

2022
MARCH
14–16



*R*atemaking
*S*product and
*M*odeling
Virtual Seminar

Virtual Conference

Session Descriptions

General Sessions

Keynote - General Session 1, Breakout Room 1

□ GS1: The Computer Knows Your Secrets: The Power, Challenge, and Opportunities of AI + Personal Data

Level 1: No prior knowledge of the subject is assumed

Artificial intelligence, when applied to the vast amount of data each of us produce each day, is a powerful tool that can uncover our deep secrets and predict our future behavior before we even know what we are going to do. However, despite its mathematical veneer of objectivity, AI often captures and reflects our human biases and societal differences. We'll explore the world of AI and the surprising things it can do - and the alarming ways it fails - and discuss the implications for the industry.

Learning Objectives:

1. Recognize the depth of insights and power of artificial intelligence when applied to describing people and predicting their behavior
2. Identify ways that bias may creep into models, impacting accuracy and fairness
3. Evaluate potential approaches to resolving challenges that arise from AI predictions

Moderator: Eric Krafcheck, Principal & Consulting Actuary, Milliman

Speaker: Jennifer Golbeck, Director of the Social Intelligence Lab -Associate Professor - University of Maryland

Session Descriptions

General Sessions

General Sessions 2/3, Breakout Room 1

□ GS2: Bias and Fairness: Laying the Foundation for the Path Forward on Race and Insurance

Level 1: No prior knowledge of the subject is assumed

As subject matter experts in our field, actuaries will be leading the charge in insurance industry efforts to identify, measure, and address issues of potential racial bias in insurance pricing. In December 2021, the Casualty Actuarial Society published four research papers as part of the CAS Approach to Race and Insurance Pricing. This session will share key learnings from each of these research papers to answer important questions. Can the insurance industry agree on a single definition of unfair discrimination? How have historical policies and practices outside of insurance led to increased scrutiny on P&C Insurance rating variables? What lessons can we learn from other financial services industries and their approaches to addressing racial bias? How can we quantify and measure discriminatory effects in insurance pricing? With a clear understanding of these issues, actuaries will be well-prepared to share our insights and develop solutions to address potential racial bias in insurance pricing.

Learning Objectives:

1. Decipher the general, legal and regulatory definitions of commonly used terms like unfair discrimination, proxy discrimination and disparate impact
2. Understand historical policies and practices that lead to concerns of racial bias across financial services industries, and the solutions in place to address those concerns
3. Measure fairness and mitigate potential bias in insurance rating Using a variety of statistical methods

Moderator: Mallika Bender, Actuarial Diversity, Equity & Inclusion, Casualty Actuarial Society

Speakers: Sharon Mott, Director & Senior Actuary, Allstate Insurance Company
Robin Harbage, Robin Austin LLC
Kudakwashe Chibanda, The Hartford
Roosevelt Mosley, Principal & Consulting Actuary, Pinnacle Actuarial Resources, Inc.

Session Descriptions

General Sessions

General Sessions 2/3, Breakout Room 2

□ GS3: Trends in Economic and Demographic Data, and How Could that all Impact Insurance

Level 1: No prior knowledge of the subject is assumed

The United States continues to see changes in economic activity impacting the labor market, price changes, and demographic shifts. Join our two speakers from the Bureau of Labor Statistics and the Census Bureau, who will provide insights into what trends they have observed and followed, and what that data can tell us about the P&C insurance industry risks.

Carson will give an overview of the Current Employment Statistics (CES) program, which produces monthly estimates of non-farm employment, hours, and earnings by industry. CES—often referred to as the establishment survey—is one of two programs whose data output comprise the monthly Employment Situation (the other being the Current Population Survey (CPS)). The overview will include COVID-related CES data visualizations, including a look at how earnings data rose early in the pandemic even as payrolls shrunk, and how those trends may impact the P&C insurance industry.

Kelly will provide an overview of Census data relevant to P&C actuaries including housing and property statistics, internal migration and population characteristics in risk areas such as coastline counties. Data from the 2020 Census are just the tip of the iceberg. Did you know that in addition to conducting a once a decade Census, the U.S. Census Bureau conducts over 130 surveys annually? Using both Census and survey data provides a more comprehensive look at characteristics of population and housing throughout the nation.

Learning Objectives:

1. Understanding the CES program, the data it produces, and how to access it
2. Recall relevant Census data topics and trends including characteristics of housing, internal migration and population in risk areas
3. Explore census.gov resources to guide independent learning and research as well as options for customized data training, including accessing presented statistics and information through direct links to tables, visualizations, articles, and tools

Moderator: Peter Tomopoulos, Senior Manager, Deloitte Consulting, LLP

Speakers: Kelly Karres, Data Dissemination Specialist, US Census Bureau

Carson Wilson, Economist at Division of Current Employment Statistics, U.S. Bureau of Labor Statistics

Roundtables

Roundtables, Breakout Room 1

□ RT1: MGA Marketplace

Level 1: No prior knowledge of the subject is assumed

This roundtable will touch on areas of interest to actuaries about MGAs, including parametrics and digital MGAs. We are excited to have Denise Olson leading this interactive discussion.

