS APPROACH TO RACE AND INSURANCE PRICING MEETS WEAPONS OF MATH DESTRUCTION

By DALE PORFILIO, FCAS, MAAA, CHIEF INSURANCE OFFICER, INSURANCE INFORMATION INSTITUTE

Cathy O’Neil — author of the books *Weapons of Math Destruction* and *The Shame Machine*, as well as founder of O’Neil Risk Consulting & Algorithmic Auditing (ORCAA) — was the featured speaker at the CAS 2022 Annual Meeting. O’Neil has been working with the Department of Insurance, Securities and Banking in the District of Columbia as they consider concerns about fairness in insurance pricing and underwriting.

The CAS Board of Directors in December 2020 approved a recommended CAS Approach to Race and Insurance Pricing, in which the organization committed to provide members and candidates education on disparate impact and research to develop methodologies that identify, measure and mitigate any impacts. Disparate impact refers to unintentional discrimination that can be introduced into decision making through such factors as unconscious bias, protocols rooted in and tainted by historical biases and biases inadvertently introduced into algorithms that drive hiring, operational and other decisions. In March of 2022, the CAS published its [series of Research Papers](#) on Race and Insurance Pricing that aim to fulfill the CAS education and research goals articulated in 2020.

O’Neil opened her remarks by sharing that she has wanted to speak to the CAS for a very long time, given all the profession does with algorithms. She developed a framework called “explainable fairness” that she employs as her practice audits algorithms across many industries and disciplines, and



Cathy O’Neil

she believes it is applicable to actuarial practice within P&C insurance.

She defines an algorithm as the mathematical link between patterns from the past to predict the future. This requires data and one’s definition of success. In her book and auditing practice, she defines weapons of math destruction (WMDs) as meeting these criteria:

- Widespread — impacting a significant number of people
- Important — changing people’s lives in meaningful ways
- Mysterious and opaque — hard for those impacted to understand
- Destructive — adverse consequences to those impacted

She shared a few stories to help make her definition of WMDs more understandable. For example, Amazon devel-

oped a facial recognition algorithm that performed with 100% accuracy for the population on which it was calibrated — males with light skin tones. But when applied to other skins tones and gender, its accuracy dropped below 70% for darker females. Amazon’s algorithm had up to a 30% error rate, and the impacted populations would not know or understand why it was happening.

When it comes to an algorithm audit to determine if it is a WMD, the auditor needs to answer several open-ended questions:

- What is the exact context?
- How do we define fair?
- How do we set thresholds?

She explained that defining fairness must be situational to the context of how algorithms are used.

“Fairness is not a mathematical question, but rather a decision criterion,” O’Neil said. “Algorithms are not inherently racist — any racism comes entirely from how they are used.” She used the metaphor that we need monitors around algorithms like a pilot needs dials in their cockpit to safely fly complex airplanes.

When ORCAA is invited to conduct an algorithmic audit, she develops the two-by-two “ethical matrix.” The matrix helps to capture for whom this algorithm works or for whom it fails. It also captures what kind of failure, or what failure looks like. This process is values-based and nontechnical. The output is an artifact of conversations, and it does not conclude with a solution.

The ethical matrix captures all the stakeholders on the rows and the concerns on the columns. All stakeholders should be represented, and all concerns should be ranked. The auditor then populates and considers every cell in this exercise of practical ethics. Figure 1 is an example that O’Neil prepared based on a study about financial lending credit scores in the appendix of *Equality of Opportunity in Super-*

Fairness is not a mathematical question, but rather a decision criterion. Algorithms are not inherently racist — any racism comes entirely from how they are used.

vised Learning by Hardt et al.

Hardt et al. were studying the relationship between the financial results of a hypothetical lender and different racial fairness standards. They applied five different standards of racial fairness and then modeled financial results.

O’Neil’s matrix concisely captured the three key stakeholders on the rows:

- the lending company.
- White customers.
- Black customers.

