Public Entity Risk Symposium

October 11-12, 2023 Denver, Colorado



Slides Included in This Document



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Navigating an Uncertain Environment: 2024 Strategic Compensation Planning

Greg McNutt Principal, Compensation Consultant Mercer



Contents



Compensation in the Age of Disruption

Predictions for how compensation will evolve over the next 5 years



What to expect for 2024

Insights based on Mercer's US Compensation Planning Survey and Insights from Mercer's Benchmark Database



How organizations are responding for 2024

Strategies for how organizations across all industries can increase competitiveness in a tight labor market





Compensation in the Age of Disruption



A lot has been changing over the last few years

Public entities now compete across many sectors for talent



Rapid advancement of technology and Artificial Intelligence



Heightened focus on pay equity, transparency and ESG



Rapidly increasing cost of living due to high inflation



Growth of gig and contract workforce



Shift towards skills-based talent models





Generational shift in workplace expectations



Munich RE

What can Total Compensation Leaders expect in the next 5 years?



5 Predictions for the Future of Compensation



Integrating benchmark data with economic, labor market and skills insights for long-term, databacked compensation planning

Algorithms to drive pay decisions based on a fixed and fully transparent set of inputs - free from manager bias

Performance rewarded through skill-based progression combined with real-time recognition and incentive pay

Segmented talent strategies for investing in high demand hourly workforces, with greater influence on skills and cost of living

to strategic asset

The contingent workforce will become a permanent fixture in the workforce, and HR will own attraction, retention and cost strategies



What to expect for 2024

But what's influencing compensation practices today? The labor market is still hot, but cooling



The labor market is rebalancing in a healthy way

Metrics like job growth and hiring are returning to pre-pandemic levels without significant increases in unemployment

Quit rates have returned to pre-pandemic levels at around 2.3% of workers per month

rebalancing

Despite media headlines, layoffs have remained largely isolated to tech, and have remained below pre-pandemic levels

Labor market tightness likely to remain

Labor force participation remains below prepandemic levels at 62.8%, and over the next 10 years the workforce is expected to grow only by 0.5%

Job Openings to Unemployed Workers



Source: Bureau of Labor Statistics - September 2023 (Data reported through July 2023)

What's happening now related to compensation?



Projected increase budgets for 2024 are coming down and public entities are catching up to other sectors



Significant off cycle increases persist, but appear to have slowed



The market is moving faster in some segments versus others



Your employees know a lot more than you think



2024 budget projections remain close to 2023 Munich RE Should the labor market continue to soften, projections may come down as we move towards end of year



Source: Mercer US Compensation Planning Surveys, Average Increases (including companies reporting 0 increases). Actuals collected March; 2024 projections collected in August 2023

Across industries, healthcare lags while services and life sciences lead

2024 Merit and Total Salary Increase Averages *August 2023 Projections*



Source: 2023 US Compensation Planning Survey, August Edition, Average Increases (including companies reporting 0 increases).



Significant base salary increases continue to happen outside of the annual increase process, but appear to be slowing



Total Increase Budgets vs Average Base Pay Change Same incumbent, same job Budget Budget Gap Para-Professional Salaried While average base Executive pay moved 5-6%Actual 6 7% from 2022 to 2023, Actual 5.8% employers reported an Actual 5.7% Actual 5 2% Actual 5 1% Actual 5.0% average base pay 2.9% 1.7% 1.6% change per employee 1.3% 1.4% 1.4% of 3.6% for the first 6 months of 2023, suggesting that off 4.1% 4 1% 3.8% 3.8% 3.8% 3.6% cycle increases declined after 2022 2022 2023 2022 2023 2022 2023

average of managers (5.4%) and professionals (4.9%). 2023 salaried non-executive represents an average of managers (5.9%) and professionals (5.4%).

Legislation and market practices continue to accelerate on pay transparency



01

Today

An increasing number of states have adopted pay transparency legislation



CO Looking ahead

Increasing numbers of employers are looking to share more beyond legislative requirements 63%



Despite employer's transparency, employees know a lot



Only 1 in 4 employers openly share pay ranges – but the majority of employees say they know their range

52% of employers say they communicate their salary ranges – however,

68%

of employees say their manager or employer provided them with their pay range

% of Employers communicating pay ranges to employees



Source: Mercer's 2023 US Compensation Planning Survey – August 2023 edition



Most employees (61%) say they have researched their pay ranges through employer job postings – 7 out of 10 for employees below age 45



The majority of Gen Z employees (57%) say they share their compensation information with colleagues – compared to 1 out of 4 over age 55

Pay transparency is critical to both attraction and retention

Today, only 3 in 10 employers say that they've embedded transparency into their talent philosophy – however, it's critical to perceptions of fair pay

Employees who believe they are paid fairly:



2x more likely to say they understand how their organization determines their compensation



2x more likely to say their manager/employer provides them with their pay range



85% more engaged



60% more committed to their organization

Candidates are far less likely to apply without access to pay ranges

Munich RE



Nearly half of employees say they are unlikely to apply if compensation information is not available in the job posting

Source: Mercer's 2023-2024 US Inside Employees' Minds Survey of more than 4,000 US employees; preliminary results

Key Takeaways Actions you can take for 2024









Ditch the copycat budgets

Set your budget based on your unique needs, considering attraction/ retention state and pay equity and competitiveness – and a one-size fits all may not be the right answer

Make sure to "right size"

Ensure pay levels align to your compensation strategy by analyzing and adjusting pay levels for compression and stagnation, given heavy use of new hire premiums, minimum wage hikes and off cycle compensation increases

Revamp hourly pay strategies

Develop a robust strategy for hourly compensation given tight labor market elevated pressures, moving beyond traditional job-based benchmarking to reflect true talent markets



Identify required skills for jobs in order to build the foundation for more agile compensation practices that drive alignment with market movement



Unleash the truth

Embed pay transparency into talent and reward strategies to improve perceptions around the fairness of pay – and ultimately improve attraction, retention and engagement



3

How Organizations are Responding for 2024

Most critical for success in the US in 2024



For public entities/non-for-profits 2024 will be a defining year. Every sector will need ambitious transformation plans as they come face-to-face with new realities. HR will need to maintain energy and momentum to ready itself and the business for what lies ahead. Here's how US organizations ranked 2023 priorities:



