

2018 Casualty Loss Reserve Seminar

September 5-7, 2018 • Anaheim Marriott • Anaheim, CA

The Casualty Loss Reserve Seminar (CLRS) provides a forum for presenting and discussing significant issues in loss reserving. The program includes a range of topics to interest professionals and students in a number of related disciplines. Moreover, the seminar is designed to meet the continuing education needs of actuaries and other professionals whose responsibilities include loss reserving. Attendees will have the opportunity to learn how to better be able to understand, evaluate and estimate loss reserves.

The seminar is recommended for risk and insurance managers, actuaries, actuarial students, accountants, underwriters, insurance regulators, and others who require an understanding of state-of-the-art developments, as well as traditional loss reserve methods and models. Generally, no advanced preparation, previous education, work experience or background knowledge are required, unless specifically stated within the session description.

The seminar uses a session rating with a scale ranging from 1 (basic) to 3 (advanced) to provide information on the session's technical nature. Sessions on advanced reserving topics, including emerging and regulatory issues, reinsurance and accounting, are designed for experienced loss reserving professionals.

Intermediate reserving topics are recommended for individuals already familiar with basic evaluation techniques who wish to increase their knowledge of loss reserve methods and models. Sessions on basic reserving topics are recommended for individuals with limited or no experience evaluating loss reserves. In addition, a wide range of special topics will interest the general audience at all levels of experience.

The seminar follows a group-live format and the sessions are generally made up of a panel of presenters, many using slides to augment the presentations. Illustrative examples are used throughout many of the presentations. Practical approaches to problems will be presented and discussion will be encouraged. Participants can expect to gain awareness and insight into difficult issues and are encouraged to share their own ideas.

Joint Program Committee for the Casualty Loss Reserve Seminar

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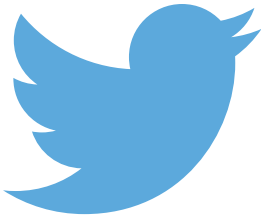
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What's happening at CLRS? We want to hear from you!
Tweet about the CLRS sessions and meeting events using the hashtag

#CLRS2018

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And Follow the Prompts to Sign Up!

Social Media

The CAS is on Facebook, Twitter and LinkedIn! Stay informed by following CAS on Facebook and Twitter for exclusive updates on CAS activities! The CAS Facebook and Twitter page will feature many different topics including conference updates, online discussions, and industry updates! Join and connect with peers and colleagues and discuss issues important to you!

If you cannot access Facebook, Twitter and LinkedIn from your office, please consider signing up to follow us from your personal account at home.

Please visit our Web Site at www.casact.org and click the social media widgets to find our pages!



Download the CAS Meeting App

We're excited that again this year, the Casualty Actuarial Society has worked with Gather Digital to provide a mobile application for the event. You will get up-to-the-minute information such as the latest agenda, updates from the conference planner, speaker information, feedback opportunities, maps, exhibitor and sponsor details, an attendee list and more.

To enable your account, open the app, select "More" or side swipe to the right to view the menu, and select "Login." Please enter the email that you used to register for the conference and select "Request a Password." You will receive an email address with a link to create your personal app password.

You may create a profile and upload a photo of yourself that other event attendees can view. Once logged into the app, select your email address at the top of the menu. This takes you to the "My Account" screen where you can "Edit" your profile and upload a photo.

To get the meeting mobile app:

iPhone and iPad users—search "casualty actuarial society" on the Apple App Store.

Android users—search "casualty actuarial society" on the Google Play Store.

Blackberry, Windows, others—go to the URL cas.gatherdigital.com on your smart phones (omit www).



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General Information

Continuing Education

CAS

The CAS Continuing Education Policy applies to all ACAS and FCAS who provide actuarial services. Actuarial services are defined in the CAS Code of Professional Conduct as “professional services provided to a Principal by an individual acting in the capacity of an actuary. Such services include the rendering of advice, recommendations, findings or opinions based upon actuarial considerations.”

Members who are or could be subject to the continuing education requirements of a national actuarial organization can meet the requirements of the CAS Continuing Education Policy by satisfying the continuing education requirements established by a national actuarial organization recognized by the Policy.

This activity may qualify for up to 15* CE Credits for the Casualty Loss Reserve Seminar for CAS members. Breakfast Roundtable attendees may add a maximum of .9* CE Credits per roundtable. Full day workshop attendees may add a maximum of 7.2* CE Credits. Half day workshop attendees may add up to 3.6 CE Credits. Participants should claim credit commensurate with the extent of their participation in the activity. CAS members earn 1 CE Credit per 50 minutes of educational session time not to include breaks or lunch.

*The amount of CE credit that can be earned for participating in this activity must be assessed by the individual attendee. It also may be different for individuals who are subject to the requirements of organizations other than the American Academy of Actuaries.

CPCU

Chartered property casualty underwriters (CPCUs) attending this year’s Casualty Loss Reserve Seminar may be awarded a maximum of 10 points under the Continuing Professional Development Program for CPCUs. Forms to receive credit will be available at the seminar.

CPA

Certified Public Accountants attending this year’s Casualty Loss Reserve Seminar may receive Continuing Professional Education (CPE) credits. One CPE credit may be received for each full 50-minute hour of seminar participation, up to 10 credits.

Registration Hours

The registration desk is located at Platinum Registration and will be open as follows:

- | | |
|---|-----------------------|
| • Wednesday, September 5, 7:00 a.m. – 1:30 p.m. | Workshop Registration |
| • Wednesday, September 5, 2:30 p.m. – 7:00 p.m. | Seminar Registration |
| • Thursday, September 6, 7:00 a.m. – 6:00 p.m. | Seminar Registration |
| • Friday, September 7, 7:00 a.m. – 2:00 p.m. | Seminar Registration |

Hotel Information

Anaheim Marriott
700 West Convention Way
Anaheim, CA 92802
Phone: (714) 750-8000

Checkout time is 12:00 p.m. Those checking out before the conclusion of the meeting may check their bags at the bell desk of the hotel. The Casualty Actuarial Society is not responsible for lost or stolen items left unattended in public areas of the hotel. CAS staff is unable to accept any bags or other personal items at the registration desk.

Security Note: When leaving the meeting room for an extended period of time, please take valuables and personal belongings with you. Neither the CAS nor the Anaheim Marriott may be held responsible for lost or stolen items.

Additional Information

For more information on future seminars or other CAS opportunities, contact the CAS office at (703) 276-3100 or visit <http://www.casact.org/education>.

Interactive Livestreaming at CLRS

Participants will join a select few of the CLRS sessions virtually. Viewers will participate live in a few of the seminar sessions remotely from around the globe. Participants attending virtually will have the opportunity to interact with other virtual attendees as well as pose questions to the panel during the session.

Livestreaming Sessions (Thursday, September 6 - Platinum Ballroom 2):

Thursday, 8:00a.m. – 9:30a.m.

Business Session/Featured Speaker: Tim East, The Walt Disney World Company

Thursday, 10:00a.m. – 11:15a.m.

AR-10: Frequency-Severity Stochastic Approach to Loss Development; Developing Individual Claims

Thursday, 11:30a.m. – 12:45p.m.

FR-2: IFRS 17 for Insurance Contracts

Thursday, 1:45p.m. – 3:00p.m.

LOB 4: WCRI Research: Highlights and Trends in Workers' Compensation

Thursday, 3:30p.m. – 4:45p.m.

ST-11: Trends and Innovation in the U.S. Health Care System

Exhibitor Raffle

We are holding a raffle for attendees who visit all of our participating exhibitors. The winner will receive a \$250 American Express gift card.

Here's how to participate:

Raffle Form: In your registration bag you received a raffle entry form. Visit each participating exhibitor and ask a representative to initial your form. Once you have initials from all participating exhibitors, submit the form at the Registration Desk by 12:30 pm on September 7 to be entered into the drawing.

The winner will be announced on-site during the closing session.

Mobile App Badge Game

You can earn different badges by completing certain tasks throughout the seminar. Size up the competition by checking the Leaderboard to see your own earned badges and to make sure you're staying ahead of the game! For those who earn that top spot within the game, you will have a chance to win a \$100 American Express Gift Card.

To play the badge game, simply download the conference app (see page 2) and sign into your app using your email address and password. Once you have signed in, you will be able to "check-in" at different events and locations. Check how you're doing by viewing the Leaderboard, located behind the MORE or MORE RESOURCES button. Your earned badges will be displayed on the Leaderboard and next to your name under the ATTENDEES button.

Best Session Award

Before the closing general session, you will have the opportunity to vote for the best concurrent session of the conference. The speakers from the winning session will each receive a \$100 American Express gift card. (And bragging rights for the next year!) Voting will be available in the CAS meeting app. Please make sure you download the meeting app and vote for your favorite concurrent session beginning at 12:30 p.m. on Friday, September 7.

Paperless Seminar

Green seminars incorporate environmental considerations to minimize negative impacts on the environment. The CAS has taken a step in that direction by making the Casualty Loss Reserve Seminar “paperless,” which means:

- Paper copies of session handouts will not be provided in the meeting rooms.
- Paper copies of the list of attendees will not be distributed, though a few copies will be available for review at the registration desk.
- Seminar evaluations will be administered electronically.
- Session slides will be posted on the CAS website so that attendees may download, print and bring handouts as desired. Please note that not every presenter will choose to provide a presentation for his or her session.

Attendees are encouraged to go online to view the list of attendees, complete the online evaluation forms and download presentations for the sessions they attend. The CAS appreciates your participation in this effort to reduce the seminar’s carbon footprint and impact.

Recommended Attire

Business casual attire is suggested for all sessions as well as the receptions on both evenings. Since meeting room temperatures and personal comfort levels vary, it is recommended that you bring a sweater or jacket to the sessions. In Anaheim, the average high temperature during September is 88 degrees F and the average low is 64 degrees F.