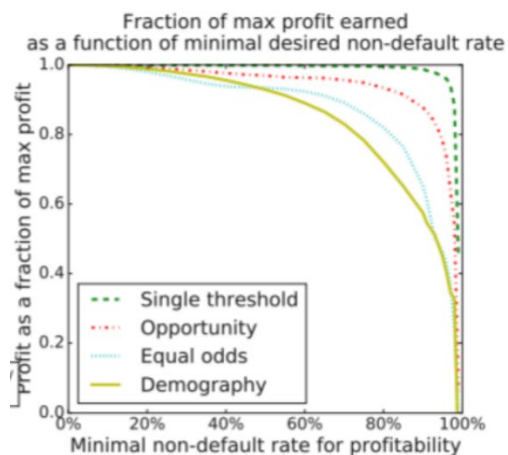
The columns then captured four key concerns in this study:

- company profitability.
- risk of false positives.
- risks of false negatives.
- credit report data quality.

By completing each cell in the matrix, the auditor can begin to form a perspective on the fairness of how the credit-lending algorithm is being applied to their customers.

As shown in Figure 2, profits are maximized when the lowest standard of fairness is applied and decreases as stronger standards of fairness are applied.

Figure 2



This outcome limits individual companies’ willingness to implement fairer algorithms in a competitive market. If society wants a fairness standard to be applied, it will need to be mandated and enforced consistently across the market to maintain a level playing field. O’Neil reinforced her message that fairness is a societal decision and not a mathematical

Figure 1. Ethical Matrix

	Profit	False +'s	False -'s	Data Quality
Company				
White Customers				
Black Customers				

construct in and of itself.

O'Neil then transitioned to a primer on ORCAA's new explainable fairness framework. Her hypothesis is that when people ask to have an algorithm explained to them, they are not asking for an explanation of the math, machine learning or AI. Rather, they want to understand how and why the outcomes are fair. ORCAA's audits focus on outcomes — how algorithms are used — and not how they are built.

"As an algorithmic auditor, I never care how an algorithm was built," O'Neil said. "I don't even care what the inputs of the algorithm were. I just care how it treats people."

She focused on explainable fairness from the lens of a regulator focused on whether a law or regulation has been implemented fairly. Within the insurance industry, Colorado is leading the way with new fairness legislation, while other states are considering similar legislation or regulation. Key definitions are left to rule makers, so the industry knows how to run their businesses in compliance. In every situa-

tion, someone must define the outcome(s) of interest and the thresholds for fairness, which requires negotiation between regulators and the industry to make this all workable.

O'Neil shared two illustrative use cases for explainable fairness: student lending and disability insurance. In all cases, we must define the outcomes of interest for the situation and then measure outcomes for various interested classes. The negotiation comes into play when deciding which factors are considered "legitimate" and what "significant" means. These are not math problems, but rather legal and ethical decisions to be made in collaboration.

She closed by emphasizing the importance of values, monitoring and negotiation in the fair use of algorithms. To return to her cockpit metaphor, explainable fairness for algorithms requires a dashboard with many dials and metrics. The dashboard must be custom built for the specific algorithm application to assess fairness. ●

CHIEF ACTUARIES ON DIVERSIFICATION AND MEMBER SUCCESS

By DALE PORFILIO

CAS membership has grown significantly for many years, including growth in the percentage of women, Black, Latino and Indigenous people. Despite this growth, however, the percentage of these groups remains well below the general population as well as other science, technology, engineering and math (STEM) professions.

The CAS Annual Meeting featured a roundtable of chief actuaries that discussed "Diversifying the Pipeline," one of the pillars in the [CAS Strategic Plan](#). CAS President Kathy Antonello, president and CEO of Employers Holdings, Inc., moderated the roundtable. Panelists included Bruce Gifford, FCAS, chief actuary-business insurance at Travelers; Donna Glenn, FCAS, chief actuary at NCCI; and David Cummings, chief actuary at USAA.

Antonello opened the roundtable with her definition of diversifying the actuarial pipeline: "Opening up and bringing

awareness to a diverse group of highly talented individuals across the globe — diverse universities, majors, degrees, gender, ethnicities, background and thought."

Why is this important? Travelers, NCCI and USAA — like the rest of the insurance industry — already insure a diverse portfolio of customers and are seeking to grow in underserved markets. Success in these markets requires having employees who can understand the perspectives of these customers and prospects.