- Upholding diversity, equity and inclusion
- Addressing workforce fatigue
- Impacting total well-being outcomes
 - Focusing on company culture development



Enabling new ways of working (remote, hybrid, gig)

Source: Mercer's Global Talent Trends Pulse Survey of HR Leaders; US Results



The challenge for 2024: How are companies building resilient, relatable and ready organizations?



reset for relevance	work in partnership	deliver on total well-being	build for employability	harness collective energy
Build resilience by leading with values and an adaptive design	Create equitable, transparent and rewarding partnerships	Nurture a healthy workforce with benefits that matter	Meet future work needs with a skills-based organization	Unlock potential with human- centered work environments



Building a resilient, relatable and ready organization will be even more critical this year

US organizations will need to reset for relevance by aligning with employee values

Organizations have continued to make progress on ESG – Aligning with employee values. Though 2023 significant gaps remain for US employers around **living wages**, social justice and **reproductive rights**



Employee voice: How important is it to you that your employer clearly and strongly supports the following through internal/external statements and tangible actions?¹

Company view: Which of the following does your organization strongly support, with demonstrated internal or external statements, reporting and/or tangible actions?²

Source: 1. Mercer's 2022 Inside Employees' Minds Study; 2. 2023 Global Talent Trends Pulse Survey of HR Leaders; 3. Mercer's 2022 US Compensation Planning Survey – August Edition

US organizations are working in partnership to stay competitive in a tight talent market As the US remains in a tight labor market, employers continue to enhance total

As the US remains in a tight labor market, employers continue to enhance total rewards, aligning offerings with employee values



What employees want¹



Better Pay



Better Flexibility and Work-Life Balance



Better Healthcare Benefits



Better Retirement Benefits

How organizations are responding

51% of organizations say they will be investing in 2023 to rethink their compensation philosophy and implement new practices²

57% of organizations have, or are considering, expanding the types of flexibility they offer³

70% of organizations say they are enhancing health and benefit offerings in 2023⁴

55% of organizations say they are investing in financial wellness programs that increase long-term financial security²

Source: 1. Mercer's 2022 Inside Employees' Minds Study; 2. 2023 Global Talent Trends Pulse Survey of HR Leaders; 3. Mercer's US 2022 Flexible Policies and Practices Survey, employers with >500 Employees 4. Mercer's Health and Benefits Strategies for 2023 Survey – Results for Employees with >500 Employees

US organizations can deliver on total well-being by focusing on the work and benefits Half of employees (51%) say they **feel exhausted on a typical day at work**¹ – Yet addressing workforce fatigue is the top area US employer say it's been difficult to make



What do employees say will do the most to reduce burnout and improve mental health?¹

#1

Reduced workload

progress²

#2

Enhanced employee assistance program (EAP)

#3 Access to mental health apps How are organizations responding?

Focusing on the work

40% say they will design work with well-being in mind (e.g., realistic workloads, nomeeting days, reduced complexity, positive work environment, etc.)²

Expanding Access to Behavioral Health

67% say they will provide enhanced EAP and 62% say they are adding on-line resources (apps, articles, classes, etc.)³

Destigmatizing and steering to care

35% plan to provide manager training, 26% say they will provide employee training, and 25% say they are conducting a communications campaign³

Source: 1. Mercer's 2022 Inside Employees' Minds Study; 2. 2023 Global Talent Trends Pulse Survey of HR Leaders; 4. Mercer's Health and Benefits Strategies for 2023 Survey – Results for Employees with >500 Employees

US organizations are building for employability to meet current and future skill needs

The majority of US leaders (56%) say their talent model is sufficiently agile to pivot talent from one area to another, yet

65%

Of US leaders say they are planning for reductions in force (RIFs) in 2023

...and still

48%

Of US leaders are also increasing their hiring budget

Source: Mercer's CEO/CFO Business Climate Global Research, US Results

The volatility in the labor market – Layoffs while also increasing hiring – Demonstrates the need and opportunity for skills-based talent models – yet many organizations are just getting started.

Where are US organizations on their journey today?

Knowing what skills we have in our workforce today	50%	39% 5 <mark>%6</mark> %
Strategic workforce plans that quantify skill gaps in addition to headcount needs	56%	26% 2 <mark>%16%</mark>
Differentiating between skills which can be developed internally and which need to be bought	43%	41% 4 <mark>%2%</mark>
Ability to adjust internal pay based on the changing value of skills	39%	38% 4 <mark>%</mark> 19%
Just starting ■ Have solution:	s Advanced I	Not on our agenda

Source: 2023 Global Talent Trends Pulse Survey of HR Leaders





US organizations harness collective energy to drive humancentered transformation

The HR function remains a linchpin to success of the organization's transformation agenda.

How is HR freeing up capacity to drive the transformation agenda?



2

Maturing the HR Operating Model

77% of high-performing HR organizations leverage a model with three core elements: HRBP, COEs, and Shared Services

Investing in HR Technology

Nearly 70% of HR leaders do not think their function is staffed adequately and/or sourced with the right mix of HCM tech (58%)

Upskilling to bridge the HR talent gap

Skilled HR talent has become scarce – And high performing organizations are 3.5x more likely to invest in HR skill development

Source: Mercer's HR Operating Model Survey, US Results



Over 90% of HR leaders are concerned about executing on the 2023 transformation agenda.

Top challenges to transformation:

- Too many priorities that distract our people (56%)
- Employee exhaustion (49%)
- Insufficient budget (34%)

Source: 2023 Global Talent Trends Pulse Survey of HR Leaders

Relatable organizations will win out in changing times How ready is your organization for what's next?



How will you build resilience & agility into your work operating systems?

16	

This is a moment of profound opportunity: To pick up the tools of empathy learned and honed during the pandemic period and carve a new way of partnering that is **more resilient**, **sustainable and attuned to the new shape of work**.