Facilitator: Denise Olson, Vice President, Programs Technical Director, US Middle Markets, Zurich North America

Session Descriptions

Roundtables

Roundtables, Breakout Room 2

□ RT2: Collaborative A&A Communities with DEI in Mind

Level 1: No prior knowledge of the subject is assumed

Interested in creating an actuarial and analytics community that is welcoming to all? Whether you are a leader, manager, individual contributor or volunteer, all members of a community play a role in shaping its culture. Join us in this roundtable discussion as we explore several facets of Diversity, Equity and Inclusion (DEI) and how they play a role in our communities.

Learning Objectives:

1. Define Diversity, Equity & Inclusion
2. Identify Gender & Cultural Biases
3. How to provide feedback with DE&I in mind

Facilitator: Matthew Duke, SVP & Chief Actuary, Head of Global Actuarial & Analytics Services, Xceedance

Roundtables

Roundtables, Breakout Room 3

□ RT3: Professionalism

Level 1: No prior knowledge of the subject is assumed

What's on your mind with Professionalism? The USQS? The new bias requirement? One of the Actuarial Standards being drafted by the Actuarial Standards Board? Let's chat about Professionalism!

Facilitator: Rebecca Williams, Actuary, North Carolina Rate Bureau

Roundtables

Roundtables, Breakout Room 4

□ RT4: Blockchain & the Future of Ratemaking

Level 1: No prior knowledge of the subject is assumed

Blockchain has already made its way into the insurance industry. It's ability to provide increased trust, security, and transparency has made it a suitable technology to deliver proof of insurance, to improve claims handling, and to automate policy issuance. But how will it help when it comes to ratemaking data and analyses? This roundtable aims to discuss the possible benefits and hurdles of using blockchain technology to improve data quality and data sharing within the insurance industry.

Facilitator: Michael Payne, Chief Pricing Actuary, American Association of Insurance Services

Session Descriptions

Modeling

Concurrent Sessions 1, Breakout Room 2

□ M1: Introduction to Accurate GLM

Level 3: Working knowledge of the subject is assumed

In traditional GLM modeling, categorical features are often treated with one-hot encoding. However, this method of encoding removes any ordering information inherent in the data. With accurate GLM, we propose to utilize an alternative encoding approach which allows us to preserve the ordering information. In this presentation, we will introduce the accurate GLM approach to modeling and discuss what motivated the approach. We will make a comparison of this approach to traditional GLM and GAM approaches, and illustrate the approach through simulated data modeling exercises and a case study.

Learning Objectives:

1. Understand the concepts and motivations behind the accurate GLM approach
2. Explore how this approach compares with traditional GLM and GAM modeling approaches
3. Explore how to set up the data and carry out modeling using the accurate GLM approach

Moderator: Michael Chen

Speakers: Gary Wang, Willis Towers Watson
Hirokazu Iwasawa, Guest Professor, Waseda University

Modeling

Concurrent Sessions 6, Breakout Room 1

□ M2: Creating Text Topics for Modeling using Singular Value Decomposition (SVD)

Level 1: No prior knowledge of the subject is assumed

Freeform text data can contain a wealth of information to make predictions for future outcomes. However, it is difficult to know where to start building variables from such a large volume of text. This is where SVD can help you! In this session, you will be able to see how an SVD analysis can take freeform text data and simplify it into a small number of “topics” (components that explain the most variation), which you can then use in your predictive models.

Learning Objectives:

1. Set up a Document-Term matrix (including text preprocessing and dictionary creation)
2. Understand the components of a Singular Value Decomposition output
3. Apply the SVD results to create “topic” variables on new documents
4. Use the SVD “topic” variables in a predictive model

Moderator: Denise Christophel, Sentry Insurance

Speaker: Alan Johnson, Actuarial Assistant Sr-P&C, Sentry Insurance

Session Descriptions

Modeling

Concurrent Sessions 4, Breakout Room 4

□ M4: Transparent Models with Machine-Learning: Rethinking the Modeling and Validation Process

Level 2: General knowledge of the subject is assumed

Actuarial modeling puts a strong emphasis on model transparency. Transparency and clarity is often obtained at the expense of the automation of the modeling process, and opposed to automated modeling or machine-learning.

In this presentation, we will discuss how transparency is a feature of the model, not the modeling process. With the right technologies, automated modeling can generate transparent models. We will demonstrate how credibility can be incorporated in standard GLM modeling by adding prior assumptions to the coefficients. Furthermore, we will explore how the choice of the right hypothesis can replace the need for heavy feature engineering on ordinal variables to develop sound and predictive models.

In particular, we will discover how a Generalized Linear Model with Credibility assumptions performs relative to classic criteria such as a likelihood or statistical testing, review the role of the modeler, and the model validation process, in an environment mixing automated model creation with an in-depth investigation of transparent models.

Learning Objectives:

1. Review standard GLM modeling techniques to incorporate non-linear relations between the explanatory and predictor variables
2. Understand how credibility-like assumptions can be incorporated into standard GLM modeling
3. Review the role of the analyst when evaluating automated models

Moderator: Joseph Sveda, Consulting Actuary, Pinnacle Actuarial Resources, Inc.