All three panelists shared how their companies are working to recruit more diverse employees and are aligning with the CAS goal to diversify its membership. Common approaches include expansion of actuarial recruiting to a wider range of colleges and greater consideration of second career candidates, as well as supporting educational awareness efforts in high schools and in their communities.

In 2018 [research co-commissioned](#) by the Casualty



Moderator and CAS President Kathy Antonello (left) leads the discussion for the “Chief Actuary Roundtable: A Discussion on Diversifying the Pipeline and Ensuring All Our Members Thrive.” Joining Antonello (left to right) are David Cummings, Donna Glenn and Bruce Gifford.

Actuarial Society, International Association of Black Actuaries, Society of Actuaries and The Actuarial Foundation helped define barriers facing groups currently underrepresented in the actuarial profession (e.g., Black/African American and Hispanic/Latino). Based on the data collected, the researchers identified five areas where certain demographics might encounter “barriers to entry” into the actuarial profession:

1. Awareness of the field
2. Consideration of actuarial science as a viable profession
3. Preference over other STEM professions
4. Intent to take and pass the exams
5. Employment and retention

Cummings emphasized the necessity to help any candidates overcome any doubt or fears they may have and help them see a path to success in their actuarial careers.

Equally as important as recruitment, the panelists discussed the necessity of initiatives for existing employees to ensure diversity throughout all levels of the organization. Gifford discussed the focus that Travelers places on DE&I, stating its initiatives related to recruiting, retaining and advancing talent. “You must have a culture of inclusion for your organization to be successful,” he said. “We seek diverse interview panels for all hiring and promotions, and we look for cultural *adds* in addition to cultural *fits*.”

Glenn shared her experiences of being the only woman in the room at too many points in her career. These experiences illustrate the importance of leaders deliberately spreading around the opportunity with stretch assignments, rotations and promotions because this opens the door for diverse

candidates to rise in our organizations. She encouraged new Associates and Fellows to think about what they want in their careers as they have long futures before them. She emphasized the importance of versatility of thought and empathy for others as part of a strong DE&I culture.

Cummings shared that USAA, which primarily serves the military, veterans and eligible family members, consistently hires veterans to ensure their employees understand the experiences of their customers. This mode of thinking can translate well to the DE&I conversation because the ultimate goal is the same: A workforce that resembles and therefore can relate to the customer base.

Cummings shared how his actuarial department has fostered candid workplace dialogue about DE&I since the murder of George Floyd. These conversations were essential to allow staff to share, listen and learn from each other’s life experiences and to come to a more common understanding.

As the panelists continually emphasized the importance of inclusion, Antonello asked Gifford to go deeper on how Travelers has created an inclusive culture. Many Travelers employees, including leadership, have gone through a conscious inclusion workshop, which explores biases and how to be more intentionally inclusive in day-to-day interactions. Gifford’s team also empowers passionate employees and encourages them to get involved in decision making as it relates to DE&I through a group called the Culturevators. This team develops recommendations for leadership that often lead to dedicated initiatives aimed at furthering DE&I across the company.

The panelists shared their insights on how the pandemic and transition to greater remote work have impacted DE&I efforts. On the positive side, their companies have recruited from a broader geographical diversity, which also brings more diversity of experiences to them. However, they are all still building “new muscles” for how to foster employee development for remote staff.

Dedicated mentoring programs, especially having diverse mentors assigned to diverse mentees, have proven helpful. Each panelist shared examples from their own careers and from within their own companies. They challenged new FCAS and ACAS members to volunteer for the CAS to find mentors outside their companies. Mentoring can work well for remote employees, but most organizations will have an insufficient number of mentors to provide this benefit to all employees.

After a robust discussion and Q&A session, Antonello asked each panelist to close with final words of wisdom for the audience. Glenn went first with, “Be an ally, be a mentor,

be you.” Cummings offered, “Lift where you stand,” stressing that we all have opportunities to help diversity, equity and inclusion to become more of a reality from wherever we stand. Gifford closed with, “Be vulnerable; become comfortable with being uncomfortable.” ●

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

Watch These AR Web Exclusives from the 2022 CAS Annual Meeting

Behind the Scenes



From friends and families to presenters, award winners and panels, this video offers viewers a glimpse of what went on during the event.