2018 Casualty Loss Reserve Seminar Rating System



No prior knowledge of the subject matter is assumed.
Little or no technical content.



General knowledge of the subject matter is assumed.
Moderate technical content.



General or working knowledge of the subject matter is assumed.
Moderate to highly technical content.

More detail about the session and speakers is found on the CAS Meeting App (see page 2). All sessions will be recorded, except where indicated.



Checkbox for Personal Attendance Record



Recorded Session



Livestreamed Session

Workshops

*Pre-registration is required for all workshops

WEDNESDAY, SEPTEMBER 5, 8:00 A.M. – 4:00 P.M.

□ **W-1: Intermediate R**

San Diego

This workshop is intended for individuals that already have a basic familiarity with R. These individuals should already have conducted several data analyses in R. The Workshop Syllabus will include some or all of the following:

- Anonymous functions with `*apply` or `purrr::map` functions.
- ChainLadder package.
- Package development using the `roxygen2` package.
- Data access and data munging.
- Reports via RMarkdown.

The workshop will conclude with a case study.

Moderator: Rajesh Sahasrabudhe, Partner, Oliver Wyman Actuarial Consulting

Speakers: Louise Francis, Consulting Principal, Francis Analytics & Actuarial Data Mining Inc.

Steven Berman, Specialist Leader, Deloitte Consulting, LLP

□ **W-2: Triangles Reimagined**

Platinum Ballroom 2

Imagine creating alternative case reserves, based on predictive modeling from objective claim characteristics, in order to restate the case-incurred triangle (think Berquist-Sherman, but with a scalpel instead of a chainsaw). Also, picture the idea of creating a whole new type of detailed reserve — a policy IBNR reserve that reflects anticipated emergence. This policy level reserve, together with paid amounts and alternative case reserves would form the basis for a new triangle, one with considerably little if any development, but based on detailed data leading to the reserve. The advantage of the approach is that it avoids issues with changing case reserve adequacy and changes in mix.

Moderator/Speaker: Christopher Gross, CEO, Gross Consulting

Speaker: Bret Shroyer, Gross Consulting

□ W-4: Effective P&C Opinions — The Opinion Writers' Workshop

Platinum Ballroom 3

Your actuarial opinion and reports are reviewed and analyzed for appropriateness to different stakeholders, including company management, auditors, regulators, court officials and jurors. Each group has different needs for information and you will want to be able to communicate effectively to all.

This workshop will deepen your expertise on the latest requirements for P&C Statements of Actuarial Opinions with a review of actuarial qualification standards, standards of practice and interactive case studies.

In the day-long session, the work shop will offer attendees the opportunity to:

- Gain an understanding of regulatory/company/auditor perspectives and expectations.
- Remain up to date on the latest regulations and standards.
- Delve deeper into subjects such as RMAD, ranges, documentation, data and report writing.
- Focus on communicating effectively to various stakeholder groups.

Moderator/Speaker: Margaret Wendy Germani, Retired

Speakers: Kathleen Odomirok, Executive Director, EY
Albert Beer, St. John's University

Joseph Herbers, Managing Principal, Pinnacle Actuarial Resources, Inc.

□ W-5: A Hands-On Introduction to Bayesian Inference and Reserving Models

Platinum Ballroom 4

Designed for actuaries who want a hands-on practical introduction to building Bayesian reserving models, this workshop will start with an approachable introduction to Bayesian inference. Next, we will review the underlying assumptions behind several popular reserving methods then use a combination of R and Stan (See <http://mc-stan.org> for this open-source Bayesian estimation and simulation software) to build these and new reserving models using Bayesian techniques. This is not a mathematically intensive session. The focus will be on understanding, testing and changing the underlying model assumptions. Optional pre-work will be made available in prior to the seminar.

Moderator/Speaker: Stephen Lienhard, Senior Vice President, Guy Carpenter & Co. LLC

Speaker: Jesse Nickerson, Actuary I, Guy Carpenter & Co. LLC

WEDNESDAY, SEPTEMBER 5, 8:00 A.M. – 11:30 A.M.

☐ W-6: Captive Insurance Boot Camp — Basic

Platinum Ballroom 1

Captive insurance mechanisms are flourishing. This workshop will cover some of the basic elements actuaries have to deal with while working with or on captives. Special focus will be given to captive types and structures, typical coverages, types of service providers, benefits of captives, domicile considerations, captive applications and pro formas.

Attendees will need to bring a laptop with Microsoft Excel loaded.

Moderator/Speaker: Aaron Hillebrandt, Pinnacle Actuarial Resources, Inc.

Speakers: Matthew Killough, Consulting Actuary, Milliman, Inc.

Robert Walling, Principal & Consulting Actuary, Pinnacle Actuarial Resources, Inc.

WEDNESDAY, SEPTEMBER 5, 12:30 P.M. – 4:00 P.M.

☐ W-7: Captive Insurance Boot Camp — Advanced

Platinum Ballroom 1

This half-day workshop will cover advanced captive topics, including funding approaches (experience vs. exposure rating), tax considerations, issues related to benchmarks, risk transfer and risk distribution issues, and pricing unique coverages.

Attendees will need to bring a laptop with Microsoft Excel loaded.

Moderator/Speaker: Aaron Hillebrandt, Pinnacle Actuarial Resources, Inc.

Speakers: Matthew Killough, Consulting Actuary, Milliman, Inc.

Robert Walling, Principal & Consulting Actuary, Pinnacle Actuarial Resources, Inc.

□ W-8: The Profound Power of Presence: How to Communicate Your Value and Purpose

Elite 3

In this hands-on, interactive, practical workshop, each participant will learn exciting and immediately useful techniques to communicate personal and professional value.

Part One: Communicating Value and Purpose

In today's new world, your title doesn't matter anymore. All of your degrees and certifications are no longer the best sales tool you have. The number one job for any business professional is to help people understand what they do and how they bring value. It is mandatory that you build relationships and sell yourself with every single conversation you have.

The modern business professional's communication key to success is to engage people in a way that gets them to want to learn more about you. Knowing your value proposition ensures that colleagues and clients understand what you do and how you do it.

Part Two: Power of Presence

Your ability to demonstrate your presence is your silent selling tool. Presence is often underestimated, and not understood and respected for its immense power. Your presence creates an indelible impression on others and profoundly influences their very desire to engage, work with you, and buy into/from you. If you can establish presence, people will want to work with you and be your customer. It's that simple. Presence is much more than being physically present. It means how you present yourself in every situation you are in. It's how you decide HOW you want people to see you and if you want them to respect you. It's how you show up and engage people. Presence is how people perceive you as being interested and in the game.

Moderator/Speaker: Todd Cohen, Sales Leader LLC

General Sessions

□ FS-1: Smash Your Sales Stereotype

Opening/Featured Speaker, Wednesday, September 5, 4:15 p.m. - 5:30 p.m., Platinum Ballroom 5

The modern professional must be agile, responsive, approachable and knowledgeable. You cannot live in a silo any longer! Today's adaptable and successful professional expresses their value with every conversation. It's essential that you can communicate what you do to build relationships and sell yourself with every single conversation you have.

Do people perceive you as part of the organization to the organization? Do you have the robust relationships that allow others to see you as a key to overall success?

In his motivating, informative and humorous keynote, Todd Cohen takes us through the 21 innate human communicating behaviors that we all practice every day, and he reveals how these behaviors are natural selling behaviors. When we recognize the power of our engagements, we are more successful, happy and satisfied. Todd shows how you can create and gain value from your unique value proposition.

Moderator: Anthony Bustillo, Safety National Casualty Corporation

Speaker: Todd Cohen, Sales Leader LLC

FS-2: The Actuarial Value — A Risk Manager's Point of View

Business Session/Featured Speaker, Thursday, September 6, 8:00 a.m. - 9:30 a.m., Platinum Ballroom 5

The Walt Disney Company's Director of Risk Management, Tim East will provide an insight on his approach to Risk Management and his work with actuaries in the insurance industry. An actuarial analysis can and should deliver more than just projections and a loss pick; the process should be an opportunity for actuarial professionals, risk managers and the end-user's management team to work together and add value to the organization's success. To achieve this, all parties must seek to go beyond the analysis alone to understand each other's business, the sources of valuable information and the underlying drivers of the trends — to add real value to each other's success.

Moderator: Anthony Bustillo, Safety National Casualty Corporation

Speaker: Tim East, Director of Risk Management, The Walt Disney Company

GS-1: A Taxing Challenge for the Global (Re)Insurance Industry

Closing/General Session, Friday, September 7, 1:15 p.m. - 2:30 p.m., Platinum Ballroom 5

The new U.S. Tax and Jobs Act could potentially reshape the global (re)insurance marketplace. The speakers will outline the key provisions of the Act and explores the potential impacts for (re)insurers on earnings and the balance sheet, as well as investment and capital management strategies. Speakers from two insurers will share their experiences and the actions they have taken in response to the Act. This includes describing how the Act impacted the company's expected return, required return, and available capital and required a partnership among actuarial, investments, ERM, and controllership to determine the course moving forward.

Moderator/Speaker: Christina Gwilliam, Global Product Leader for Reserving, Willis Towers Watson

Speaker: Terri Dalenta, Grange Mutual Casualty Group

Roundtable Discussions


There is no pre-registration required to attend a roundtable discussion. A maximum of 12 participants will be allowed in each roundtable discussion. Participation is first-come, first-served.

RT-1: Latest Developments in Claim Expense Costs

Roundtable Discussions, Thursday, September 6, 7:00 a.m. - 7:45 a.m., Grand Ballroom C

This roundtable will discuss latest developments on claim expense costs and reserving.

Facilitator: Chad Karls, Principal and Consulting Actuary, Milliman, Inc.