Leading organizations are redefining how they interact with their workforce and contribute to society. Our Global Talent Trends research shows that **Relatable Organizations** have five things in common. They are:

- 1. Constantly resetting for relevance
- 2. Figuring out new ways to work in partnership
- 3. Delivering on total well-being outcomes
- 4. Building for employability
- 5. Harnessing collective energy to drive transformative change



For more insights and recommendations to make progress this year, visit <u>www.mercer.com/global-talent-trends</u>

Drivers of Atlantic Hurricane Activity

Phil Klotzbach

Department of Atmospheric Science Colorado State University







Proposed New Hurricane Categorization Scale

• Trends in Hurricane Activity

• 2023 Atlantic Hurricane Season Discussion

Proposed New Hurricane Categorization Scale



Hurricane Katrina (2005) – Cat. 3 125 mph, 920 hPa



- Average 50 kt wind radii: ~105 nm
- Maximum Storm Surge: ~28 ft

Hurricane Charley (2004) – Cat. 4 150 mph, 941 hPa



- Average 50 kt wind radii: ~35 nm
- Maximum Storm Surge: ~7 ft

1926 Great Miami Hurricane (145 mph winds, 930 hPa) – Cat. 4 Munich RE







US Coastal Population Change Since 1900





Steve Bowen (Gallagher Re)

U.S. Coastal Population Net Change Since 1900

Data: U.S. Census Bureau Graphic & Analysis: Aon (Catastrophe Insight)

US Housing Units by County (Change since 1950)





U.S. Housing Units by County Change Since 1950

Data: U.S. Census Bureau Graphic & Analysis: Aon (Catastrophe Insight)

<1,000 1,000 to 10,000 10,000 to 100,000 100,000 to 250,000 250,000 to 500,000 500,000 to 1 million >1 million

Steve Bowen (Gallagher Re)

Miami-Dade County Population Explosion since 1926



1926

Miami-Dade County Population: ~100,000



Miami-Dade County Population: ~2.7 Million

2020



1926 Great Miami Hurricane - >\$200 Billion Economic Damage in 2020

- Weinkle, J. et al. (2018). Normalized hurricane damage in the continental United States 1900–2017. Nature Sustainability 1(12):808-813.
- Klotzbach, P. J., Bowen, S. G., Pielke, R., Jr., & Bell, M. M. (2018). Continental U.S. Hurricane Landfall Frequency and Associated Damage: Observations and Future Risks, Bulletin of the American Meteorological Society, 99(7), 1359-1376.

Continental US Relationship between Wind and Damage (2007-2022)





Continental US Relationship between Pressure and Damage (2007-2022)





Continental US Relationship between Wind and Damage (1900-2022)




Continental US Relationship between Pressure and Damage (1900-2022)





Measuring Wind is Hard!!





Georgia to Maine Relationship between Wind and Damage (1900-2022)





Georgia to Maine Relationship between Pressure and Damage (1900-2022)





Saffir-Simpson Scale (Includes Proposed Pressure Addition)



Category	V _{max} (kt)	MSLP (hPa)
1	64-82 (52%)	976-990 (55%)
2	83-95 (31%)	961-975 (32%)
3	96-112 (21%)	946-960 (20%)
4	113-136 (13%)	926-945 (12%)
5	>=137 (4%)	<=925 (4%)

Continental US Major Hurricanes Using Wind Definition (1999-2022)





Continental US Major Hurricanes Using Pressure Definition (1999-2022)





Hurricane Katrina: Category 3 by Wind, Category 5 by Pressure





Storm Surge Inundation from Hurricane Katrina (2005)



Hurricane Katrina Peak Storm Surge Inundation Mapping



Turnipseed et al. (2007)

Trends in Global Tropical Cyclone Activity: 1990-2021

Co-authors: Kim Wood*, Carl Schreck, Steve Bowen, Christina Patricola, Michael Bell

*Wood was co-lead author



Published in February 2022 in Geophysical Research Letters: https://doi.org/10.1029/2021GL095774



Global Named Storms





Short-Lived Named Storms (<=2 Days)





Atlantic Short-Lived Named Storms (<=2 Days)





Technological Improvements for Monitoring Tropical Storms and Hurricanes





Global Hurricanes/Typhoons









Global Cat. 4-5 Hurricane Number (>=130 mph winds)





Trend Towards More La Niña-Like Environment since 1990





Continental US Losses (1900-2022) – Adjusted for Inflation





Normalized Continental US Losses (1900-2022)





Observed Continental US Landfalling Hurricane Activity (1900-2022)





Observed Continental US Landfalling Major Hurricane Activity (1900-2022)









Observed Sea Level Change (1880-2020)





Projected Increase in Heavy Rainfall Events





Emanuel et al. (2017)

Late 21st Century Projections of Global Hurricane Intensity





CSU 2023 Atlantic Seasonal Hurricane Forecast (August 3 Prediction)



Forecast Parameter	CSU Forecast	1991–2020 Average	
Named Storms (NS)	18	14.4	
Named Storm Days (NSD)	90	69.4	
Hurricanes (H)	9	7.2	
Hurricane Days (HD)	35	27.0	
Major Hurricanes (MH)	4	3.2	
Major Hurricane Days (MHD)	9	7.4	
Accumulated Cyclone Energy (ACE)	160	123	
ACE West of 60°W	82	73	
Net Tropical Cyclone Activity (NTC)	170	135	

2023 Observed Parameters (Through October 8)



			2023 % of 1991-2020
Forecast Parameter	2023 Observed	1991-2020 Average	Average
Named Storms (NS)	18	11.8	153%
Named Storm Days (NSD)	86.75	57.5	151%
Hurricanes (H)	6	5.7	105%
Hurricane Days (HD)	25.50	22.5	113%
Major Hurricanes (MH)	3	2.6	115%
Major Hurricane Days (MHD)	7.75	6.5	119%
Accumulated Cyclone Energy (ACE)	129	103	125%

CSU Atlantic Seasonal Hurricane Forecasts for 2023



Forecast Parameter	August 3 Forecast	July 6 Forecast	June 1 Forecast	April 13 Forecast	1991–2020 Average
Named Storms (NS)	18	18	15	13	14.4
Named Storm Days (NSD)	90	90	60	55	69.4
Hurricanes (H)	9	9	7	6	7.2
Hurricane Days (HD)	35	35	30	25	27.0
Major Hurricanes (MH)	4	4	3	2	3.2
Major Hurricane Days (MHD)	9	9	7	5	9
Accumulated Cyclone Energy (ACE)	160	160	125	100	123
ACE West of 60°W	82	82	70	55	78