Key Takeaways



Attendees tell what they've learned from the sessions.

The Actuarial Foundation and You



Executive Director Jason Leppin discusses the purpose of TAF. Learn how you can contribute.

PANEL AND AUDIENCE SHARE HOW TO BE THE ACTUARY OF THE FUTURE

By **ELIZABETH A. SMITH, AR MANAGING EDITOR**

It all began with Jessica Leong’s Presidential Address at the 2021 CAS Annual Meeting in San Diego (see [IMO, AR January/February 2022](#)). Leong, CEO of Octagram, challenged CAS members to pledge to be actuaries of the future, asking that they apply their analytical skills to solve business problems with quantifiable outcomes. She invited members to commit to this goal and be able to tell the stories of their impacts on business.

A year later, Leong came together with a panel of actuaries responsible for hiring and developing other actuaries. The panel told their own stories and learned from each other and the audience in “Take the Pledge — Be An Actuary of the Future.” Stemming from the CAS Strategic Plan, the pledge’s goal is for actuaries to commit to being analytic problem solvers.

The audience for this well-attended session, held November 7, 2022, at the CAS Annual Meeting, was a diverse group of new and established actuaries as well as several students participating in the CAS Annual Meeting through the Student Central Ambassador Program.

Panelists shared stories of persuasion or incremental changes having big impacts and of concentrated focus on understanding the business. Common amongst all the anecdotes were the values of listening, communication and knowledge.

Alejandra Nolibos, a senior director with WTW, has been a consultant for over 20 years, and worked on a wide variety of actuarial and business problems over that time. She concludes that “the profession can contribute much when we focus on solving business problems instead of ‘keeping score.’” She told the story of an appreciative underwriter complimenting an actuary by saying, “You see things I don’t see!”

Julia Stenberg, vice president and actuary with CNA Insurance Companies, stressed that actuaries should seek to understand business partner “pain points” rather than performing reviews without that feedback. Often issues can be resolved quickly with a small amount of actuarial resources, building trust and improving profitability. Stenberg wished that she had figured this out earlier in her career.

For moderator Wesley Griffiths, assistant vice president, actuarial & analytics for Travelers, actuaries tend to “stay in their lane too much.” Panelist Eric Kendig, also an assistant vice president, actuarial & analytics for Travelers, echoed his sentiment and articulated three ways actuaries can expand their knowledge and make greater use of their distinctive toolkits:

1. Have complete knowledge of how products go to market.
2. Explore using nontraditional data sources to help price business. Also, what can you learn about the reasons why a piece of business wasn’t written?
3. Determine if more modeling can be done. A pricing actuary can help to make the model better with their deep understanding of the business.

Leong advised that you should always frame your work based on the business value you are providing. For example, you aren’t doing a rate review, you’re ensuring that the premiums charged are adequate. Stenberg suggested being open to feedback and digging a little deeper to identify business partner concerns and to understand their resistance to your work. When an underwriter tells you that your indications are too high, ask questions to understand why — you may find a key assumption is not correct. Updating your review for new assumptions — and disclosing it — builds trust and influence.

Following the stories, the interactive part of the program



Session panelists for “Take the Pledge — Be an Actuary of the Future!” are (left to right) Eric Kendig, Alejandra Nolibos, Jessica Leong, Julia Stenberg and Wesley Griffiths.

began with the audience discussing and brainstorming ideas on how to be an actuary of the future. The following are some of the suggestions:

1. Determine when *good* is good enough. (Managers: Learn how to convey that to your employees.) In other words, let go of perfect.
2. “Understand other people’s ‘lanes,’” as opposed to “staying in your lane” (attributed to Akshay Mandalia, FCAS, of WTW and Griffiths).
3. Implement a pilot group to “test and learn” what works.
4. Be task-oriented or offer-focused when discussing the job with a client, i.e., “What am I offering?”
5. Use the 80/20 rule when there’s a time crunch problem — identify what needs to be done first to get the most impact.
6. Be transparent and open to peer review.
7. Evolve with the world. Be more adaptive.
8. Act as if you are interviewing. Know the business.

9. Develop holistic answers that give alternatives with different projections. Listen to what they are really asking you.
10. Propose at least two solutions to a problem.
11. Understand the “languages” of other businesses.
12. Automate as much as possible.