Speaker: Guillaume Beraud-Sudreau, Chief Actuary & Co-founder, Akur8

Session Descriptions

Modeling

Concurrent Sessions 7, Breakout Room 5

□ M4-R: Transparent Models with Machine-Learning: Rethinking the Modeling and Validation Process

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Session Descriptions

Modeling

Concurrent Sessions 5, Breakout Room 1

□ M5: Dislocation Analysis: Segment Detection of Disrupted Rates

Level 2: General knowledge of the subject is assumed

Control of rate changes is particularly challenging for complex insurance products. Multiple risks are covered by these contracts, and each risk requires its own specific modeling. When all these risks are combined and entangled, the cumulative effect may lead to undesired disruptive rate changes.

One of Dislocation Analysis objectives is to detect the portfolio's segments which are most impacted by the new proposed premium: such information is key as it provides guidance for rating adjustments. Automated modeling can greatly improve the accuracy and speed of the overall process. In this presentation it will be shown how, starting from a global analysis of the rate changes, the modeler can quickly detect the sources of the dislocation and obtain guidance for the right set of adjustment leading to a more desired rating structure.

Furthermore, we will see how this proposed automated modeling can be also applied to identify segments of the portfolio whose loss ratios will significantly be increased by the new rate change.

Learning Objectives:

1. Learn how ML can help assess the rate change distribution after a tariff update
2. Understand the driving factors that lead to price disruptions in new premiums
3. Visualize the relationships between two alternative premiums and the loss ratios

Moderator: Gaetan Veilleux Senior Consulting Actuary, Pinnacle Actuarial Resources, Inc.

Speakers: Robert Zolla, Milliman
Guillaume Beraud-Sudreau, Chief Actuary & Co-founder, Akur8

Modeling

Concurrent Sessions 2, Breakout Room 3

□ M6: Using Multiple Modeling Techniques to Estimate First Floor Height

Level 1: No prior knowledge of the subject is assumed

This session will show how you can use multiple modeling methods within a single project to get the best solution. We will examine how multiple statistical and expert models are studied and how to use tradeoffs in choosing between them. We will also review the vast amount of data that is used to build and validate the model results.

Learning Objectives:

1. Identify an expert model, and understand when to use one
2. Learn techniques to slice data and determine weights for blending of models
3. Learn techniques to align model results to calibrate the final model

Moderator: Howard Kunst, Chief Actuary, CoreLogic

Speakers: Taylor Brown
Fabien Huard, Senior Leader, Science and Analytics, CoreLogic

Session Descriptions

Modeling

Concurrent Sessions 3, Breakout Room 1

□ M8: Dynamic Pricing: Evolving in a Changing Market with Advanced Analytics and Machine Learning

Level 1: No prior knowledge of the subject is assumed

The price your company charges for its products is fundamental to how it does business but determining pricing strategy is not always straightforward. It needs both intelligence and insight to make it effective, and then there are the extra complications that consumer behavior and markets are changing. New data sources and the accessibility of machine learning algorithms have raised the bar for expected analytics performance and the level of sophistication in automated decision making. At the same time, customer and distributors' demand for integrated, online and mobile technologies have grown significantly. In this session, we will cover case studies showing how advanced analytics can be used to enhance business decision making and pricing strategy.

Learning Objectives:

1. Understand the overall vision of the ideal end to end pricing process
2. Explain how cutting-edge analytics in an evolving world is necessary with today's pricing environment
3. Understand the importance of speed of execution in the pricing cycle

Moderator: Howard Kunst, Chief Actuary, CoreLogic

Speakers: Madeline Main, Manager, Willis Towers Watson
Scott Gibson, Manager, Willis Towers Watson

Product and Innovation

Concurrent Sessions 2, Breakout Room 1

□ PIE1: Operationalizing IoT initiatives

Level 1: No prior knowledge of the subject is assumed

As connected devices play an increasing role in everyday consumer behavior, insurers must rethink how they interact with and deliver products to policyholders. Join us for a practical exploration of the customer behaviors, products, channels and stakeholders shaping the new mobility ecosystem and its implications for the insurance industry.

Learning Objectives:

1. Overcome common barriers to IoT initiatives at organizations
2. Understand key differences in how to approach IoT data compared to more traditional sources
3. Anticipate and incorporate customer needs into program design

Moderator: Kiki Wang VP, Commercial Insurance UW Analytics Manager, Chubb,

Speakers: Greg Jacobs, Director of Product Management, IoT/Telematics, Verisk Analytics
Ryan Voge, Chief Actuary, Director Insurance Analytics, OnStar Insurance / General Motors

Session Descriptions

Product and Innovation

Concurrent Sessions 1, Breakout Room 1

☐ **PIE2: Are MGAs the Future of Underwriting?**

Level 1: No prior knowledge of the subject is assumed

This session will provide two actuarial perspectives on what MGAs are, how they work, and what the MGA space looks like in the United States. It will explore some situations where a carrier may consider delegating authority and the types of risk typically involved. Case studies of product innovation in alternative markets, oriented towards addressing the needs of the underserved, will be covered. Operational considerations related to MGAs, including compliance and technology, will also be discussed. The session will be useful to anyone interested in tapping into alternative markets, or simply learning how approaches used in alternative markets can apply in traditional ones.