☐  **RT-2: Debrief of Session ST-11 on Trends and Innovation in the U.S. Health Care System**

Roundtable Discussions, Friday, September 7, 7:00 a.m. - 7:45 a.m., Platinum Ballroom 1

This roundtable will debrief and follow-up the discussion from the session “Trends and Innovation in the U.S. Health Care System.” Join the moderator of that session to continue a lively discussion on this timely topic.

Facilitator: Guy Avagliano, Consulting Actuary, Milliman, Inc.

☐  **RT-3: Construction Defect Reserving Challenges**

Roundtable Discussions, Friday, September 7, 7:00 a.m. - 7:45 a.m., Platinum Ballroom 2

This will be a roundtable to discuss construction defect reserving challenges and current trends.

Facilitator: Ronald Kozlowski, Lead Consultant, RTK Actuarial & Professional Services

☐  **RT-4: Case-Reserve Development Method: A No-Brainer?**

Roundtable Discussions, Friday, September 7, 7:00 a.m. - 7:45 a.m., Platinum Ballroom 3

This roundtable will discuss the value of the simple, but often overlooked Case-Reserve Development Method, and discuss why it is not more widely used.

Facilitator: Michael Solomon, The Actuarial Advantage, Inc.

☐  **RT-5: Captive Insurers**

Roundtable Discussions, Friday, September 7, 7:00 a.m. - 7:45 a.m., Platinum Ballroom 4

More and more self-insurers are using captive insurance companies to manage their risks. In addition, “831(b) captives” have been created, allowing companies to be taxed under Internal Revenue Code § 831(b). This provision provides that a captive qualifying to be taxed as a U.S. insurance company may pay tax on investment income only in any year that its written premium is \$2.2 million or less. Such captives, known as “microcaptives,” can create pricing opportunities for new insurance coverages as well. This roundtable will generate approaches actuaries need to take in order to consider these new coverages, and how actuaries deal with the reserving and pricing challenges of coverages that do not have credible loss history.

Facilitator: George Levine, Director, KPMG, LLP

RT-6: Emerging Auto Trends

Roundtable Discussions, Thursday, September 6, 7:00 a.m. - 7:45 a.m., Grand Ballroom D

Self-driving cars, ride-sharing, telematics and distracted driving are just some of the emerging trends in automobile insurance for both personal and commercial lines. How have they impacted our data? Are these trends similar or different between personal and commercial auto. Join us to discuss these trends.

Facilitator: Alex Kranz, 2nd Vice President and Actuary, Travelers

RT-7: Asbestos Reserving

Roundtable Discussions, Thursday, September 6, 7:00 a.m. - 7:45 a.m., Grand Ballroom G

Please join us for this roundtable discussion on reserving techniques and trends in asbestos litigation for defendants, insurers and reinsurers.

Facilitator: William VanDyke, Specialist Leader, Deloitte Consulting, LLP

RT-8: COPLFR's Actuarial Opinion Practice Note

Roundtable Discussions, Thursday, September 6, 7:00 a.m. - 7:45 a.m., Grand Ballroom H

Are you the appointed actuary at your company or support the appointed actuary? If so, then please join us at this roundtable to discuss the actuarial opinion practice note. We welcome your input to improve this important document that aids you in fulfilling the requirements of your role.

Facilitator: Lise Hasegawa, Vice President & Reserving Actuary, MetLife Property & Casualty

RT-9: Free Data Sources

Roundtable Discussions, Thursday, September 6, 7:00 a.m. - 7:45 a.m., Grand Ballroom J

This roundtable will discuss various sources of free and publicly available data. Please come prepared to discuss your favorites as well as learn about new sources of data.

Facilitator: Kevin Donnelly, Actuarial Consultant, United Healthcare

RT-10: How Do You Estimate Tail Factors?

Roundtable Discussions, Thursday, September 6, 7:00 a.m. - 7:45 a.m., Grand Ballroom K

In this roundtable we will discuss methodologies used to estimate tail factors for long-tailed lines.

Facilitator: Abby Sternberg, Actuary, Milliman, Inc.

Concurrent Sessions

Advanced Reserving



AR-1: Mack/Murphy Unchained

Concurrent Sessions 5, Friday, September 7, 8:00 a.m. - 9:15 a.m., Platinum Ballroom 2

Twenty-five years ago, Mack (“Distribution Free”) and Murphy (“Unbiased LDFs”) published algorithms for estimating the uncertainty of chainladder projections. With few exceptions (e.g., Bardis/Majidi/Murphy “CLFM”) not much development in that area has occurred since. Perhaps it is because AI is a much more exciting area in which to practice.

This session will reintroduce the Mack/Murphy model for the purpose of attendees achieving the following three objectives:

- Visualizing the advantages and disadvantages of chainladder.
- Appreciating what happens when the model is applied to detailed data.
- Investigating alternative approaches.

Moderator/Speaker: Ronald Kozlowski, Lead Consultant, RTK Actuarial & Professional Services

Speaker: Daniel Murphy, President, Trinostics, LLC



AR-2: Improving MLE and GLM: New Statistical Methods

Concurrent Sessions 7, Friday, September 7, 11:15 a.m. - 12:30 p.m., Grand Ballroom D

MLE provides the minimum variance unbiased estimator for a model given a data set, but there are lower variance estimates if you drop the unbiased requirement. These are much like credibility where the individual means are shrunk towards the overall mean, giving greater predictive accuracy overall. These methods carry the barely informative name “regularization.” This session will discuss frequentist and Bayesian versions and show how to apply them to triangle models. The distributional restrictions of GLM are not required, and this allows for greater modeling flexibility. Examples and code will be included.

Moderator: Chandrakant Patel, Consultant, Huggins Actuarial Services, Inc.

Speaker: Gary Venter, Adjunct Professor, University of New South Wales-Columbia University

☐  **AR-3: Reserve Ranges — Expected Outcomes, Possible Outcomes and the Application of Bayesian Reserve Estimation Models** 

Concurrent Sessions 3, Thursday, September 6, 1:45 p.m. - 3:00 p.m., Platinum Ballroom 3

Many of the models commonly used to assess reserve variability are best characterized as producing an indication of variability in future loss development by extrapolating the variability observed in the historical data triangles. While such models can provide useful insight, they generally do not provide for the impact of any risks that are not included in the historical data, and they are unlikely to capture the full potential for variability in actual outcomes. It is also unclear how (or whether) these models can be used as support for a range of reasonable actuarial central estimates. A well-designed Bayesian reserve estimation model has the potential to address both of these concerns if the model is based on parameters that align with the expert knowledge actuaries bring to the table (such as expected loss ratios, loss development patterns, trend rates, etc.). The prior distributions for these parameters provide an opportunity to build in provisions for systemic risks, and the posterior distributions could be useful in selecting ranges of reasonable estimates. We will use a sample model to illustrate how this can work in practice.

The session will combine the concepts outlined above with a discussion on the range of both expected and possible outcomes as well as incorporating events that may not be in the historical data set into the range of expected outcomes. The discussion should help the actuary capture a reasonable expectation from risks that are not included in historical data.

Moderator: Chandrakant Patel, Consultant, Huggins Actuarial Services, Inc.

Speakers: Paul Struzzieri, Principal and Consulting Actuary, Milliman, Inc.
Matthew Killough, Milliman, Inc.

☐  **AR-4: A Quantum Leap in Benchmarking Unpaid Claims** 

Concurrent Sessions 4, Thursday, September 6, 3:30 p.m. - 4:45 p.m., Grand Ballroom J

Unpaid claim distributions are a critical component of many different risk management applications. Prior research has suggested that commonly used models tend to underestimate the breadth of the distribution of possible outcomes, so benchmarks to help gauge the quality of the distribution are needed. Extensive research, based on over 30,000 triangles of industry data over a 10-year span, has provided new insights into benchmarking all models, including deterministic ranges and correlation. These insights have important implications for all uses of reserve variability modeling, including capital modeling and enterprise risk management, and will be illustrated by comparing actual results from common methods and models with new benchmarks derived from the research.

Moderator: Chandrakant Patel, Consultant, Huggins Actuarial Services, Inc.

Speaker: Mark Shapland, Principal & Consulting Actuary, Milliman, Inc.

☐  **AR-5: Mack and ODP Bootstrap — Part 1** 

Concurrent Sessions 5, Friday, September 7, 8:00 a.m. - 9:15 a.m., Grand Ballroom D

The Mack and ODP Bootstrap models are commonly used in the industry to estimate a distribution of unpaid claims. If you are not confident in your ability to use these models in practice, then these training sessions are for you. During these back-to-back sessions, the instructors will walk you through the theory underlying each model and challenge you to master the calculations. By doing the hands-on exercises, you will gain confidence in your mastery of these models. Due to the nature of the training, the attendance will be strictly limited to the first 40 people to sign up. Each participant will be expected to bring their own laptop. Files to be used during the training will be distributed just prior to the CLRS.

Moderator: Chandrakant Patel, Consultant, Huggins Actuarial Services, Inc.
Speakers: Mark Shapland, Principal & Consulting Actuary, Milliman, Inc.
Michael Henk, Consulting Actuary, Milliman, Inc.

☐  **AR-6: Mack and ODP Bootstrap — Part 2** 

Concurrent Sessions 6, Friday, September 7, 9:45 a.m. - 11:00 a.m., Grand Ballroom D

The Mack and ODP Bootstrap models are commonly used in the industry to estimate a distribution of unpaid claims. If you are not confident in your ability to use these models in practice, then these training sessions are for you. During these back-to-back sessions, the instructors will walk you through the theory underlying each model and challenge you to master the calculations. By doing the hands-on exercises you will gain confidence in your mastery of these models. Due to the nature of the training, the attendance will be strictly limited to the first 40 people to sign up. Each participant will be expected to bring their own laptop. Files to be used during the training will be distributed just prior to the CLRS.

Moderator: Chandrakant Patel, Consultant, Huggins Actuarial Services, Inc.
Speakers: Mark Shapland, Principal & Consulting Actuary, Milliman, Inc.
Michael Henk, Consulting Actuary, Milliman, Inc.