The session ended with the panel encouraging the audience to consider the ideas proposed that day and to pledge to be actuaries of the future.

Do you want to be the actuary of the future, and help advance the CAS and actuarial profession? If you do, then be proactive — read more and sign up for the pledge on the CAS website (<https://www.casact.org/article/take-pledge-becoming-actuary-future>). ●



BUILDING SKILLS FOR THE FUTURE

Reserves Working Group Releases Paper on Premium Audits

By JULIE LEDERER, MEMBER, CAS RESERVES WORKING GROUP

The Reserves Working Group recently conducted a small survey of five insurers on their premium audit practices. Shaun Cullinane, FCAS, member of the CAS Reserves Working Group, describes premium audits and summarizes the results of the survey in a paper titled “Forecasting Audit Premiums: The Role of the Actuary.” Cullinane’s paper will appear in the *E-Forum*.

Certain commercial property and casualty coverages, such as workers’ compensation, are subject to premium audits. During an audit, the insurer collects data on the number of insured exposures, such as the amount of payroll or sales, following the conclusion of the policy term. The insurer multiplies the audited exposure count by a contractually specified rate per exposure to derive the final premium for the policy term. The premium audit adjustment represents the difference between the final premium and the previously estimated premium on the policy. If the audit adjustment is positive, the policyholder typically receives a bill for additional payment due. If the adjustment is negative, the policyholder typically receives a rebate or credit. The survey results indicate that insurers often use actuaries in the process of forecasting aggregated audit premiums for future calendar

periods. When the economy is growing, one would expect audit premium adjustments to be positive when aggregated across an established book of commercial insurance policies. This is because businesses are more likely to be expanding than contracting in a growing economy, which increases their exposure base. Moreover, in times of certainty, the relationship between audit premium and estimated premium may be stable and therefore may require little effort to forecast. However, audit premiums can vary significantly from expectations in a rapidly changing economic environment, such as that surrounding the COVID-19 pandemic. Recent economic instability has increased the difficulty of making accurate forecasts and has made Cullinane’s paper especially timely.

U.S. statutory accounting principles require reporting entities to “estimate audit premiums, the amount generally referred to as earned but unbilled (EBUB) premium” and to “record the amounts as an adjustment to premium.” The EBUB estimate, typically representing a positive premium receivable asset, “may be determined using actuarially or statistically supported aggregate calculations using historical company unearned premium data, or per policy calculations.” Changes in the EBUB asset flow through the insurer’s revenue. Four of the five survey respondents rely on at least one actuary in the estimation of the

EBUB premium, and most respondents believe that EBUB premium is material to their company’s overall property and casualty revenue.

Cullinane walks through one method of forecasting premium audit adjustments and estimating the EBUB asset. He includes detailed exhibits that make the method easy for the reader to implement. Cullinane also illustrates the pitfalls of drawing conclusions from claim frequency without incorporating an accurate forecast of audited exposures; this can render inaccurate the frequency/severity method results, which can introduce errors into the loss reserving process.

Actuaries can, and should, play a significant role in estimating audit premiums. This is important for the preparation of accurate financial statements that include reasonable estimates of the EBUB asset and loss reserves. The actuarial literature is light on premium audit research, so Cullinane’s paper fills a meaningful gap. ●

Julie Lederer, FCAS, is a regulator with the Missouri Department of Commerce and Insurance. She reviews statements of actuarial opinion, actuarial reports and ORSA summary reports. She is a member of the NAIC’s Actuarial Opinion Working Group, and serves as director on the CAS Board.



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RANDOM SAMPLER By BRIAN Z. BROWN

What I've Learned and Wish I had Known

The following is the Address to New Fellows and Associates that was delivered at the CAS Annual Meeting in Minneapolis on November 7, 2022.

Congratulations new Fellows and Associates! Now is the time to celebrate and thank everyone who helped you achieve your ACAS or FCAS. It is a great accomplishment, and you should be proud of yourself.

As I look back on my 40+ year career, I want to share with you some important things that I have learned and that I wish I knew when I was a new CAS member.