Typical Sea Surface Temperature Anomalies Observed in El Niño vs. La Niña







Current Global Sea Surface Temperature Anomalies





weathermodels.com

Current Pacific Ocean Sea Surface Temperature Anomalies



120°W 100°E 120°E 140°E 100°W 160°E 180° 160°W 140°W 80°W 40°N 20°N 0 ° 20°5 ⁴⁰° 180° 140°W 100°E 120°E 140°E 160°E 160°W 120°W 100°W 80°W -0.2 0.2 No data Ice -2 -10 1 2 3 5 °C -5 -3 4

NOAA Coral Reef Watch Daily 5km SST Anomalies (v3.1) 7 Oct 2023

Model Forecasts for El Niño

Model Predictions of ENSO from Sep 2023





Highcharts.com

Normal El Niño Conditions



El Niño conditions



NOAA Climate.gov

August-September Correlation between Nino 3.4 and Sea Level Pressure




August – September 2023 Sea Level Pressures

-2.6 -2.2 -1.8 -1.4 -1 -0.6 -0.2 0.2

-3





0.6

NCEP/NCAR Reanalysis

Public Entity Risk Symposium

2.2

1.8

1.4

2.6

3

Observed Recent Zonal Vertical Wind Shear Anomalies





8 10 12 14 16 18 20 22 24 2 4 6

Historical relationship between August-September ENSO and western Atlantic vertical wind shear





Current North Atlantic Sea Surface Temperature Anomalies



0.25° NCEP OISST Sea Surface Temperature Anomaly [SST, °C] 14-Day Average 24SEP2023 --> 07OCT2023 30-year Climatology 1991-2020

weathermodels.com



Above-Normal Atlantic Hurricane Season





Hurricane Idalia





Hurricane Idalia Notable Statistics



- Strongest hurricane (125 mph max winds) to make landfall in the Big Bend of Florida since 1896
- ~ \$3 billion USD in damage
- 4 fatalities

Florida Major Hurricane Landfalls since 1851





Florida: Highest Landfall Winds

Winds	Year	Storm Name	MSLP
185 mph	1935	Labor Day	892 mb
165 mph	1992	Andrew	922 mb
160 mph	2018	Michael	919 mb
150 mph	2022	lan	941 mb
	2004	Charley	941 mb
	1919	Florida Keys	927 mb
145 mph	1960	Donna	930 mb
	1928	Lake Okeechobee	929 mb
	1926	Great Miami	930 mb
130 mph	2017	Irma	931 mb
	1950	King	955 mb
	1949	Delray Beach	954 mb
	1948	Easy	940 mb
	1947	Fort Lauderdale	943 mb
	1945	Homestead	949 mb
125 mph	2023	Idalia	949 mb
	1975	Eloise	955 mb
	1933	Unnamed	948 mb
	1896	Cedar Key	960 mb
	1888	Louisiana	945 mb
	1882	Unnamed	949 mb

Atlantic Hurricane and Tropical Storm Activity Based on data from 1944-2020







Seasonal Hurricane Forecast Compilation Website



http://www.seasonalhurricanepredictions.org













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Twitter (X): @philklotzbach

Contemporary Challenges for Law Enforcement

Michael Ranalli, Program Manager, Lexipol







- 1. Accreditation in Law Enforcement National Trends
- 2. Recruiting and Retention Challenges What Agencies Are Doing
- **3.** Body Worn Cameras

What Every Risk Manager Should Know

Who are these accrediting bodies?



Accreditation is the **process** of receiving **third-party validation** that law enforcement is meeting **best practices in policing**. It involves adopting **policies, procedures and training practices** to demonstrate **accountability** to the highest standards of service **excellence**.

Who are these accrediting bodies?







National Accrediting Bodies



Around 30 states have created their own state-level accrediting bodies

Why is accreditation important for law enforcement?





Strengthen community relationships through accountability and transparency



Reduce risk by demonstrating adherence to best practices



Enhance professionalism with training built on high standards



Reduce costs through lowered premiums and operational efficiencies



Achieve operational and administrative goals with uniform directives

How Does An Agency Become Accredited:



5-Step Process



ENROLLMENT For each accrediting body, there is an enrollment process where agencies choose accreditation program, review requirements, pay fee, and submit application. Accrediting bodies sometimes offer training to newly assigned accreditation managers to help them understand the specific accreditation process and what is required.

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#### SELF-ASSESSMENT

Each accrediting body has a self-assessment phase, where departments conduct a thorough internal review of policies and practices against accreditation standards.

#### PROOFS OF COMPLIANCE

When the agency feels they can demonstrate compliance with a particular standard, they gather compliance files.



#### ONSITE/FINAL ASSESSMENT

Trained assessors from the accrediting body conduct an onsite assessment and provide a report detailing the findings and recommendations for improvement. Based on the report, the accrediting body will make a decision on whether to grant accreditation.



#### REACCREDITATION

Once accredited, the agency must maintain compliance with the standards on an ongoing basis and undergo periodic reassessments to maintain its accreditation status. Most accrediting bodies re-accredit every two to three years.

### **Recruiting and Retention**

Challenges

Lexipol Survey: Stressed and Short Staffed: Challenges Facing First Responders and the Impact on Community Safety





### **Recruiting and Retention**

Challenges

#### POLICE OFFICERS





### **Recruiting and Retention**

### Challenges

- Suicide Rates Exceed LODDs
- Public Criticism
- Media Attention
- Loss of Qualified Immunity
- Increased Legislation
- Lack of Applicants





Public E

### Wellness Programs



### Barriers to Getting Help



Sources: Fraternal Order of Police, International Association of Fire Fighters

#### Public Entity Risk Symposium

### A New Approach

### Check your Culture

- My way or the highway??
- No more micro-management
- Open discussions From Leaders on Wellness/Peer Support
- Creative recruiting strategies
  - Focus on service, making a difference Personal stories
  - Review dress code
  - Review personal appearance standards (tattoos, hair style)
  - Flexibility in shift work when allowed under CBA's





### Recruiting and Retention Challenges Does Video Play a Role?

since 2020 – and 52% say it has had an impact on retention







# Video: Conclusive Evidence? Body Worn Cameras



### What did the video show?

- Does the video accurately depict what was happening within the field of the recording?
- Does the video accurately depict the historical truth or the narrative truth of the incident?
- Is the video sufficient to prove all the issues of fact that may exist?
- Has the video been altered either intentionally or unintentionally?
- Does the viewer have proper context?