Learning Objectives:

1. Identify key attributes of MGAs and the U.S. MGA market
2. Explain how MGAs can help address challenges associated with new or underserved markets
3. Identify operational considerations associated with maintaining and MGA relationship

Moderator: Jim Weiss, Vice President, Crum & Forster

Speakers: Denise Olson, Vice President, Programs Technical Director, US Middle Markets, Zurich North America

Lon Chang, Ascot Group

Product and Innovation

Concurrent Sessions 5, Breakout Room 3

☐ **PIE3: Ugly Side of Innovation**

Level 1: No prior knowledge of the subject is assumed

This session will explore less glamorous aspects of successful innovation within an organization. Presenters will discuss processes for generating and selecting ideas to pursue; reasonable balances of in-house development vs. reliance on outside data and technology providers; how to monitor, manage, and measure success during and after development; and developing the right tech stack to support all of the above. There will be brief presentations followed by interactive discussion.

Learning Objectives:

1. Select and deploy technologies that enable innovation
2. Evaluate and communicate whether an innovation initiative is effective
3. Improve idea flow and prioritize higher potential ideas

Moderator: Matt Carrier, Principal, Deloitte Consulting, LLP

Speakers: Christopher Cooksey, Senior Actuary, Data & Analytics, Guidewire Software
Kimberly Holmes, Chief Actuary, GRS, Liberty Mutual Insurance

Session Descriptions

Product and Innovation

Concurrent Sessions 6, Breakout Room 2

PIE4: Parametric Insurance: From Need to Solution

Level 2: General knowledge of the subject is assumed

Why/Who needs parametric insurance? What is critical to develop the product? This session will dive into how to find the need of parametric insurance product, and demonstrate product development process. Basis risk management will be discussed specifically in product design and pricing.

Learning Objectives:

1. Understand parametric insurance
2. Understand customer demand and needs in the market
3. Explore how to create a product

Moderator: Kim Ward, Managing Director and Owner, Xceedance

Speakers: Jonathan Charak, VP - Emerging Solutions Director, Zurich North America
Daniel Seyyedi, VP, Swiss Re

Product and Innovation

Concurrent Sessions 4, Breakout Room 3

PIE5: Incorporating Measures of Gender-Based Violence into ESG Frameworks

Level 1: No prior knowledge of the subject is assumed

Investments are negatively impacted by gender-based violence (GBV), and may actually increase incidences of GBV if they ignore it during the investing process. Despite the recent push for investing that incorporates environmental, social, and governance factors, also known as “ESG investing,” measures of GBV are currently not widely considered. During this session, the speakers will present their current findings from the USAID-funded project where they are exploring incorporating GBV into portfolio optimization and developing open-source tools for different types of investors. The long-term goal of the project is to create an economic incentive for governments and private sector to prevent and mitigate GBV, especially in developing economies.

Learning Objectives:

1. Create effective measures for incidence and prevention of GBV
2. Explain potential role of ESG investing in mitigating and preventing GBV
3. Discuss findings of recent USAID-funded project regarding incorporating GBV into portfolio optimization

Moderator: Mallika Bender, Actuarial Diversity, Equity & Inclusion, Casualty Actuarial Society

Speakers: Joshua Dobiak, Milliman Financial Risk Management, LLC
Lisa Gans, Senior Investment Advisor, DAI

Session Descriptions

Product and Innovation

Concurrent Sessions 7, Breakout Room 2

PIE6: How Actuaries Should Think about InsurTech

Level 1: No prior knowledge of the subject is assumed

There is significant potential for actuaries to serve as the bridge between the InsurTech industry and traditional insurers and/or serve as industry experts within InsurTech firms. With the ongoing emergence of InsurTech, many traditional insurance companies are looking to further invest in developing their own internal technology infrastructure and/or startup ventures. The session begins by providing a framework and information on the fundamentals of InsurTech, including background on the insurance value chain and the different technologies in use in the InsurTech space. It examines key drivers of this growth include technology trends such as wearable devices, digital customer experiences, technology supporting analytics and automation. Finally the sessions summarizes conversations with practitioners in the InsurTech space, many of whom saw the broad insurance industry knowledge of actuaries as something that could bring significant value to the InsurTech space.

Learning Objectives:

1. Identify types of problems InsTechs typically solve and how
2. Become a more effective participant in organizations' InsTech initiatives
3. Mitigate and learn from common setbacks seen in InsTech initiatives

Moderator: Joyce Hwu

Speakers: Kiki Wang, VP, Commercial Insurance UW Analytics Manager, Chubb
Carrie Kelley, Director, Willis Towers Watson

Product and Innovation

Concurrent Sessions 3, Breakout Room 2

PIE7: ESG and What it means for Actuaries

Level 2: General knowledge of the subject is assumed

The insurance industry plays an important role in supporting economic and social development, and insurers' innovations on the environmental, social, and governance (ESG) fronts can help build a more resilient, sustainable, and inclusive society. This session will have two distinct pieces - the first part will cover ESG and its impact on insurers' financial strength, and the second will cover examples of how ESG can be embedded to help shape underwriting and product strategy.