First, prioritize keeping your life in balance now. I always thought that after a big project was over or I got one more client then I would get my life in balance. The truth is there will never be a right time, and you need to start now. You need to rank your priorities and align your time with your priorities. I love my family and we have a great relationship, but to be honest, I got lucky. I should have worked a little less and spent more time with them. Also, you need to take care of yourself and work on your hobbies. I love tennis and I play a lot of tennis now, but that is another thing that I should have done more of sooner.

Second, remember that there is never a bad time to say thank you. Sometimes you have to work late, and when that happens, remember to thank your family members for understanding. However, you need to listen. And if you

are working late most nights, you may need to readjust your work habits. A co-worker or staff member who helped you will also always appreciate hearing you say thank you.

Third, you need to take ownership of your career. Initially I thought that if I worked hard and did great work, I would automatically get promoted and advance in my career. While that may be true somewhere over the rainbow, the truth is you need to figure out where you want to be in three to five years and how to get there. Look at the traits of your managers and have honest conversations with your managers about a timeline and steps for promotion. Check to see if you are missing any skill sets. I took a lot of math and economic classes in college, so very few of my classes involved writing skills or public speaking skills. These are skills you will need to advance. If I was talking to a younger me, I would encourage myself to take a business writing class and public speaking courses online or at a local school.

Fourth, consider being active in the CAS. Doing so has helped me tremendously. The CAS gives you the opportunity to speak at many events, at official meetings like this, and also at the Regional Affiliate meetings. These are great opportunities to hone your presentation skills. At first it may seem overwhelming to speak in front of a crowd of actuaries on a technical subject. It is ok to be scared, and chances are the crowd won't notice how nervous you are and after 30 seconds you will get in a rhythm. I

remember the first CAS talk I gave at a CLRS meeting, a basic reserving session for nonactuaries. I figured maybe 20 people would attend my session. When I got on the stage, it looked like 100 people were in the audience. I thought my heart was going to jump out of my chest. After a minute, I was not nervous, and afterwards I was really glad I gave the talk.

I have developed a lot of skills and knowledge through the CAS and made many lifelong friends. I started out writing and grading exams, which I found a very worthwhile experience, and then went on to join other committees that planned various continuing education events. I think that you will find the vast majority of actuaries to be great people and willing to help you. I now have a network of contacts at various companies that I can use as a sounding board for new ideas or ask for advice. I believe that volunteering for the CAS and meeting actuaries from different companies is one of the best things I have done in my career.

Fifth, work on your soft skills like leadership and how to motivate staff. These skills become more important as you advance in your career, and those skills take time to develop. You need to consciously work on these skills and see what type of approaches work and don't work. Part of this you can learn from classes and books, but part is just practicing. Try small experiments and see if they work. For example, if you are having difficulty delegating work to a member on your team, try one small assignment and see how it goes. Many of us have difficulty delegating work. If you can't figure out what type of work you can delegate and who you can delegate it to, you might discover you need to per-



Author Brian Brown (far left) was a busy man at the CAS Annual Meeting, speaking at two sessions as well as delivering the address to new FCAS and ACAS. Here, Brown is pictured with his team of panelists from the 2022 Annual Meeting session “Winning the Communication Battle.” Left to right are Kathleen Odomirok, FCAS, principal at EY; Kevin Donnelly, FCAS, vice president of actuarial services, UnitedHealthcare; Carl Ashenbrenner, FCAS, principal and consulting actuary with Milliman; and Melissa Huenefeldt, FCAS, a consultant with Milliman.

form additional staff training. Thinking about these issues before they become problems can yield enormous long-term benefits.

Sixth, be cognizant of the hurdles that some of our members and potential members face and try to help others if they need help. I’m embarrassed to admit it, but it wasn’t until I was CAS President-Elect in 2017 that I became aware that only 1-2% of our members are Black or Hispanic, that only 35% of our new Fellows are female and that we didn’t have an organization to promote our LGBTQ members.