### Video review





### Did that make a difference?







### Must take human performance factors into consideration



#### Your members should:

- Not jump to conclusions and make premature statements
- Understand the strengths and weaknesses of video
- Video is everywhere assume more versions of event

#### Ask:

- Do I know everything about this video?
- What else do I need to know about this video to help me understand the event?
- Not create flawed narratives that can irreparably damage a case





Please refer to the below links for more information on Lexipol's Law Enforcement State Accreditation Service

**Accreditation One Sheet** 

Importance of Accreditation Video by Gordon Graham

**Accreditation on Lexipol Website** 

**Accreditation Explainer** 

Responding to Challenges in a Volatile, Uncertain, Complex and Ambiguous Environment Speaker Name Speaker Title







### Objectives Here's What I Hope to Do Today



- Identify the complexity of the decision making environment;
- Recognize that not all problems are the same;
- Identify strategies for dealing complex problems

### Mobile Cellular Subscriptions (per 100 People), 1960-2014





Source: International Telecommunication Union, World Telecommunication/ICT Development Report and database

### Cost of DNA Sequencing, per Genome





### Consumer Cost of Data per Megabyte and Data Speed





Note: Data speed indicates the maximum downlink speed, not average observed speeds. The average observed speeds depend on many factors, including infrastructure, subscriber density, and device hardware and software.

Courtesy of the Boston Consulting Group (BCG), from its report "The Mobile Revolution: How Mobile Technologies Drive a Trillion-Dollar Impact" (2015). Sources: Cisco Visual Networking Index; International Telecommunication Union; IE Market Research; Motorola; Deutsche Bank; Qualcomm
# Utility Patent Grants In Biotech, 1963-2014





Source: U.S. Patent and Trademark Office

# Utility Patent Grants In Biotech, 1963-2014





Source: U.S. Patent and Trademark Office



Public Entity Risk Symposium



It took centuries for the longbow to go from development into military use in Europe in the late thirteenth century . . . But by 1900 . . . this process of technological and scientific change "started to speed up" . . . [I]t was taking twenty to thirty years for technology to take one step big enough that the world became uncomfortably different. . . . . it's on the order of five to seven years from the time something is introduced to being ubiquitous and the world being uncomfortably changed







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In the world we are in now, acceleration seems to be increasing. [That means] you don't just move to a higher speed of change. The rate of change also gets faster ... And when the rate of change eventually exceeds the ability to adapt you get 'dislocation.'

> Dislocation is when the whole environment is being altered so quickly that everyone starts to feel they can't keep up.

# Munich RE

# complexity

Characteristics: The situation has many interconnected parts and variables. Some information is available or can be predicted, but the volume or nature of it can be overwhelming to process.

Example: You are doing business in many countries, all with unique regulatory environments, tariffs, and cultural values.

Approach: Restructure, bring on or develop specialists, and build up resources adequate to address the complexity.

# volatility

Characteristics: The challenge is unexpected or unstable and may be of unknown duration, but it's not necessarily hard to understand; knowledge about it is often available.

Example: Prices fluctuate after a natural disaster takes a supplier off-line.

Appreach: Build in slack and devote resources to preparechess—for instance, stockpile inventory or overbuy talent. These stops are typically expensive; your investment should match the risk.

# ambiguity

Characteristics: Causal relationships are completely unclear. No precedents exist; you face "unknown unknowns."

Example: You decide to move into immature or emerging markets or to launch products outside your core competencies.

-

Approach: Experiment. Understanding cause and effect requires generating hypotheses and testing them. Design your experiments so that lessons learned can be broadly applied.

# uncertainty

Characteristics: Despite a lack of other information, the event's basic cause and effect are known. Change is possible but not a given.

Example: A competitor's pending product launch muddles the future of the business and the market.

Appreach: Invest in information—collect, interpret, and share it. This works best in conjunction with structural changes, such as adding information analysis networks, that can reduce engoing uncertainty.

Nathan Bennett & G. James Lemonine, *What VUCA Really Means for You*, <u>Harvard Business Review</u> (Jan-Feb 2014)





**Characteristics:** The situation has many interconnected parts and variables. Some information is available or can be predicted, but the volume or nature of it can be overwhelming to process.



Coronavirus 🔗 News

### 'It doesn't feel real': CU students reel from news of canceled inperson classes as coronavirus spreads

by Robert Tann | March 11, 2020



Students sit inside a University of Colorado Boulder classroom on January 28, 2020. (Matthew Mendoza/CU Independent)

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# uncertainty

**Characteristics:** Despite a lack of other information, the event's basic cause and effect are known. Change is possible but not a given.



= THE DENVER POST

#### NEWS > HEALTH · News

# CU Boulder waiting on county health guidance to determine whether students can return to classrooms

Boulder County's Board of Health meeting Wednesday to discuss measures implemented to curb COVID-19 among students





# ambiguity

**Characteristics:** Causal relationships are completely unclear. No precedents exist; you face "unknown unknowns."







# volatility

**Characteristics:** The challenge is unexpected or unstable and may be of unknown duration, but it's not necessarily hard to understand; knowledge about it is often available.



# 'This was a revolt': CU students blame frustration over COVID-19 restrictions for Saturday's riot



Police say violence and destruction broke out as officers worked to break up a party involving hundreds of people near the University of Colorado Boulder on Saturday.



# Today's Environment





# What's the Context?



• Erosion in confidence of public and private entities' ability to safeguard their own behaviors.



# **Two Different Spheres**



## Operational



 The regime that orders human activities and relations through systematic application of the force of politically organized society, or through social pressure, backed by force, in such a society.

# Governance



 Providing the mandate, resources, and oversight for the operational aspects to be effectively performed.