Learning Objectives:

1. Understand how the insurance industry can promote sustainable economic and social development
2. Explain how ESG factors may be viewed in financial contexts e.g. insurance credit ratings
3. Incorporate ESG considerations into underwriting and product design

Moderator: Shing Wu

Speakers: Andy Tran, Senior Vice President, Swiss Re America
Victor Bhagat, Associate Director, AM BEST

Session Descriptions

Product and Innovation

Concurrent Sessions 7, Breakout Room 3

PIE8: Semi-structured Data

Level 1: No prior knowledge of the subject is assumed

Semi-structured data can easily get lost in the debate between structured and unstructured data. Is this in-between an analysis enabler or a scale inhibitor? In this session we will provide a refresher on semi-structured data (formats and examples), explore business use cases including new data sources, illustrate simple techniques typically associated with semi-structure such as JSON encoding and string tokenization, and evaluate its overall utility in connection with structured and unstructured data.

Learning Objectives:

1. Explain pros and cons of different data interchange formats
2. Represent common actuarial constructs (e.g. triangles) as semi-structured data
3. Navigate common packages and functions used to work with semi-structured data

Moderator/Speaker: Jim Weiss, Vice President, Crum & Forster

Speaker: Khanh Luu, Supervising Actuary, AIG

Product and Innovation

Concurrent Sessions 3, Breakout Room 5

PIE9: Speed to Market and Product Cycle

Level 1: No prior knowledge of the subject is assumed

Launching a new insurance product or product enhancement has traditionally been a complex and time-consuming exercise. Thoughtful design of the pricing, underwriting, compliance, issuance, reinsurance, and other considerations may take a matter of months if not years – followed by significant effort and time to estimate the impact of the launch, and still more time to implement the changes. This session examines approaches insurers and InsurTechs are taking to expedite this process.

Learning Objectives:

1. Evolve from “waterfall project management” to “co-solutioning” approach to shepherding projects
2. Incorporate software development mindset to introduce efficiencies into everyday workflow
3. Create greater coding flexibility and “self-service” capabilities in an organization

Moderator: Jim Weiss, Vice President, Crum & Forster

Speakers: Claudine Modlin, VP of Pricing, Root Insurance Company
Olivier Brown, Oliver Wyman Actuarial Consulting
Sabrina Tan, Actuarial Consultant, Oliver Wyman Actuarial Consulting
Raphael Brissette, Oliver Wyman Actuarial Consulting

Session Descriptions

Ratemaking

Concurrent Sessions 1, Breakout Room 5

□ RM1: Through the Looking Glass(es): An Actuarial and Economic Look at the Workers Compensation System

Level 1: No prior knowledge of the subject is assumed

This session will cover a spectrum of workers compensation topics, including financial results, recent trends, and the impacts of COVID-19 pandemic, from both actuarial and economic perspectives. It will include a high-level recap of where the line has been and where it may be headed.

Learning Objectives:

1. Discuss a variety of workers compensation topics
2. Provide an overview of financial results, recent trends, and the impacts of COVID-19 pandemic
3. Discuss results from both actuarial and economic perspectives

Moderator/Speaker: Carolyn Wise, Associate Actuary, NCCI Holdings, Inc

Speaker: Patrick Coate, Economist, NCCI Holdings, Inc

Ratemaking

Concurrent Sessions 4, Breakout Room 2

□ RM10: COVID-19 Impact on Workers Compensation

Level 1: No prior knowledge of the subject is assumed

A panel of actuaries from across the country will discuss the characteristics of COVID-19 claims in workers' compensation. The panel will discuss topics including the distribution of claim and loss types, claim severities, claim settlement and other ratios for COVID-19 claims and how these measures vary by state.

Learning Objectives:

1. Understand early differences in claims patterns for COVID-19 claims relative to non-COVID-19 claims
2. Understand differences in patterns of COVID-19 claims across states

Moderator: Rebecca Williams

Speakers: Krystal Ross, Associate Executive Director & Chief Actuary, New Jersey Compensation Rating and Inspection Bureau

Carolyn Wise, Associate Actuary, NCCI Holdings, Inc

Laura Carstensen, Vice President, Actuarial Research, Workers Compensation Insurance Rating Bureau of CA

Nadege Bernard-Ahrendts, Practice Leader & Senior Actuary, NCCI Holdings, Inc

Session Descriptions

Ratemaking

Concurrent Sessions 6, Breakout Room 3

□ RM11: Intelligent Monitoring: Best Practices for Measuring and Reacting to the Market

Level 1: No prior knowledge of the subject is assumed

No matter the line of business, the need to measure the effectiveness of your pricing strategy is the market is ever present. The ability to quickly observe and react to market changes is becoming more important as the insurance landscape continues to quickly evolve. In this session, we will take a futuristic glimpse into how proactive business monitoring can be leveraged to quickly adjust underwriting criteria and inform pricing adjustments. Additionally, we will lay out a roadmap with practical steps insurers can take to ensure they are properly positioned to take full advantage of intelligent monitoring.