☐  **AR-7: Convolution in Reserving with a Focus on the Bornheutter-Ferguson Method** 

Concurrent Sessions 6, Friday, September 7, 9:45 a.m. - 11:00 a.m., Platinum Ballroom 2

This session will reimagine the Bornheutter-Ferguson (BF) method as a flexible process by recognizing that the BF formula is a convolution equation. Specific topics will include the additivity of error distributions, changing basis to isolate inflation and modeling insurance cycles. Examples will be illustrated in triangles rather than by formulas. The presenter will show how to manipulate triangles to get results.

Moderator: Ronald Kozlowski, Lead Consultant, RTK Actuarial & Professional Services
Speaker: James Ely, Independent Consultant

☐ AR-8: The Shape of Uncertainty

Concurrent Sessions 6, Friday, September 7, 9:45 a.m. - 11:00 a.m., Grand Ballroom C

This session will explore how the distributions generated by stochastic reserve uncertainty approaches are influenced by a range of factors. We will look at how distribution characteristics may be influenced by considerations such as the line of business analyzed, how lines of business are consolidated, the volume of data used and the type of model upon which the analysis is based. The session will focus on demonstrating this impact using real-world data and practical applications.

In addition, we will describe how a new tail risk metric, coefficient of risk, applies to reserve volatility models and what it shows about the relative fatness of tails for different reserve volatility models and different lines of business at different companies. We will also show how the fatness of tails for reserve volatility models compares to underwriting risk models.

By the of the session, users will know how to:

- Use their knowledge of the business written to assess an uncertainty model for reasonableness.
- Identify key assumptions and selections in their reserve uncertainty models.
- Qualify and select a model that is suitable for their application.

Moderator/Speaker: David Ingram, Executive Vice President, Willis Towers Watson

Speaker: James Mackay, Director, Willis Towers Watson

☐ AR-9: Frequency-Severity Stochastic Approach to Loss Development: Developing Individual Claims

Concurrent Sessions 1, Thursday, September 6, 10:00 a.m. - 11:15 a.m., Platinum Ballroom 2

Concurrent Sessions 7, Friday, September 7, 11:15 a.m. - 12:30 p.m., Platinum Ballroom 1

Session Part 1 — Taming the Wild Burning Cost: Probability Distribution Development of Individual Claims for Unbiased Excess Reserving. The ultimate cost of an unpaid individual claim follows a probability distribution, and it usually will not be the exact point resulting from the use of a loss development factor. So, when actuaries apply loss development factors to individual claims, they often create biased estimates of excess loss costs. When methods for creating a loss development probability distribution are developed, however, it is shown that the results of those methods are unbiased, not only in terms of developing losses overall, but also in projecting the ultimate costs in any layer. Methods to adjust the probability distribution for other development maturities and different claim handling will be provided.

Session Part 2 — Best Estimate Credibility for Link Ratios. Many reserving situations require supplementing a company's or an insured's own reserving data. This process uses the general credibility formula from Boor's "Credibility Based on Accuracy" to develop best estimate credibilities for the link ratios. It works with logarithms of the link ratios, producing a best geometric (power) credibility average.

Moderator/Speaker: Joseph Boor, Actuary, Florida Office of Insurance Regulation

☐  **AR-10: Looking Through the Rear-View Mirror: Back-Testing Loss Reserve Methods** 

Concurrent Sessions 3, Thursday, September 6, 1:45 p.m. - 3:00 p.m., Platinum Ballroom 4

This session will outline `reservetestr`, an R package that provides functionality to back-test loss reserve methods against the CAS loss reserve database (http://www.casact.org/research/index.cfm?fa=loss_reserves_data). Back-testing results will be shown for several traditional and advanced stochastic loss reserve methods.

Moderator/Speaker: Adam Troyer, Aon Benfield

☐  **AR-11: Introducing the Individual-Claim Level Reserving Simulator 2.0** 

Concurrent Sessions 7, Friday, September 7, 11:15 a.m. - 12:30 p.m., Grand Ballroom H

The CAS Committee on Dynamic Risk Modeling has engaged with ReservePrism, LLC to develop an individual-claim level simulator that is specifically designed for reserve analysis. The simulator is an open-source platform built with a new R package and an Excel API (application program interface). It can develop distribution and copula assumptions from experience data and simulate open claim development, claim reopenings, IBNR and UPR (future claims) at the individual claim level. This session will introduce the methodology and process including claim data analysis, fitting, simulation and reporting. The new simulator will be demonstrated to help the audience understand how it can help their reserving work and how to use the simulator.

Moderator/Speaker: Fernando Alvarado, Actuary, Travelers

Speakers: Hai You, VP, Technology, ReservePrism
Daniel Lupton, Consulting Actuary, Taylor & Mulder, Inc.
Kailan Shang, Swin Solutions Inc.

☐  **AR-12: Triangles Reimagined** 

Concurrent Sessions 7, Friday, September 7, 11:15 a.m. - 12:30 p.m., Platinum Ballroom 3

Well-estimated loss development is critical to what we do as actuaries for reserving, pricing, ERM and reinsurance. The problems with development triangles are well-known; they include changes in mix and case reserve adequacy. There is considerable and growing interest in triangle-free approaches to reserving, but triangles still fill a valuable role because they are easy to explain and understand. This presentation will describe a new approach to generating the very triangles themselves, through the use of “actuarial” case reserves that attempt to achieve a greater level of consistency than the actual booked case reserves. Whether they arise from a more detailed claim life cycle model, or a more basic predictive model of case reserves, these actuarial case reserves can help improve estimates, within the triangle framework that is well understood and accepted. Other triangles, such as one based on policy emergence reserves, will be discussed as well.

Moderator/Speaker: Christopher Gross, CEO, Gross Consulting

AR-13: Improving Actuarial Reserve Analysis Through Predictive Analytics

Concurrent Sessions 2, Thursday, September 6, 11:30 a.m. - 12:45 p.m., Grand Ballroom G

Actuaries are replacing the chain-ladder framework with advanced modeling techniques. Generalized linear models (GLMs) that employ aggregate data expand beyond the chain-ladder framework by also modeling trends in the development-, accident- and calendar-year dimensions. The session will describe the GLM modeling framework and walk the audience through a simple example.

The second part of the session will focus on GLMs that employ claim-level detail data. Introducing additional variables beyond “year” and “lag” enable us to identify patterns and trends that otherwise would be hidden in aggregate data. Examples of various predictors that are used in claim-level detail modeling will be provided. Various individual claim level models, including the incremental paid method, the Taylor McGuire method, the open-claim method and the frequency/severity method will be presented. Advantages and associated challenges for each of these models will be also discussed.

Additionally, there is much to be gained by evaluating claims experience with analytics. Advances in predictive modeling are allowing companies to detect patterns in data that were not able to be detected in the past. In this session, the presenters will illustrate some of the approaches and the benefits of using predictive modeling techniques in actuarial reserving.

Moderator: Stephen Stone, Intelligent Insurance Technologies

Speakers: Paul Bailey, Willis Towers Watson
Manolis Bardis, Senior Consultant, Willis Towers Watson

Financial Reporting

FR-1: Company-Specific Risk Factors for SAO Users

Concurrent Sessions 6, Friday, September 7, 9:45 a.m. - 11:00 a.m., Platinum Ballroom 1

Through audience participation, this session will discuss company-specific risk factors that might be significant to users of Statements of Actuarial Opinions (SAO). Panelists include a consulting actuary, an academic, a member of COPLFR and a state regulator, who will all provide a variety of perspectives to engage the audience.

Moderator/Speaker: Gregory Fears, Consulting Actuary, Pinnacle Actuarial Resources, Inc.

Speakers: Julie Lederer, Property & Casualty Actuary, Missouri Department of Insurance
Erich Brandt, Senior Consulting Actuary, Pinnacle Actuarial Resources, Inc.
Matthew Moran, Chief Actuary/Director-P&C Actuarial, Farm Bureau Insurance of Michigan

FR-2: IFRS 17 for Insurance Contracts

Concurrent Sessions 2, Thursday, September 6, 11:30 a.m. - 12:45 p.m., Platinum Ballroom 2

Panelists will give an overview of the International Financial Reporting Standard (IFRS) 17-Insurance Contracts, effective for IFRS reporting beginning in 2021. Issues discussed will include the basics of the general model and the premium allocation approach (PPA) along with a comparison of these to U.S. GAAP. Panelists will take a deeper look at discounting, risk adjustments, investment components and other common features, and they will further highlight some of the challenges anticipated.

Moderator: Marc Oberholtzer, Principal, PricewaterhouseCoopers

Speakers: G. Nyce, Principal, KPMG, LLP
Ralph Blanchard, Vice President and Actuary, Travelers

FR-3: IFRS 17: A Deep Dive into Key Issues

Concurrent Sessions 1, Thursday, September 6, 10:00 a.m. - 11:15 a.m., Grand Ballroom K

International Financial Reporting Standard (IFRS) 17 — Insurance Contracts will present some issues and challenges to P&C actuaries as they work to implement the new standard, effective with reporting in 2021. These issues include determination of unit account (why it matters and what needs to be considered), issues surrounding estimating cash flows and acquisition costs, PPA eligibility assessment/coverage units, risk adjustment approaches, discounting (is OCI option worth it?), and reinsurance matters including the treatment of profit commissions, reinstatement premiums and sliding scale commissions.

Moderator/Speaker: Gareth Kennedy, Executive Director, EY

Speakers: William Miller, KPMG Bermuda
Lela Patrik, Actuarial Consultant, PricewaterhouseCoopers

FR-4: BCAR for Reserving Actuaries

Concurrent Sessions 2, Thursday, September 6, 11:30 a.m. - 12:45 p.m., Grand Ballroom D

A.M. Best has transitioned to a stochastic-based model, Best's Capital Adequacy Relativity (BCAR), to help determine the ratings of property-casualty insurance companies. In this session, you will learn how the BCAR model applies to the work you do as a reserving actuary.