Everyone needs mentors. Be a mentor. I was lucky to have several mentors, but the first was perhaps the most important. See, I grew up on the south side of Chicago and neither one of my parents graduated high school. I decided to go to college because a number of my friends were going, but I had never even heard of actuarial science. I went to Illinois State University, which at the time did not have an actuarial science program. It now has a great program thanks to Dr. Kris [Dr. Krzysztof Ostaszewski]. A

friend of mine, Greg Girard, was an actuary at State Farm, and he encouraged me to become an actuary. He actually paid the fee for me to take the first exam. He may not have thought of that as mentoring, but it changed my life path. Thank you, Greg!

I can’t imagine how many talented Black and Hispanic high school students might not be actuaries because they simply will not find out about the career, or how many women and LGBTQ members might be held back in jobs because their management has conscious or unconscious bias. But it’s happening. This struck me with particular force a few years ago, when I attended a CAS diversity meeting in the morning and had a work meeting that same afternoon. The work meeting involved a mergers and acquisitions assignment with representatives from two insurance companies, two law firms, two investment banking firms and two actuarial firms. In total, probably 20 people were in the meeting, and they were all older white males. Believe it or not, I was one of the younger guys! Something is very wrong with that

picture, and we as a profession can do better than that. We can create a level playing field for all and be an inviting culture. Diverse groups make better decisions and will help insurance companies and the CAS thrive. I would encourage you all to try and make a new contact at this meeting with a person who is somehow different than you.

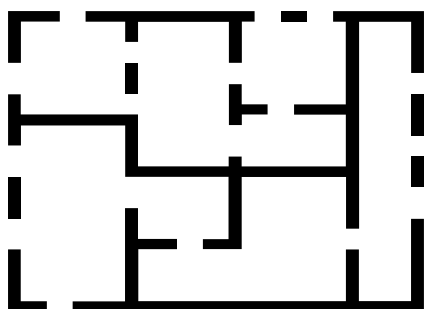
Remember, today is a day to celebrate and thank the people who helped you become an actuary. It is truly a great accomplishment. Congratulations again! ●

Brian Brown, FCAS, is a CAS past president. He is currently a consulting actuary with Milliman.

IT'S A PUZZLEMENT By JON EVANS

Cross Every Doorway Once

In the diagram of rooms and connecting doorways below, can you draw a path that crosses every doorway exactly once?



The Length of Days and Nights

In this puzzle, at location A when the date is halfway between the Spring Equinox and the Summer Solstice the day is about 14 hours long. About how long will the night be at A during the Summer Solstice (the Puzzle Date)? What about during the Winter Solstice?

Bob Conger submitted an extremely detailed solution treatise that can be viewed at *AR* online. The short version follows below.

Solutions were also sent in from John Berglund, Sean Porreca and David Zheng.

Results

- The earth's axis tilts 17.041 degrees towards the sun on the Puzzle Date (compared with 0 degrees towards the sun on the spring equinox and 23.436 degrees towards the sun on the summer solstice). Further discussion of this element later. (See

LENGTH OF DAY					
TIME OF YEAR					
Label →	Spring Equinox	Puzzle Date: Mid between Spring Equ'x & Summer Sol	Summer Solstice	Autumn Equinox	Winter Solstice
CONGER SOLUTION (HOURS:MINUTES of DAYLIGHT)					
Day in the Simple Solar System (no refraction & sun radius = earth radius)	2 x 6:00 hours	2 x 6.93 hours	2 x 7.32 hours	2 x 6:00 hours	2 x 4.68 hours
Effects of Refraction and Sun Radius, morning and eve	2 x 4.11 minutes	2 x 4.44 minutes	2 x 4.78 minutes	2 x 4.11 minutes	2x 4.75 minutes
Conger Estimates (hours:minutes)					
Length of Day	12:08	14:00	14:48	12:08	9:31
Length of Night	11:52	10:00	09:12	11:52	14:29
COMPARISON TO PUBLISHED LENGTH OF DAY FOR LOCATION 38.067 N 0.0 E					
Date/Time (UTC) in 2022 (Note 1)	Mar 20 3:33 pm	May 6 0:23 am	June 21 09:13 am	Sept 23 01:03 am	Dec 21 9:48 pm
Length of Day	12:09	13:56 (Note 2)	14:49	12:08	9:31
Published Data	Mar 20 - 12:08	May 5 - 13:55	Jun 20 - 14:49	Sept 22 - 12:09	Dec 21 - 9:31
For Length of Calendar Day	Mar 21 - 12:10	May 6 - 13:57 May 7 - 13:59 May 8 - 14:01	Jun 21 - 14:49	Sept 23 - 12:07	Dec 22 - 9:31

- Note 1: Published length of day is from www.timeanddate.com/sun. When the event occurs late in the evening or early in the morning (UTC time), I use the average of the two bracketing dates.
- Note 2: See later discussion (see *AR* Online) of my misestimation of the length of day on the Puzzle Day, which I suspect is driven by my approximation of a perfectly circular orbit around the sun, rather than the actual elliptical orbit.