Learning Objectives:

1. Identify the types of metrics most critical for monitoring and the corresponding actions that can be taken base on the results
2. Understand the first few steps to creating an automated intelligent monitoring system
3. List the common challenges that reduce the value companies realize through monitoring

Moderator: Lijuan Zhang, Global Manager of Pricing and Portfolio Management, Individual Personal Insurance, AIG

Speakers: Drew Lawyer, Global Director, Business Solutions, Earnix, Ltd.
Aaron Wright, Director, Strategy, Earnix, Ltd.

Ratemaking

Concurrent Sessions 2, Breakout Room 5

□ RM12: The Price is Right: An Introduction to Pricing Novel Products and Competitive Analysis

Level 2: General knowledge of the subject is assumed

Whether you are pricing something that is new to you or new to the entire industry, what strategies and methods should you keep in mind when developing new rates and rating plans? In this session, we will discuss the advantages and disadvantages of different pricing methodologies that can be leveraged when developing new products. We will also discuss ways in which competitive analyses and other data can be leveraged during the pricing process.

Learning Objectives:

1. Identify the steps needed and methodologies employed to develop rates for a new product
2. Understand which competitor data can be leveraged to develop rates and rating plans

Moderator: Drew Groth

Speakers: Eric Krafcheck, Principal & Consulting Actuary, Milliman
Katherine Pipkorn, Consulting Actuary, Milliman

Session Descriptions

Ratemaking

Concurrent Sessions 6, Breakout Room 4

RM13: Property Pricing when Including Cat Perils

Level 2: General knowledge of the subject is assumed

While pricing for natural catastrophe exposed property insurance has many of the aspects of normal property pricing, the catastrophe element does add some challenges. For example, a company's risk appetite has a significant impact on how they price for catastrophe risk. This session will discuss the basic elements of catastrophe pricing, why cat models were developed and why they are important, and conclude with a discussion around capital and risk management and their relationship with pricing. Both speakers are members of the International Society of Catastrophe Managers (ISCM) and hold the joint ISCM/ICAS CCRMP credentials.

Learning Objectives:

1. Understand how a company's risk appetite can affect how it prices for catastrophe risk, and how that impacts portfolio risk management objectives
2. Explore why cat models have been created and why cat models are an important part of pricing for catastrophe exposed risk
3. Identify why understanding the nuances, strengths and weaknesses of catastrophe models are important, relating to how to use the models correctly to get the most out of them

Moderator/Speaker: Howard Kunst, Chief Actuary, CoreLogic

Speaker: David Keeton, Chief Pricing and Modeling Officer, Avondale Insurance Associates

Ratemaking

Concurrent Sessions 5, Breakout Room 4

RM2: Using Mathematical Models to Model Infectious Disease Transmission and Dynamics in the Insurance Industry

Level 1: No prior knowledge of the subject is assumed

The emergence and re-emergence of infectious diseases keeps reminding us of the importance of access to accurate tools to measure the potential risks we may take during large outbreaks and pandemics. Mathematical modeling of infectious disease transmission provides us with a tool to help understand the impact of pandemics in terms of the number of potential cases and deaths along with the variation of medical outcomes and their financial impact. In this session, we will discuss current pandemic-modeling techniques, including the role of the COVID-19 pandemic on our approach to modeling, along with some use cases in the insurance industry. We will also emphasize the importance of effective communication between modelers and decision-makers to optimize the value of pandemic modeling and risk estimation.

Learning Objectives:

1. Discuss current pandemic-modeling techniques
2. Emphasize the importance of effective communication between modelers and decision-makers
3. Identify the role of the COVID-19 pandemic on the approach to modeling

Moderator/Speaker: Narges Dorratoltaj, Principal Scientist, Senior Manager, AIR Worldwide

Speaker: Jim TeHennepe

Session Descriptions

Ratemaking

Concurrent Sessions 3, Breakout Room 3

RM5: Pricing the “New” Economy

Level 1: No prior knowledge of the subject is assumed

Discuss considerations pricing a new risk, leveraging our experience in the shared economy, including: challenges under a changing environment (eg COVID), tradeoffs of data credibility vs risk heterogeneity, macro vs sector-specific trends, renewal partnership & timeline planning, and more!

Learning Objectives:

1. Understand what actuaries consider when pricing a new industry
2. Explore important factors to consider under a changing environment i.e. COVID
3. Discover an actuary's role in securing and building strong partnerships, setting clear expectations for large account pricing and renewal, and engaging internal and external stakeholders to ensure mutual success

Moderator: Lin Xing, Chief Actuarial, Lyft, Inc.