Moderator/Speaker: Lise Hasegawa, Vice President & Reserving Actuary, MetLife Property & Casualty

Speaker: Thomas Mount, Senior Director, A.M. Best

☐  **FR-5: Lessons Learned: Bermuda's Economic Balance Sheet Loss Reserve Opinion and Solvency Capital Ratio Requirements** 

Concurrent Sessions 3, Thursday, September 6, 1:45 p.m. - 3:00 p.m., Grand Ballroom G

Having completed a second year end of economic balance sheet (EBS) opinions, this session will provide a Bermuda consultant's perspective on common practice and issues regarding EBS opinions. Speakers will highlight observations from the Bermuda Monetary Authority regarding the latest round of submissions and provide the audience with an opportunity to raise their issues and questions. There will also be discussion on the status and impact of changes to the Bermuda Solvency Capital Requirement.

Moderator: David Foley, Group Chief Actuary, Enstar Group

Speakers: William Miller, KPMG Bermuda
Jeferino dos Santos, Assistant Director, Bermuda Monetary Authority

☐  **FR-6: New FASB Requirement: Setting the Uncollectible Reinsurance Reserve** 

Concurrent Sessions 4, Thursday, September 6, 3:30 p.m. - 4:45 p.m., Platinum Ballroom 4

Concurrent Sessions 5, Friday, September 7, 8:00 a.m. - 9:15 a.m., Platinum Ballroom 3

The scope of the Financial Accounting Standards Board's new Accounting Standard Update on credit losses (effective for fiscal years beginning after December 15, 2020, and for interim periods within fiscal years beginning after December 15, 2021) includes the credit portion of the uncollectible reinsurance reserves (URR). In this session, the speakers will explore the methods of estimating URR and the associated data issues and cautions.

Moderator/Speaker: Ralph Blanchard, Vice President and Actuary, Travelers

Speaker: Susan Pino, Managing Director, Deloitte Consulting, LLP

Line of Business

☐  **LOB-1: Recent Trends in Medical Professional Liability** 

Concurrent Sessions 2, Thursday, September 6, 11:30 a.m. - 12:45 p.m., Grand Ballroom K

After more than a decade of falling claim frequency, moderate severity trends and favorable operating results that resulted in today's soft market, this session will explore recent claims activity that may portend changes to the market. Commentary will be provided on leading indicators of an eventual hardening market.

Moderator/Speaker: Chad Karls, Principal and Consulting Actuary, Milliman, Inc.

Speaker: Richard Soulsby, Senior Vice President and Chief Actuary, The Doctors Company

 **LOB-2: Investor-Funded Litigation: Leveling the Playing Field or Funding the Takedown** 

Concurrent Sessions 2, Thursday, September 6, 11:30 a.m. - 12:45 p.m., Grand Ballroom H

This presentation explores one of the newest and fastest growing “spaces” in investment opportunities: investing in litigation funding. In addition to a behind-the-scenes view of this practice, including its origins and current marketing goals, we will address the immediate effect on current and pending litigation. What control, if any, do the funders have in directing specific cases? Is there an ethical grey area between passive investment and the realities of settlement decision making? We will look at all of these areas and also review current and prospective legislation affecting litigation funding in the U.S. and abroad.

Moderator/Speaker: Jonathan Colman, Attorney, Colman Law Group

 **LOB-3: Rising Tides on Liability Lines: Monitoring the State of Loss Trends for Liability Claims** 

Concurrent Sessions 5, Friday, September 7, 8:00 a.m. - 9:15 a.m., Platinum Ballroom 1

Claim costs on property lines of business have been receiving special attention since Hurricanes Harvey, Irma and Maria swept through American Southeast and Caribbean. However, loss trends have been steadily ticking upwards in a soft rate environment for liability lines of business. These lines of business are deserving of equal attention, as the recent trends could potentially create stress for insurers exposed to these types of lines of business. This presentation assesses the current state of the liability market with a specific focus on drivers of recent loss trends, the current rate environment, and what trends insurers should expect to see in the coming years impacting liability lines of business.

Moderator: David Foley, Group Chief Actuary, Enstar Group

Speaker: Philip Natoli, Manager, EY
Jay Votta, Principal, EY
Peter Venetis, Manager, EY

 **LOB-4: WCRI Research: Highlights and Trends in Workers' Compensation**  

Concurrent Sessions 3, Thursday, September 6, 1:45 p.m. - 3:00 p.m., Platinum Ballroom 2

The Workers Compensation Research Institute (WCRI) will highlight its research including trends in WC.

Moderator: Philip Borba, Principal and Director, Economics Consulting, Milliman, Inc.

Speaker: Ramona Tanabe, Executive Vice President and Counsel, Workers Compensation Research Institute

☐  **LOB-5: California Workers' Compensation — What Now? What's Next?** 

Concurrent Sessions 6, Friday, September 7, 9:45 a.m. - 11:00 a.m., Platinum Ballroom 3

What better place than California to have a session on California Workers' Compensation! California's \$20 billion workers' compensation system is the largest in the country and one of the most volatile. Two California workers' compensation experts will provide their perspectives on the latest emerging trends in the state including a new drug formulary, recent reforms impacting lien filings and utilization review and an increasing number of claims for cumulative trauma and how they could impact future cost and development levels.

Moderator/Speaker: David Bellusci, Executive Vice President, COO and Chief Actuary, W.C. Insurance Rating Bureau of California

Speaker: Alex Swedlow, President, California Workers Compensation Institute

☐  **LOB-6: Setting Reserves for Cyber Lines: Traditional Actuarial Method vs. Accumulation Risk Quantification** 

Concurrent Sessions 4, Thursday, September 6, 3:30 p.m. - 4:45 p.m., Platinum Ballroom 3

Traditional actuarial reserving methods for cyber liability. Current challenges of applying traditional methods to cyber (thin loss experience, first-party losses, systemic cat, implicit cyber). Alternative approach to setting reserves on a company's holistic cyber exposure.

Moderator/Speaker: Michael Solomon, The Actuarial Advantage, Inc.

Speaker: Daniel Bar-Yaacov, Senior Vice President, Willis Towers Watson

LOB-7: Recent Industry Trends in Reserving

Concurrent Sessions 1, Thursday, September 6, 10:00 a.m. - 11:15 a.m., Platinum Ballroom 3

The session will cover:

- Assessment of reserve runoff by major line of business, with historical trends and cycles.
- Loss ratio trends by major line of business, including current and development over time — interplay of such trends with sector pricing.
- Discussion of the key factors driving unfavorable or favorable development in major lines — workers' compensation, commercial auto, general liability, financial lines, etc.
- Brief history, analysis and findings from the new U.S. GAAP short duration disclosures.

Moderator: Chandrakant Patel, Consultant, Huggins Actuarial Services, Inc.

Speakers: Tim Landick, Principal, PricewaterhouseCoopers
Matthew Shockley, PricewaterhouseCoopers
Dorothy Woodrum, Director, PricewaterhouseCoopers



LOB-8: Construction Defects: Learning from a Deep Dive

Concurrent Sessions 7, Friday, September 7, 11:15 a.m. - 12:30 p.m., Platinum Ballroom 2

Insurance companies are continuously trying to get a better understanding of their construction defect exposure and losses. In this session, two companies will talk about lessons learned in performing a deep dive on their construction defect losses. Our first speaker will address some of the challenges faced when looking at data and data segmentation, including geography, residential vs commercial, practice versus wraps and primary versus excess. Our second speaker will talk about using advanced techniques common in other CLRS sessions to overcome construction defects reserving problems. For example, using text mining to increase data availability (identifying AI claims or residential claims) or developing a claim-level model to assist in determining IBNER.

Moderator/Speaker: Ronald Kozlowski, Lead Consultant, RTK Actuarial & Professional Services

Speaker: Emily Allen, Reserving Actuary, Liberty Mutual Insurance

☐  **LOB-9: Adjusting the Workers' Compensation Paid Loss Development Method to Consider Effects of Lump Sum Settlements** 

Concurrent Sessions 5, Friday, September 7, 8:00 a.m. - 9:15 a.m., Grand Ballroom G

The paid loss development factor method is one of the most widely used actuarial methods. In the event that a company chooses to settle a claim with a lump sum settlement, the paid loss development method first over-projects the ultimate losses for that accident year and for all subsequent accident years. Over time, the accident year with the settlement moves back towards the pre-settlement ultimate loss and ultimately ends up below the pre-settlement ultimate loss. The subsequent accident years will begin overstated but as future link ratios come in lower, these years will change to being understated. The Workers' Compensation Settlement Adjustment corrects for these biases bringing additional accuracy to the reserve review.

Moderator: Karin Rhoads, Vice President & Actuary, Travelers

Speaker: Benjamin Witkowski, Actuary & Director, The Hartford

☐  **LOB-10: Mortgage Insurance Refresher: Loss Reserving and Other Goings On** 

Concurrent Sessions 5, Friday, September 7, 8:00 a.m. - 9:15 a.m., Grand Ballroom C

This unique session will touch on three subtopics all centered on mortgage default risk. First, the session will cover the nuances of loss reserving for mortgage guaranty insurance. Second, attendees will learn about the government-sponsored enterprises' (GSEs) credit risk transfer securities, first issued in 2013, which transfer a substantial portion of mortgage credit risk to the private sector to reduce risk to taxpayers. Third, there will be an overview of FASB's new current expected credit loss model, effective for fiscal years beginning after December 15, 2019. FASB's new model will improve financial reporting by requiring timelier recording of credit losses on loans and other financial instruments held by financial institutions and other organizations.

Moderator/Speaker: Kyle Mrotek, Consulting Actuary, The Actuarial Advantage, Inc.