# Law v. Ethics They are not the same



Law



**Ethics** 

 Doing what needs to be done to ensure that employees are complying with applicable legal requirements.  Ethics - A system of moral tenets or principles; the collective doctrines relating to the ideals of human conduct and character.



The first line of defense for any society is always going to be its guardrails—laws, stoplights, police, courts, surveillance, the FBI. . . . All of those are necessary, but they are not sufficient for the age of accelerations. Clearly, what is also needed. . . is to think more seriously and urgently about "sustainable values": honesty, humility, integrity, and mutual respect. This is opposed to . . . "situational values"—" just doing whatever the situation allows."

# Start at the End



- Each institution has different issues.
- Good policies are imperative.
- Good policies don't substitute for good people.



Transform the Trend – What You Can Do to Disrupt the Patter of Sexual Abuse and Misconduct

### **Dorothy Gjerdrum**

Senior Managing Director, Public Sector & K-12 Education, Gallagher **Stacie Kroll** Managing Director, Gallagher







- Ground Rules
- Sexual Abuse and Misconduct Landscape
- SAM Symposium Findings and Report
- What You Can Do Let's Change This!



- Children are not statistics
- This risk affects all of us
- And please take care of yourself, too







National Sexual Assault Hotline – 1.800.656.4673 Rape, Abuse and Incest National Network · rainn.org

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# Sexual Abuse and Misconduct Landscape



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# **Definition of SAM**



From the Centers for Disease Control and Prevention (CDC)

- Involvement of a child in sexual activity that violates laws or social taboos and that they/he/she:
  - Does not fully comprehend
  - Does not consent to or is unable to give informed consent to, or
  - Is not developmentally prepared for and cannot give consent to



# State of the Crisis





Source: Center for Disease Control

# Long Term Consequences



Physical Health Physical

 Chronic later in life. such as heart obesity, and

transmitted

(STIs)



 Depression Post-traumatic stress disorder (PTSD) symptoms Increased risk

for suicide or suicide attempts

 Substance including opioid misuse

Health

Behavioral

- Risky sexual behaviors. meaning sex with multiple partners or behaviors that could result in pregnancy or STIS
- Increased risk perpetration of

• Females exposed to child sexual abuse are at 2-13 times increased risk of sexual victimization in adulthood

Victimization

 People who experienced child sexual abuse are at twice the risk for nonpartner

# **Disclosure of Abuse**



#### DELAYED DISCLOSURE **OF CHILD SEXUAL ABUSE**

Delayed disclosure is the phenomenon common to survivors of child sex abuse where individuals wait for years, often well into adulthood, before telling anyone they were abused.



# **Reporting Stats**

© CHILD USA February 2022

- 23-33% disclose during childhood ۰
- 48 is the median age •
- 52 is the average age
- 25-33% of cases are never reported ۰

# What we know from reports



### 40% of the 5- and 6-year-old victims were boys

Boys were more apt to be victimized by peers at a young age; they accounted for about 40 percent of the 5- and 6-year-old victims. By contrast, they made up just 14 percent of victims of all ages.

# **14** peak age of reported female victims

Girls were most likely to be victims in their pre-teen and early teen years; reported incidents with female victims increased dramatically starting around 11 and peaked at 14. Girls accounted for more than 85 percent of all victims.

# 7-to-1 ratio

Though cases involving teachers sexually assaulting children make the news, for every adult-on-child sexual assault on school grounds reported to police, there were seven such assaults among students.

# Sexual assault victims



#### SEXUAL ASSAULT VICTIMS Peer sex assaults at school Girls Boys Victims by age, gender 500. SOURCE: AP analysis of FBI's National Incident-Based Reporting 400 . System 2013-2014 data 300 . 200 100 0 8 11 12 13 14 15 16 18 19 5 10 Age of victim

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# Reports of sexual assault



**REPORTS OF SEXUAL ASSAULT** 

# Types of peer sexual assault at school

SOURCE: AP analysis of FBI's National Incident-Based Reporting System 2013-2014 data



# Litigation Trends (1977 - 2002)

# Widely Publicized Scandals

- 1977. Roman Polanski (CA).
- 1985. Fr. Gilbert Gauthe, Louisiana dioceses (LA).
- 1987. Bob Villard (CA).
- 1986. Thayer Academy (MA).
- 1991. Washington Times investigative report on pervasive sex abuse in Boy Scouts.
- 1992. Woody Allen (NY).
- 1993. Mount Alvernia High School (MA).
- 1995. Notre Dame Academy (MA); Phillips Academy (MA).
- 1996. USA Volleyball (IL).
- 1997. Washington Academy (ME).
- 1998. Cheverus High School (ME). Solomon Schechter Day School (MA).
- 2000. Austin Preparatory School (MA); Kent Hills School (ME); St. Paul's School (NH).
- 2002, Boston Globe discloses Boston Archdiocese (MA): Boston College High School (MA); Catholic

Memorial School (MA), Manchester Diocese (NH); Cincinnati Diocese (OH); Cardinal Spellman