Speakers: Binbin Xing, Senior Actuarial Manager, Lyft, Inc.
Paul Larick, Progressive Insurance Company

Session Descriptions

Ratemaking

Concurrent Sessions 1, Breakout Room 4

□ RM6: Territory Relativities using Bayesian MCMC

Level 2: General knowledge of the subject is assumed

This session will illustrate how Bayesian MCMC can be used for state level ratemaking where the actuary typically has limited data at hand to use in developing base rate level relativity indicated adjustments and some form of credibility weighting is necessary. The Bayesian MCMC method can be used both to temper the indications from the limited state level company data similar to how credibility weighting using the Buhlman least squares credibility weighting approach works and to blend information from outside the company's own state level experience to supplement that limited experience. The session will be set up as a case study where we will start with a traditional, one-way loss ratio approach to developing territorial relativity factor adjustments and then modify that example to incorporate the capabilities of Bayesian MCMC analysis using open-source software. The modifications to the starting traditional, one-way loss ratio approach will include:

- Inducing Buhlman least squares type credibility weighting on the loss ratio indicated changes to territorial relativities.
- Weighting countrywide development patterns with the state's own historical development patterns by treating the countrywide development patterns as a prior distribution to be modified by the company's own experience in that state.
- Weighting countrywide loss cost trend factor model results with the state's own loss cost trend experience by treating the countrywide loss cost trend model results as a prior to be modified by the company's own experience in that state.
- Using competitor base rate relativity factors relative to the company's own factors as explanatory variables to develop indicated territory base rate relativity adjustment factors.

Learning Objectives:

1. Understand the link Bayesian MCMC to credibility concepts
2. Understand the link Bayesian MCMC to regression models
3. Discover test competitor rate relativities as a guide to altering internal rate relativities

Moderator: Kathy Knudson, Milliman

Speaker: Michael Larsen, Retired

Session Descriptions

Ratemaking

Concurrent Sessions 7, Breakout Room 1

RM7: GBMs: The Real Impact of a Rate Change

Level 1: No prior knowledge of the subject is assumed

Prior to a rate change implementation, it is common for pricing actuaries, product managers and other insurance leaders to compare various rate scenarios and choose the one that best aligns with business objectives and regulatory considerations. However, to fully understand the impact of a rate change on a book of business, customer demand should be considered. This session will demonstrate how GBMs can be used to incorporate customer demand into a rate change decision-making framework.

This will be a dynamic and interactive session where the audience will be able to provide guidance on model design and rate impact selection to see how all these pieces fit together.

Learning Objectives:

1. Understand the basics of GBMs
2. Understand the variables one might consider when comparing rate change scenarios
3. Understand how demand considerations can be incorporated into the rate change decision-making process through the use of GBMs

Moderator: Kathy Knudson, Milliman

Speakers: Michael McPhail, Willis Towers Watson
Serhat Guven, Managing Director, Willis Towers Watson

Ratemaking

Concurrent Sessions 2, Breakout Room 4

RM9: Alternatives to the Tweedie Distribution in GLM

Level 2: General knowledge of the subject is assumed

This session will have two presentations discussing possible alternative to the Tweedie variance structure when modeling pure premium in a Generalized Linear Model (GLM), including one presentation that was a recent response to the CAS “call for essays on ratemaking.”

Topics such as selecting variance structures and comparing estimating equations will be discussed.

Learning Objectives:

1. Understand the variance structure choice in GLM (e.g., Tweedie, Poisson, Negative Binomial)
2. Review criteria for testing and selecting the variance structure

Moderator: Kathy Knudson, Milliman

Speakers: David Clark, Senior Actuary, Munich Re America
Josh Brady, Assistant Vice President, Cincinnati Insurance Companies

Session Descriptions

Regulation and Professionalism

Concurrent Sessions 7, Breakout Room 4

□ RP1: Unfair Discrimination: How will New Legislation in Colorado Influence the Industry Approach to Potential Bias in Insurance?

Level 1: No prior knowledge of the subject is assumed

The General Assembly of the State of Colorado enacted legislation to “ensure that all Colorado residents have fair and equitable access to insurance products” by prohibiting unfair discrimination on the basis of several protected class characteristics. In doing so, they laid out a new definition of “unfair discrimination” which regulators in the state and insurance industry participants are now working to bring to life. This session will delve into some of the juicy questions that actuaries and insurance industry professionals must answer to comply with this new legislation. We will also explore the implications of this legislation on the broader insurance industry and regulatory debate on race and insurance pricing.

Learning Objectives:

1. Understand the recent legislation in Colorado regarding “unfair discrimination” in insurance practices
2. Review the spectrum of perspectives held by insurance industry stakeholders
3. Explore potential approaches to comply with the Colorado legislation, their benefits and implication

Moderator/Speaker: Eric Krafcheck, Principal & Consulting Actuary, Milliman

Speakers: Dorothy Andrews, National Association of Insurance Commissioners
Peter Kochenburger, Executive Director, Insurance Law LL.M. Program, University of Connecticut

Regulation and Professionalism

Concurrent Sessions 3, Breakout Room 4

□ RP2: Regulatory and Legislative Updates

Level 1: No prior knowledge of the subject is assumed

“Regulatory Updates” NAIC speaker on “key NAIC regulatory discussions” and overview of states other than Washington and Florida/moderator + Washington and Florida Legislation (including Steve Roddenbury for FL-SB76- property insurance reform – to bring down costs related to attorney involvement + updates from legislative session, still working on Washington Speaker- emergency order to stop using credit rating; companies had to remove from all rating plans by a date certain – still working through “normal” channels, NC – innovation in Insurance for Blockchain and other Insurtech innovations)

Learning Objectives:

1. Understand the current state of the regulatory environment - wider trends
2. Understand the current regulatory landscape in WA
3. Understand the current regulatory landscape in FL

Moderator: Klayton Southwood, Senior Director, Willis Towers Watson

Speakers: Kenton Brine, President, Northwest Insurance Council
J. Steve Roddenberry, Special Consultant, Pennington, PA
Andrew Kirkner, AVP - State Affairs, National Association of Mutual Insurance Companies

Session Descriptions

Regulation and Professionalism

Concurrent Sessions 1, Breakout Room 3

□ RP3: Risk-Based Capital Formula Overview and Upcoming Changes

Level 1: No prior knowledge of the subject is assumed

RBC is a tool regulators developed to help identify insurers whose capital is inadequate for the risks they assume. This section provides a brief overview of Property and Casualty Risk-Based Capital.