Speaker: Benjamin Walker, Aon Benfield

LOB-11: Health Care Reserving

Concurrent Sessions 3, Thursday, September 6, 1:45 p.m. - 3:00 p.m., Grand Ballroom D

Are you a reserving expert who is looking for a new challenge? Have you ever wondered why health care is under the SOA umbrella in the United States but is considered general insurance elsewhere? Is health insurance like pension or life insurance, which revolve around life contingencies? Or is health insurance more like a property damage or warranty policy for the human body?

Though the last comparison drastically oversimplifies the complexity and importance of our health care system, from a reserving perspective, there are a lot more similarities than there are differences between health care and property-casualty lines of business.

The session will start with a discussion of the similarities and some of the important distinctions that create unique challenges in health reserving. The goal will be to have an interesting discussion of these challenges and possible solutions. Please come prepared not only to ask questions, but to brainstorm solutions and contribute your own expertise to the discussion.

Moderator: Howard Kunst, Chief Actuary, CoreLogic

Speaker: Kevin Donnelly, Actuarial Consultant, United Healthcare

LOB-12: Using Unstructured Data to Better Manage Defense Costs

Concurrent Sessions 4, Thursday, September 6, 3:30 p.m. - 4:45 p.m., Grand Ballroom C

Defense costs have increased substantially over the past decade for many lines of business and many companies. In this session, we will discuss a new approach to better understand and manage these costs by unlocking the intelligence that is hidden inside attorney invoices. By extracting the information and properly converting it to structured data, companies are able to better evaluate their roster of defense firms and develop effective cost management and claims defense strategies. Included in this session will be commentary from a senior vice president of claims from a large medical professional liability company on how his company was able to realize significant savings.

Moderator/Speaker: Chad Karls, Principal and Consulting Actuary, Milliman, Inc.

Speaker: Tim Smith, Senior Vice President and Chief Claims Officer, NORCAL Group



LOB-13: Overlooking Tails

Concurrent Sessions 1, Thursday, September 6, 10:00 a.m. - 11:15 a.m., Platinum Ballroom 1

Actuaries are faced with a multitude of decisions when either pricing contracts and establishing reserves. One of the most common decisions to make when confronted with less than fully credible data is establishing what development factors to select, how to weigh them with a library of layered incurred and paid industry benchmarks, and, quite importantly, trying to assess the length of the tail.

This session will use a real-life example of items typically found in an excess casualty submission, a set of industry benchmarks and lots of ingenuity to try to derive various pricing, reserving, and aggregate distribution indications. The real issue is that the illustrative data is 8x8, while it is expected that the actual development could go to 20+ years. Two very skilled actuaries will try to tackle the analysis in different ways — one from a classical probability approach using various transforming, scaling, and duration mechanisms, while the other approach will use a Bayesian loss development credibility model to try to build a maximum likelihood estimate that compromises between the actual and benchmark patterns when confronted with wide ranges.

At times the presenters will delve into complexities such as using the Cape Cod method, Mata/Verheyen limit adjustments, measuring heteroskedasticity, and loglogistic growth curves, but this presentation will also provide the practitioner with new tools and ways of thinking for an age-old problem. We will also discuss the measuring of skill of indications from five and other years of data when tails are 20+ years, with an important concept of not being overconfident when assessing less than mature data.

Moderator/Speaker: John Buchanan, Principal, Excess & Reinsurance, ISO

Speaker: Aleksey Popelyukhin, Vice President, Head Actuarial Data Services, Swiss Re America



LOB-14: Workers' Compensation Claims Adjusting: What Actuaries Need to Know

Concurrent Sessions 7, Friday, September 7, 11:15 a.m. - 12:30 p.m., Grand Ballroom C

Actuaries often have little visibility into the claims adjusting process, yet rely heavily on the adjuster's reserves (case reserve) in many commonly used actuarial methodologies. What would you do with a little insight into the claims reserving process? How do changes or variations in company guidelines impact your analysis? This session will provide insight into the complex world of workers' compensation claims adjusting — from the initial intake and determination of claim validity, to consultations, decisions, best practices, settlements and reserve setting.

Moderator/Speaker: Richard Messick, Specialist Leader, Deloitte Consulting, LLP

Speaker: Dolph Zielinski, CNA Insurance Companies

☐  **LOB-15: Wheels of Misfortune** 

Concurrent Sessions 4, Thursday, September 6, 3:30 p.m. - 4:45 p.m., Grand Ballroom G

This session will provide an update to the commercial auto industry experience, most recently presented at the CAS Wheels Down Webinar. Additional industry insights will be given, including bringing in various industry and governmental sources, and a diagnosis of the past and potential remedies for the future. The presenter, who has lived through the wheels ups and downs over the last decade, will give his experiences from ground-level perspectives, including measures to help underwriters improve their insights in this continually challenging line of business.

Moderator/Speaker: John Buchanan, Principal, Excess & Reinsurance, ISO

Professional Development

☐  **PD-1: Actuarial Humor: Oxymoron or Presentation Survival Technique — Making Your Presentations More Interesting** 

Concurrent Sessions 2, Thursday, September 6, 11:30 a.m. - 12:45 p.m., Platinum Ballroom 4
Concurrent Sessions 6, Friday, September 7, 9:45 a.m. - 11:00 a.m., Grand Ballroom G

Integrate a little humor into your actuarial presentations to keep your audience alive! The session will also address translating actuarial jargon into meaningful concepts that all levels of audiences can grasp.

Moderator/Speaker: Nina Gau, Director, Property and Casualty Actuarial Services, Bickmore

Speaker: Michael Harrington, President, Actuarial Consulting, Bickmore

☐  **PD-2: ASOPs: New and Improved** 

Concurrent Sessions 6, Friday, September 7, 9:45 a.m. - 11:00 a.m., Platinum Ballroom 4

The more things change, the more they change. As a professional body, we casualty actuaries are always looking to improve ourselves and to hold ourselves to higher and ever evolving Actuarial Standards of Practice. It's important that we operate within acceptable guidelines, hence the promulgation of the ASOPs.

In this session, you will have the opportunity to discuss various ASOPs, particularly those related to reserving. We will also be looking at some of the recent changes that have been made to the ASOPs and the purpose and status of proposed ASOPs. We will revisit the Actuarial Standards Board's "Expert Testimony by Actuaries." In addition, we will include discussion on proposed standards for capital adequacy, modeling, and setting assumptions. Finally, we will open the floor to discuss any questions you might have on any of the other ASOPs. You can never know your standards too well. This session should help you know them a little better.

Moderator/Speaker: Joshua Merck, Senior Manager, Deloitte Consulting, LLP

Speakers: Arthur Randolph, Principal & Consulting Actuary, Pinnacle Actuarial Resources, Inc.

Christopher Holt, Pinnacle Actuarial Resources, Inc.

☐  **PD-3: Lights! Camera! Professionalism!** 

Concurrent Sessions 4, Thursday, September 6, 3:30 p.m. - 4:45 p.m., Platinum Ballroom 1

Have you ever come across professional dilemmas that you wish you had seen in a skit before facing them? If not, now's your chance! Come and see some fine acting by fellow actuaries while they perform sketches and grapple with such issues. You will walk away from this session with a better understanding of ASOP's and the Codes of Conduct, and you will learn how to apply them when you face your own professional ethical dilemmas. Our presentation includes new skits this year compared to the 2017 CLRS. This session may be counted as professionalism credit for continuing education.

Moderator/Speaker: Kendall Williams, Manager and Property/Casualty Actuary, Country Financial

Speakers: Peter Royek, Senior Vice President and Actuary, Toa Reinsurance Company of America

Brandon Shain, Actuarial Director, GAINSCO

PD-4: Actuarial Trivia Challenge!

Concurrent Sessions 7, Friday, September 7, 11:15 a.m. - 12:30 p.m., Platinum Ballroom 4

From the group that brought you *Jeopardy!*, *Family Feud*, and “Who Wants To Be An Actuary?”, the CAS Professionalism Education Committee presents the latest incarnation of its actuarial trivia format. Using the Kahoot app, audience members will answer a series of multiple-choice trivia questions that will test the depth of their knowledge on the profession’s professional standards. See if you can come out on top!

Session participants should walk away from this session with a better understanding of ASOPs and the Code of Conduct, and how to apply them when facing their own professional ethical dilemmas. This session may be counted as professionalism credit for continuing education.

Moderator/Speaker: Kendall Williams, Manager and Property/Casualty Actuary, Country Financial

Speakers: Peter Royek, Senior Vice President & Actuary, Toa Reinsurance Company of America

Brandon Shain, Actuarial Director, GAINSCO

PD-5: Coffee Klatch for Opinion Writers

Concurrent Sessions 1, Thursday, September 6, 10:00 a.m. - 11:15 a.m., Grand Ballroom G

So, you have a few questions about your upcoming or recent opinion. You probably won’t find a better place to get your answers than this session. Or maybe you have resolved an interesting issue in your opinion. Come and share your knowledge and help your fellow practitioners avoid similar problems. Need help making a better presentation to your board or senior management? These panelists are sure to have helpful insight, along with your fellow attendees. The same can be said about interacting with regulators, auditors and even lawyers. Bring your questions and take advantage of the collective experience that will be in this session.

Moderator/Speaker: Joseph Herbers, Managing Principal, Pinnacle Actuarial Resources, Inc.

Speakers: Margaret Wendy Germani, Retired

Kathleen Odomirok, Executive Director, EY

Albert Beer, St. John’s University

Julie Lederer, Property & Casualty Actuary, Missouri Department of Insurance

☐  **PD-6: Case Studies in Professionalism** 

Concurrent Sessions 1, Thursday, September 6, 10:00 a.m. - 11:15 a.m., Platinum Ballroom 4

Session panelists will discuss various situations where an actuary needs to make the “right call,” but is there always a “right call?” Audience participation will be encouraged for a lively discussion regarding issues reserving actuaries face on a regular basis.