AR Online for full solution.)

- Location A is positioned at latitude 38.067 degrees N or S, any longitude, a result that is directly dependent on the angle of the axis, above.



**Know the answer?
Send your solution to
ar@casact.org.**

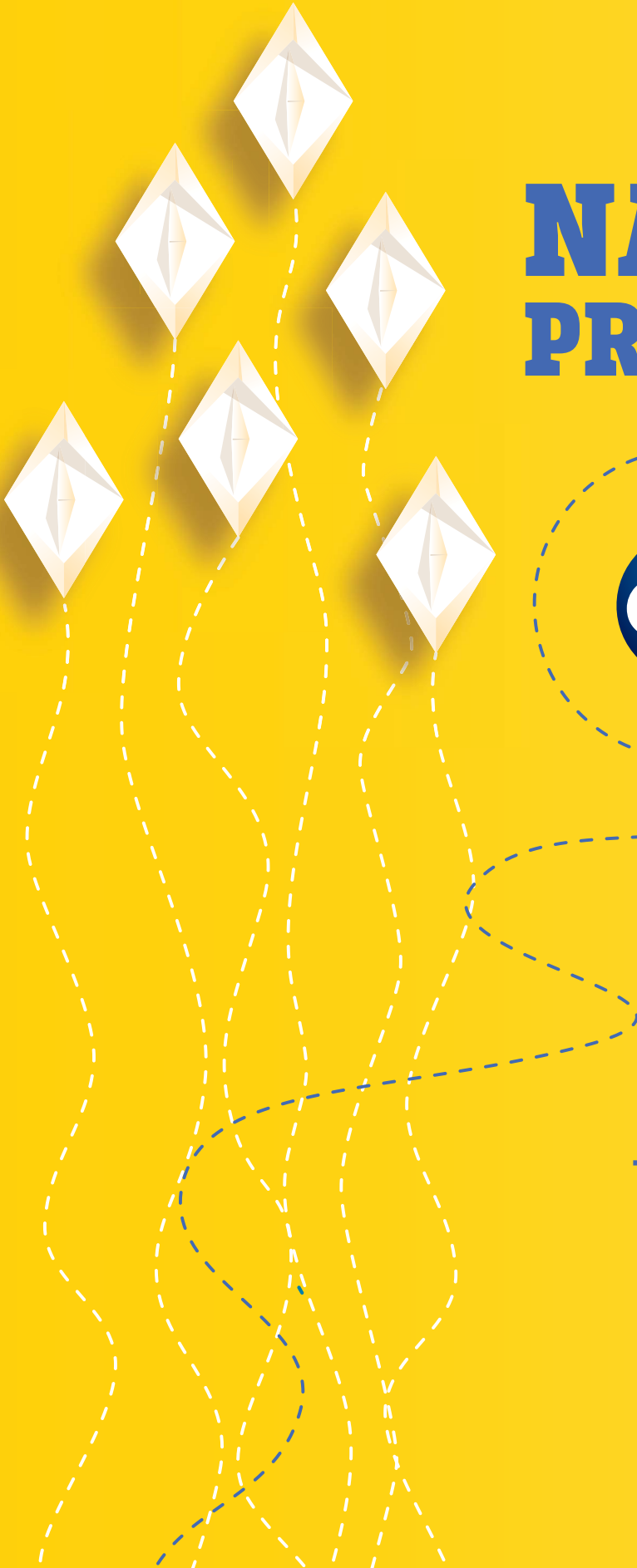
**NAVIGATE.
PREDICT. LEAD.**



**SPRING
MEETING**

May 7–10, 2023

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