Learning Objectives:

1. Understand Different RBC components
2. Identify the differences in the RBC action levels
3. Understand the Upcoming Changes of the Property and Casualty Risk-Based Capital formula

Moderator/Speaker: Eva Yeung

Speaker: Thomas Botsko, Chief Property and Casualty Actuary, Ohio Department of Insurance

Regulation and Professionalism

Concurrent Sessions 5, Breakout Room 2

□ RP4: Rate Model: How to Improve Speed to Market

Level 2: General knowledge of the subject is assumed

This session will help insurers expedite the regulatory review process of state rate filings that contain advanced statistical techniques in rate models. Insurers are often unsure what to include in regulatory filings and how to describe the work performed to make sure it is understood by the regulator reviewing the work. The NAIC Model Review Team will provide some insights into common issues we encounter in reviewing regulatory rate filings that contain advanced statistical models to help insurers avoid multiple submissions that lengthen the time to get a product to market. The attendees will gain an understanding of good, bad, and ugly approaches to designing regulatory filing submissions that contain advanced statistical models, with the goal of improving their filing submissions. This session will discuss professional documentation and applicable standards and should qualify for professionalism continuing education credits.

Learning Objectives:

1. Describe model data and provide rationales for third party data and model variables
2. Identify the essential components to include in a rate filing submission that contains advanced models based on actuarial standards of practice
3. Understand the level of analytical detail expected in a regulatory filing submission

Moderator/Speaker: Kris DeFrain, Director, Research and Actuarial Services, National Association of Insurance Commissioners

Speakers: Dorothy Andrews, National Association of Insurance Commissioners
Samuel Kloese, Property/Casualty Rate Modeling Actuary, National Association of Insurance Commissioners
Roberto Perez, P/C Rate Modeling Actuary, National Association of Insurance Commissioners

Session Descriptions

Regulation and Professionalism

Concurrent Sessions 5, Breakout Room 5

□ RP5: Professionalism 101+

Level 1: No prior knowledge of the subject is assumed

Join the Committee on Professionalism Education as we go “back to basics” and talk about Professionalism Resources! We will play a Kahoot game, and along the way highlight professionalism resources available for actuaries. We will also highlight what you need to know from the newly update US Qualification Standards.

Learning Objectives:

1. Review resources available for Professionalism Education.
2. Understand updates to the recently released Qualification Standards.
3. Play a game of Kahoot to contribute to what everyone needs to know about Professionalism.

Moderator/Speaker: Rebecca Williams, Actuary, North Carolina Rate Bureau

Speaker: Michael Chen, Manager, Willis Towers Watson

Regulation and Professionalism

Concurrent Sessions 2, Breakout Room 2

□ RP6: Using ASOPs to Model

Level 2: General knowledge of the subject is assumed

This session will review ASOP 38, ‘Catastrophe Modeling’, ASOP 56, ‘Modeling’, through a discussion among the panelists, and through audience participation.

Learning Objectives:

1. Learn to properly evaluate and select the catastrophe models according to the ASOPs when performing an actuarial service or assignment.

Moderator/Speaker: Russ Leone, Actuarial Supervisor, Texas Farm Bureau Insurance Companies

Speakers: Andrew Dalgaard, Actuary, Allstate Insurance Company

Todd Hess, Head Risk Management P&C Reinsurance Americas, Swiss Re

Session Descriptions

Regulation and Professionalism

Concurrent Sessions 4, Breakout Room 1

□ RP7: Inconceivable! Professionalism Scenarios

Level 2: General knowledge of the subject is assumed

Hello. My name is Credentialed Actuary. You joined our session. Prepare to participate! Whether building predictive models, utilizing them as inputs to the pricing decision-making process, or supporting them in rate filings, actuaries are often asked for their opinions on issues that relate to professional ethics. We'll have fun storming the castle and exploring how the Actuarial Standards of Practice, Statement of Principles, and Code of Professional Conduct apply to refreshed pricing and predictive modeling scenarios via polling, Q&A, and audience discussion. You want to join our grand adventure? As you wish!

Learning Objectives:

1. Identify professionalism implications of new pricing and modeling practices
2. Recommend solutions to conflicts between emerging practice and professional obligations
3. Identify how actuarial professionalism standards can provide guidance when faced with ethical dilemmas in pricing and modeling

Moderator/Speaker: Dereck Tanaka, Actuary, Travelers

Speakers: Shawn Balthazar, Manager, FCAS, Willis Towers Watson
Helen Zhao, Manager, Willis Towers Watson