Moderator/Speaker: Eric Hornick, Chief Claims Officer and Actuary, The Black Car Fund

Speakers: David Wright, SVP, Managing Director, Beach (Acrisure)
Thomas Le, Managing Director, Ultimate Risk Solutions

☐  **PD-7: Business Skills and our ASOPs** 

Concurrent Sessions 3, Thursday, September 6, 1:45 p.m. - 3:00 p.m., Platinum Ballroom 1

Effective business skills are essential for a successful actuarial career, but they may also be required for maintaining our professional standards. This panel will discuss how the changing business environment, electronic communications and social media are requiring actuaries to enhance their business skills and their awareness on how failing to adhere to best practices may result in a violation of the ASOPs. Speakers will highlight some of the business skills and ASOPs that actuaries should consider in their everyday work. Other panelists will discuss business situations that may violate our ASOPs. The audience will be asked to share their perspectives on the situations and offer recommendations on best practices to avoid them.

Moderator/Speaker: Mark Littmann, Principal, PricewaterhouseCoopers

Speakers: Lynne Bloom, Director, PricewaterhouseCoopers
Matthew Shockley, PricewaterhouseCoopers
Chad Wischmeyer, Partner and Self-Insurance Practice Leader, Oliver Wyman Actuarial Consulting

Risk Management

RM-1: Ceded Reserving: It is Not as Simple as Subtraction

Concurrent Sessions 4, Thursday, September 6, 3:30 p.m. - 4:45 p.m., Grand Ballroom H

In discussing the pros and cons of various approaches to estimating ceded loss reserves, we will cover various data organization approaches and actuarial techniques as well as what potential shortfalls may come from utilizing these methods. Finally, this session will help you tackle some of the more difficult-to-quantify loss sensitive features of reinsurance, including aggregate deductibles.

Moderator/Speaker: Bruce Fell, Principal, Deloitte Consulting, LLP

Speaker: Jeffrey Casaday, Manager, Willis Towers Watson

RM-2: Hot Topics in the Captive World

Concurrent Sessions 2, Thursday, September 6, 11:30 a.m. - 12:45 p.m., Grand Ballroom J

Explore what's hot in the captive insurance world in this session discussing the latest topics to keep in mind if you're forming a new captive, already have one or are in closure. Panelists will focus on recent tax court cases, domiciles explosion, actuarial guidelines, advanced captive program placements, capital issues, base erosion and anti-base tax (BEAT), and base erosion and profit shifting (BEPS). Critical to the session is an interactive and open discussion on how changes in the captive landscape is affecting insureds, managers, actuaries, providers, brokers and others in the marketplace.

Moderator: William Miller, KPMG Bermuda

Speakers: James Bulkowski, Senior Manager, EY
John Ferrara, EY

RM-3: Run-Off as a Business

Concurrent Sessions 1, Thursday, September 6, 10:00 a.m. - 11:15 a.m., Grand Ballroom D

More and more companies are moving into insurance liability runoff, a fast-growing niche business. The panelists will discuss this phenomena and restructuring options, including Rhode Island's insurance business transfer (IBT) legislation and Oklahoma's recently passed IBT. This legislation will make it easier for companies looking to create runoff solutions for books of business that are lingering on their balance sheets.

Moderator: Barbara Murray, Director, PricewaterhouseCoopers

Speakers: James Votta, Principal, EY
Luann Petrellis, Managing Director, PricewaterhouseCoopers
William Barbagallo, PricewaterhouseCoopers

RM-4: Workers' Compensation Claim Closure Project — A Case Study

Concurrent Sessions 3, Thursday, September 6, 1:45 p.m. - 3:00 p.m., Grand Ballroom K

How many failed underwriting plans, marketing schemes and claim closure projects must you be asked to “support” in your career before you give up altogether on them? Before you become too jaded, you may want to learn more about a California workers’ compensation claim closure project that is working as promised. A similar project may work for a self-insured in another state or a book of business across states for an insurance carrier. But one thing is clear: in the state of California, a properly thought out claim closure project can offer an enormous return on investment.

In this session, a panel of actuaries, a claims manager and a risk manager will draw the landscape for why California workers’ compensation is fertile ground for a claim closure project, explain the investment of resources and effort required to launch and maintain the effort, demonstrate how results early on in the project are manifested in actuarial data (not good), and provide some parameters around how long one should expect to wait before seeing favorable results emerge in your reserve study.

Moderator/Speaker: Martin King, Director of Property and Casualty Actuarial Services, Kaiser Permanente

Speakers: Beth Dupre, Managing Director, Marsh
 Ryan Purcell, Kaiser Permanente
 Esther Becker, Principal, Oliver Wyman Actuarial Consulting

RM-5: Making Commutations Successful

Concurrent Sessions 2, Thursday, September 6, 11:30 a.m. - 12:45 p.m., Platinum Ballroom 3

The landscape of commutation of reinsurance contracts is changing. Third-party involvement, while not new, continues to become more prevalent due to increased portfolio transfers of cedent’s prior year portfolios. The addition of another party also makes the commutation more challenging. To address this challenge, a close partnership among the ceding company, third-party and the reinsurer is essential to reaching a successful conclusion. This session will describe the challenges and how actuaries and commutation leaders from all parties work together to develop, propose and finalize commutations successfully.

Moderator: Steven Herman, Principal, Asset Discovery Associates LLC

Speakers: Joseph Loggia, Vice President, Buxbaum, Loggia & Associates, Inc.
 Barbara Murray, Director, PricewaterhouseCoopers
 Joseph Wallen, Senior Vice President, General Reinsurance Corporation
 Christopher Claus, Senior Vice President, Munich Re America, Inc.

RM-6: Tax Cut and Jobs Act of 2017: Impact on Captives Insurers

Concurrent Sessions 5, Friday, September 7, 8:00 a.m. - 9:15 a.m., Grand Ballroom J

Through reductions in tax rates, the Tax Cuts and Jobs Acts of 2017 is generally thought of as being beneficial by the general business community. Many in the captive community, however, have felt as though the insurance industry was singled out and the changes may have many negative consequences. Our panel will discuss the changes affecting the industry, what to expect and if, indeed, the industry's concerns are valid. We will review the changes in tax rates and interest rates used to discount losses resulting from the Tax Cuts and Jobs Acts of 2017 and their impact on a case study single-parent captive insurance company taxed as a property-casualty insurer. In addition, the panel will discuss how the size of the captive and its mix of business can influence the impact of the changes in tax law.

Moderator: Stephen Koca, Principal & Consulting Actuary, Milliman, Inc.

Speakers: Arlene Richardson, Consulting Actuary, Milliman, Inc.
Daniel Kusaila, Partner, Crowe Horwath LLP

RM-7: LPTs and ADCs as a Risk Management Tool

Concurrent Sessions 4, Thursday, September 6, 3:30 p.m. - 4:45 p.m., Grand Ballroom K
Concurrent Sessions 6, Friday, September 7, 9:45 a.m. - 11:00 a.m., Grand Ballroom H

So what tools do insurers with significant casualty portfolios use to manage their risk? A loss portfolio transfer (LPT) or an adverse development cover (ADC) or both are a few ways to manage past casualty sins. In this session, we will talk about LPT/ADC pros and cons, how they're priced and why now is the best time in the last 15+ years to effectively use these reinsurance structures as a risk management tool.

Moderator/Speaker: Rajesh Sahasrabudde, Partner, Oliver Wyman Actuarial Consulting

Speakers: Dustin Loeffler, Director, Aon Benfield
Paul Ceasar, Managing Actuary, Guide One Insurance Group

Special Topics

☐ **ST-1: Optimizing Reserve Segmentation with Cluster Analysis**

Concurrent Sessions 6, Friday, September 7, 9:45 a.m. - 11:00 a.m., Grand Ballroom J

Reserve analyses are normally performed on a variety of segments of business, with segments often defined based on line of business or policy type. But how do we know if the segmentation we are using is optimal? Are we using the right criteria and the appropriate granularity to define our segments? Too few segments could mean sacrificing accuracy, but too many segments could mean a lack of credibility and unnecessary work for reserving actuaries. This session will use a real-life example to demonstrate how clustering methods can help us decide how to segment risks properly for reserve analyses.

Moderator/Speaker: John Avitabile, Actuary, Liberty Mutual Insurance

Speaker: Jay Cooke, Assistant Actuary, Liberty Mutual Insurance

☐ **ST-2: Dude, Where's My Ledger? Blockchains, DLTS, Partnerships, Insurance Use Cases**

Concurrent Sessions 1, Thursday, September 6, 10:00 a.m. - 11:15 a.m., Grand Ballroom H

This presentation will be an overview of blockchain technology, why it's important to insurers and a review of active use case development in the insurance industry. Attendees in this session can expect:

- 1) An overview of blockchain technology.
- 2) Discussion on why customers and insurers will care.
- 3) Review of insurance use cases utilizing blockchain technology.
- 4) Facts on partnerships and industry consortiums leveraging blockchain technology.

Moderator/Speaker: Dan Lafever, Lead Technology Enablement specialist, Liberty Mutual Insurance

Speaker: Vishal Garg, Farmers Insurance

 **ST-3: Tracing a Third-Party Liability Claim — Applying Analytics to Improve Claims Risk Management** 

Concurrent Sessions 1, Thursday, September 6, 10:00 a.m. - 11:15 a.m., Grand Ballroom J

The 80/20 rule is commonly applied to third-party liability claims: namely, that 80 percent of the cost comes from 20 percent of the claims. What if you could consistently predict whether a claim would fall in that costliest 20 percent so you could handle it in a way that mitigates the risk?

The session will provide a view on using analytics and predictive modeling to enhance the claims handling process for third-party liability claims. First, the session will discuss the design considerations for a third-party liability claims modeling solution. Second, there will be a review of how the model results can be effectively implemented into the day-to-day claims handling process to drive organizational value.