# Litigation Trends (2003-2013)

- **2003**. Linden Hill School (MA); Riverview School (MA); Saint Thomas More School (CT); Philadelphia Archdiocese (PA); Los Angeles Diocese (CA); San Diego Diocese (CA); Orange Diocese (CA).
- 2004. John Dewey Academy (MA); Jason Michael Handy (CA); Portland Archdiocese (OR).
- **2005**. Bill Cosby first rape allegation made public; The Loomis Chaffee School (CT); Chicago Archdiocese (IL); Burlington Diocese (VT); Hartford Archdiocese (CT).
- **2006**. Berkshire School (MA); Eagle Hill School (CT); Lyndon Institute (VT); Maine Central Institute (ME); Milton Academy (MA); St. Dominic Savio Preparatory High School (MA). Charles Bennison Episcopal Church (PA); Wilmington Diocese (DE).
- 2007. Baptist Church (TX); USA Judo (OH); Miami Archdiocese (FL).
- **2008**. Buckingham Browne & Nichols School (MA); Cardigan Mountain School (NH); Tony Alamo Christian Ministries (AR, IN).
- **2009**. Cathedral High School (MA); Yona Weinberg, ultra-Orthodox Jew (NY); The Cambridge School of Weston (MA); Williston Northampton School (MA).
- **2010**. U.S. Women's Swimming; Assumption Catholic School (CT); Brewster Academy (NH); Notre Dame Academy (MA); St. Stanislaus School (CT); Vermont Academy (VT); St. John's School for the Deaf (WI).
- **2011**. Jerry Sandusky Penn State (PA): Syracuse Basketball (NY); Fundamentalist Church of Jesus Christ of Latter-Day Saints (TX); Fessenden School (MA); LA United School District (CA); Christ the King Regional H.S. (NY); Riverside Church basketball program (NY).
- 2012. Jehovah's Witnesses (CA). Horace Mann (NY); James Madison High (NY); Monsignor Lynn (PA); Phillips Andover Academy (MA); Carrabassett Valley Academy (ME). Landmark School (MA); Maimonides School (MA); Westover School (CT); Orthodox Jewish Camp Shalva (NY); Yeshiva University (NY); Santa Fe Archdiocese (NM).
- **2013**. Ariel Castro (OH); USA Speed skating; Father Gerald "Jerry" Funcheon (MN); Nicole Dufault (NJ); Brooks School (MA); Brunswick School (CT); Choate Rosemary Hall (CT); Deerfield Academy (MA); Notre Dame Catholic High School (CT); The Park School (MA); The Pike School (MA); The Taft School (CT).




### Litigation Trends (2014-2020)



6 years

2014. Patrick Henry College (VA): Paks Karate (FL): Fr. James Thoennes (MN). Fruits of the Minnesota Window (MN) Solebury School (PA): Doctor Franklin Perkins School (MA): Miss Porter's School (AL); Apostolic Church of Jesus Christ (AL); University of Alabama in Huntsville (AL); The (CT): Quincy Darlington School in Rome (GA); Palo Alto Medical Foundation (CA); Dominican Hospital (CA); Marv of the Hi Roman Catholic Church in Phoenix (AZ); Mesa Police Department (AZ); St. Francis Xavier Church 2015. AAU Volley (NY); Stoddert Middle School (MD); Fusion Health Care and Silhouette Medspa (CA); Vungle Lutheran Serv (CA); Aggressive Christianity Missions Training Corps (NM); Satellite Hotel Churches (CO); Portland Boys Partners Program (CO); Dolores County Sheriff's Office (CO); Kent School (CT); The Brearley (AZ); U.S. Ma School (NY); Kidz Ink 2 Day Care (DE); Kamehameha School (HI); Midwest Academy (IA); Sioux Jewish Day Sc Center Christian School (IA); Parkview Church (IA); The Learning Tree Child Care Center (WI); St. Pius X Catholic School (WI). 2016. St. George's ( Child Care (01 2018. Larry Nassar (MI); Penasylvania Grand Jury Report (PA); (Jehovah's Witnesses Church (NV); U.S. Military (VA); Nichols School (NY); St. Mary's Academy (OR); Randolph Union High School (IN); U.S. Oly (VT); The Awakening Church (TN); Mount Gilead Baptist Church (AL); City of Highfill Mayor's First Baptist C Office (AR); Highfill United Methodist Church (AR); Palestine-Wheatley High School (AR); The Border Patrol ( International Water Polo Club (CA); USA Water Polo (CA); Iglesia La Familia De Dios (CA); Fort KNOE-TV (L) Carson (CO): New Smyrna Beach Middle School (FL): Roman Catholic Diocese of Boise (ID): 2017. Beth Tfiloh I Wrestling program, Bergen Catholic H.S. (NJ); Jeffrey Epstein (FL). United Synag( 2019. Michael Jackson (CA); R. Kelly (IL); Southern Baptist Convention (TX); Roman Catholic Dioceses (NJ, TX, MO, NY); John Coughlin (KS); Theodore McCarrick (DC); James "Doc" Jensen (MT); (KY); Camp I Roman Catholic Archdiocese of New York (NY); Boy Scouts of America (NY); Dr. Michael Dick Amateur Athle (AL); Dr. George M. Tyndall (CA); Dr. Richard Strauss (OH); Dr. Reginald Archibald (NY); Dr. Stanley Weber (MT); Sterling Van Wagenen (UT); George Pell (Australia); Dr. Johnnie Barto (PA); Richard Callaghan (CA). 2020. Joseph Ruffalo (CA); Patricia Gucci (CA); Jerry Harris (TX); Christophe Girard (France); Ghislaine Maxwell (NH); Martin Weiss (CA); Keith Raniere (NY); Catholic Boy Scouts of Ireland (Ireland); Devereux Behavioral Health (PA, DE); Catholic Diocese of Buffalo (NY); Portsmouth Abbey School (RI); Archdiocese of Chicago (IL); The Children's Village (NY); Archdiocese of Denver (CO); St. Francis High of Athol Springs (NY); Cardinal O'Hara High School (NY); Bishop Fallon

High School (NY); Newark Archdiocese (NJ); St. Joseph's Orphanage (VT); De La Salle High (LA);

USA Cheer (TX); U.S. All Star Federation (TN); Church of Jesus Christ of Latter-day Saints (AZ).

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## **Litigation Trends**





- Feb 2022: University of California \$243.6 million settlement (~200 survivors)
- September 2022: West Valley Mission CCD California \$7.6 million settlement (single survivor)
- September 2022: University of Michigan
   \$490 million settlement class action (~1,000 survivors)

May 2023: LDS Church California \$2.28 billion jury award (single survivor)

### Statute of Limitation (SOL) Reform





### https://childusa.org

### **Reviver Statutes**



#### 2019 **Criminal SOL Ranking** 30 Arizona | Arkansas California | Colorado Florida | Georgia Hawaii | Idaho Indiana | Kansas Kentucky Louisiana 20 Massachusetts Michigan Number of States Mississippi New Jersey New Mexico New York North Carolina Pennsylvania 10 Rhode Island South Dakota Texas | Utah Connecticut Delaware Vermont | Virginia Washington Illinois | Maryland Minnesota Alaska | Alabama Nevada West Virginia Missouri | Montana Maine owa | North Dakota New Hampshire Wisconsin Nebraska South Carolina Ohio | Oklahoma Washington DC Tennessee Wyoming 0 2 3 5 WORST BEST 4: Elimination for 5: Full elimination 1: Expires 2: Expires age 40 to 50 3: Elimination for for all felonies & some felonies & before age 40 or yrs after reporting some/all felonies only misdemeanors misdemeanors " Ranking does not include provisions that extend/eliminate SOL if there is DNA evidence or reporting The Sean P. McIlmail Statute www.childusa.org of Limitations Research Institute at CHILD USA