Moderator/Speaker: Matthew Carrier, Principal, Deloitte Consulting, LLP

Speaker: Peter Wu, Director, Deloitte Consulting, LLP

 **ST-4: Technology and Disruption: Leveraging Innovation to Enhance Productivity** 

Concurrent Sessions 3, Thursday, September 6, 1:45 p.m. - 3:00 p.m., Grand Ballroom H

Many jobs across the economy are quickly becoming disrupted as a result of advanced technologies like cognitive automation and artificial intelligence. Are actuaries next? Using a process called Pixelation, this session will explore the many tasks that actuaries perform and what parts of our roles could be disrupted or replaced. At the same time, we will discuss how this disruption can have a positive impact on the actuarial role and how we can leverage these technologies to provide even more value to our constituents.

Moderator/Speaker: Bruce Fell, Principal, Deloitte Consulting, LLP

Speaker: Stefan Peterson, Manager, Deloitte Consulting, LLP

 **ST-5: Intermediate Reserving Bootcamp: Part 1** 

Concurrent Sessions 1, Thursday, September 6, 10:00 a.m. - 11:15 a.m., Grand Ballroom C

This double concurrent session will expand on the basic methods used to determine ultimate losses looking at nontraditional/advanced methods beyond chain ladder.

Moderator/Speaker: Karin Rhoads, Vice President & Actuary, Travelers

Speakers: Jane Taylor, Consulting Actuary
D. Scott Lamb, Senior Vice President, McKee Risk Management
Andrew Somers, Actuary, Travelers
Brian Clancy, 2nd Vice President & Actuary, Travelers

☐ ST-6: Intermediate Reserving Bootcamp: Part 2

Concurrent Sessions 2, Thursday, September 6, 11:30 a.m. - 12:45 p.m., Grand Ballroom C

This double concurrent session will expand on the basic methods used to determine ultimate losses looking at nontraditional/advanced methods beyond chain ladder.

Moderator/Speaker: Karin Rhoads, Vice President & Actuary, Travelers

Speakers: Jane Taylor, Consulting Actuary
D. Scott Lamb, Senior Vice President, McKee Risk Management
Andrew Somers, Actuary, Travelers
Brian Clancy, 2nd Vice President & Actuary, Travelers

☐ ST-7: Phones, Drones and Disaster Zones

Concurrent Sessions 5, Friday, September 7, 8:00 a.m. - 9:15 a.m., Platinum Ballroom 4

People who lose everything in a flood or a wildfire have their worlds turned upside down. If you haven't experienced it, you can only imagine what it's like to suddenly become homeless, unsure of where your next meal will come from or worried about whether friends and relatives are safe.

It's important for insurers to quickly settle the claims for those who've been devastated. Getting a claim settled not only gets folks started on the road to recovery, but it can provide much-needed financial help as they scramble for living accommodations, transportation, meals, kids' needs and more.

The good news is that insurers are using technology to speed the process of paying homeowners hit hard by destructive events like Hurricane Harvey and the California wildfires. Using a combination of drones and small aircraft to conduct aerial imaging surveys, and analyzing the resulting imagery with machine learning and cloud analytics, insurers are able to assess damage and pay out compensation in hard-hit areas faster than ever.

Join us to learn more about this exciting technology and its impact on the claims process, and how actuaries can appropriately leverage the results downstream.

Moderator/Speaker: Shannon Gilbert, USAA

Speakers: Martin Ellingsworth, USAA
Michael Nielsen, USAA

ST-8: Claims Analytics' Impact on Reserving in 2023

Concurrent Sessions 2, Thursday, September 6, 11:30 a.m. - 12:45 p.m., Platinum Ballroom 1

It's been five years since a claims analytics model was implemented. How does this impact reserving practices? What challenges will you face next? How will your the claims adjusters skill set needs change over time? Will your model need to change over time? How might changes in privacy regulations change claim analytics? Will a claimant's health data become an input for property-casualty claim analytics? Our panel will discuss these questions and more.

Moderator: Abby Sternberg, Actuary, Milliman, Inc.

Speakers: Jinjie Duan, Claims Actuary, Farmers Insurance Group
Thomas Veale, President, TRISTAR
Philip Borba, Principal and Director, Economics Consulting, Milliman, Inc.

ST-9: California Wildfire Risk: What We Have Learned and Where We Are Going

Concurrent Sessions 4, Thursday, September 6, 3:30 p.m. - 4:45 p.m., Grand Ballroom D

Industry experts from CoreLogic will discuss how the recent wildfire and mudslides will impact insurance costs, capital adequacy and reserving.

Moderator/Speaker: Howard Kunst, Chief Actuary, CoreLogic

Speakers: Thomas Larsen, Group Manager, CoreLogic
Tom Jeffery, Senior Hazard Scientist, CoreLogic

ST-10: Advanced Actuarial Automation Technology to Meet Today's and Tomorrow's Needs

Concurrent Sessions 3, Thursday, September 6, 1:45 p.m. - 3:00 p.m., Grand Ballroom J

Concurrent Sessions 6, Friday, September 7, 9:45 a.m. - 11:00 a.m., Grand Ballroom K

As the world becomes increasingly more analytics- and data-driven, insurers are embracing innovation and advanced technology to spur growth, preserve profitability and manage risk. Actuarial leaders are under pressure to do more in less time with stable or reduced personnel; thus, they are looking to modernize and transform their operations, toolsets and workforces to better serve the business. Robotics process automation and other advanced actuarial automation tools, have emerged as key technology enablers to complement a transformation and accelerate actuarial innovation.

Moderator/Speaker: Ian Sterling, Senior Actuarial Advisor, EY

Speakers: Jason Nikowitz, Actuarial Analyst, Zurich North America
Ranju Saxena, EY

☐  **ST-11: Trends and Innovation in the U.S. Health Care System**  

Concurrent Sessions 4, Thursday, September 6, 3:30 p.m. - 4:45 p.m., Platinum Ballroom 2

Since passage of the Affordable Care Act (ACA) almost eight years ago, the U.S. health insurance market has been in a state of transformation. While the ACA brought the most significant changes for consumers in the individual market and Medicaid, it affected the entire health care system. Back at the end of January 2018, three of America's largest corporations — Amazon, JPMorgan Chase and Berkshire Hathaway — announced their plan to form a joint venture to “disrupt health care.” While few doubt the ability of these organizations to radically remake markets, disrupting health care, which represents 18 percent of the U.S.'s GDP, is a tall order. In this session, the presenters will provide a wide-ranging overview of current trends affecting the U.S. health insurance market as well as the potential impact on casualty insurance, including the after-effects of the ACA, the future of public programs like Medicaid and Medicare, current trends and innovations.

Moderator: Guy Avagliano, Consulting Actuary, Milliman, Inc.

Speakers: Andrew Naugle, Principal & Healthcare Management Consultant, Milliman, Inc.

Adam Blais, Claims Management Consultant, Milliman, Inc.

☐    **ST-12: Reserves Call Paper: “Enhancements to the ‘Shane-Morelli’ Approach to Provide Technical Guidance in Implementation, and Proposed Solutions for Challenges Encountered in Application”** 

Concurrent Sessions 3, Thursday, September 6, 1:45 p.m. - 3:00 p.m., Grand Ballroom C

Authors will present their paper from the 2018 Reserves Call Paper Program.

Moderator/Speaker: Dolph Zielinski, CNA Insurance Companies

Speaker: Shon Yim, Senior Actuarial Assistant, Allstate

Dawn Fowle, Senior Manager, EY

☐  **ST-13: Reserves Call Paper: “DeepTriangle — A Deep Learning Approach to Loss Reserving”** 

Concurrent Sessions 5, Friday, September 7, 8:00 a.m. - 9:15 a.m., Grand Ballroom H

We propose a novel approach for loss reserving based on deep neural networks. The approach allows for jointly modeling paid losses and claims outstanding, and incorporating heterogenous inputs. We validate the models on loss reserving data across lines of business, and we show that they attain or exceed the predictive accuracy of existing stochastic methods. The models require minimal feature engineering and expert input, and can be automated to produce forecasts at a high frequency.

Moderator/Speaker: Kevin Kuo, Software Engineer, RStudio, Inc

☐  **ST-14: What iCAS is Up To: Introducing our New Credentials in Catastrophe Risk Management**

Concurrent Sessions 7, Friday, September 7, 11:15 a.m. – 12:30 p.m., Grand Ballroom G

At this session, leaders of The CAS Institute (iCAS) will provide a quick update on the Certified Specialist in Predictive Analytics (CSPA) credential and then jump into our new two-tier Cat Risk Management credentials being offered through iCAS, a subsidiary of the CAS.

This informative and interactive session will cover:

- What the Certified Specialist in Predictive Analytics (CSPA) credential is and how it will benefit your career.
- The five requirements for earning the credential.
- The knowledge, competencies and applications to business needs that have been incorporated into the credential's learning objectives, and how mastery will be assessed.
- The formation of a specialist practice community within iCAS for those interested in data science and predictive analytics.
- The outline of the soon to be offered two-tier Catastrophe Risk Management credentials.
- The relationship between iCAS and the International Society of Catastrophe Managers, which will be facilitating a specialist practice community for those interested in catastrophe risk.
- Any questions you may have about The CAS Institute and any of its credential offerings.

Moderator/Speaker: Amy Brener, Director, The CAS Institute

Speaker: Stephen Stone, Intelligent Insurance Technologies.

CE Credit Attendance Form

2018 Casualty Loss Reserve Seminar

Organization seeking to receive CE Credits from: ____CPCU

Please indicate below which sessions that you attended at the CLRS and ensure that you sign your name for each session completed. Please return this form to the registration desk.

Signature (Print and Sign)

Company:

Session Title:

Date:

Room:

Length: ____ Minutes

Session Title:

Date:

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Length: ____ Minutes