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Source: Child USA 2023 SOL Tracker

### **Reviver Statutes**



### **2019**

### Civil SOL Revival Law Ranking



- Revival window for claims of abuse by doctors only
- = Revival window, revival up to a certain age or revival of all claims, against perpetrators only
- 3) = Revival window or revival up to age 30-54, for claims against perpetrators and private organizations
- Revival window for 2 or more years or revival up to age 55, for claims against perpetrators, individuals, private organizations and government
- Permanently open revival window for all claims against perpetrators, individuals, private organizations and government

The Sean P. Mellmail Statute of Limitations Research

natitute at CHILD USA



Source: Child USA 2023 SOL Tracker

### 2023







## Symposium Findings and Report



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- I. Help organizations that serve children understand and develop a child-safety culture that will support the disruption of bad behavior and early interventions
- II. Improve the management of incident responses and improve and organization's ability to defend itself
- III. Learn from successes and failures of other sectors;
- IV. Increase our insurance market partners' confidence and willingness to create products to meet our clients' needs; and
- V. Engage Gallagher's expertise and commitment to protecting children among multiple industry groups.

#### Public Entity Risk Symposium



### Comprehensive Approach

### In other words....





- ✓ We need to raise awareness among leaders; we lack a sense of urgency
- ✓ We need to develop a **broader understanding** and approach to manage this risk
- ✓ Policies and processes need to be survivor-centric
- ✓ This work takes **commitment and intention**

## Transforming the Trend Symposium Report



SYMPOSIUM REPORT

Working Together to Disrupt the Pattern of Child Sex Abuse



### - Thought leader perspectives

Kathleen McChesney, Consultant, Kinsale Management Consulting (Video) Janice Abraham, CEO, United Educators (Video) O&A with Industry Leaders

#### Insurance marketplace

Claims and Stats Presentation, Gallagher[®] State of the Reinsurance Market, Gallagher Re (Video)[®] Insurance Carrier Benchmarking; Sexual Abuse and Molestation Liability[®]

#### Societal impact

Nonprofits Called to Empathy and Action
Preventing and Addressing Child Sex Abuse in Youth Serving Organizations
Past Facts: Preventing Child Sex Abuse, CDC
Child Sexual Abuse

### Claims and verdicts

2022 Praesidium Annual Report ^{IZ} 2023 United Educators Large Loss Report ^{IZ}

#### Legislative trends

2022 Statute of Limitations Tracker¹² <u>A Call to Action for Policymakers and Advocates, Enough Abuse Campaign</u>¹²

https://www.ajg.com/us/transforming-the-trend-symposium-resources/

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## What You Can Do – Let's Change This!



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### What WE can do







## Thank you!

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https://www.ajg.com/us/transforming-the-trend-symposium-resources/



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A Pool's Perspective on Sensor Deployments to Mitigate Property Losses Speaker Name Speaker Title



### Speakers





Rich Moore Director of SIAW & USIP

**Clear Risk Solutions** 



Adam Care

Client Innovation & Solutions Leader

HSB

## CRS, USIP, and SIAW Background









## SIAW Program (36 Districts) USIP Program (156 Districts)





# Internet of Things Introduction

## What is the Internet of Things?





In simple terms, the *Internet of Things* is the interconnection, via the Internet, of computing devices embedded in everyday objects, enabling them to send and receive data. The **data** produced can be very **powerful**Billions of connected devices

**IoT is all around us** – even in your cell phone

IoT will be present in **homes**, **businesses** and **infrastructure** 

### How does it relate to our industry?





### What's the state of the market?

- Commercial and Personal Lines carriers have started to adopt IoT into their offerings.
- Certain insurtech players in the personal lines space are incorporating IoT devices into every policy they sell.
- Carriers and pools are building out their own IoT strategy and determining how to take advantage of the technology to improve their own performance.
- Agents, brokers, and wholesalers are also similarly building their own IoT strategies, often looking for vendors to partner with to offer IoT devices to their customers.
- Technology companies also offer their own IoT solutions for insurance industry distribution.

### IoT and Insurance:





### IoT solutions are poised to disrupt the insurance industry

- Pivot from reactive claims to proactive risk management and loss control
- Predict and Prevent Losses
- New business models and coverages utilizing sensor data

# **Sensor Capabilities**

IoT solutions can arm you with leading edge technology and real-time Munich RE



### Foundational hardware and software offerings Manage risk for water and fire perils





October 17, 2023

168

# How it Works: Technology enables location contacts to take action, preventing potential property or equipment loss

walls and long distances









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### IoT Solutions can work in campus settings

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## **Return on Investment**: How IoT programs can drive value and create a positive return on investment

# 639% Scale Clients' Average Rol

(1/1/18 to 4/30/23)

Depending on occupancy, ROI range = 300% to 1100%

### ROI = (Client Confirmed Loss Averted – Earned Program Fee) X 100 Earned Program Fee

- · Calculation leverages client-confirmed "saves" as the sole driver of return
- Additional benefits from new business or retention are not included
- Impact of LAE and BI are also not included in calculation

### Occupancies in Top 10

- K-12 Schools*
- Municipalities*
- Human Services
- Assisted Living & Nursing Homes
- Houses of Worship

### *Recorded 737% Rol in this period

- Commercial Real Estate
   (e.g. office buildings, strip malls)
- Specialty Retail Stores
- Apartments and Condos
- Campuses (Education, Hospital)

# Clear Risk Solutions – Sensor Experience

## **CRS Sensor Journey**



- Why did you get started?
- What did you learn?
- Why did you choose to expand the scale of the deployment?
- What feedback have you heard from your members?
- What impact did your sensor deployment expansion have with your property reinsurance partners?

## SIAW Program (36 Districts) USIP Program (156 Districts)





### **Risk Management Grant Program**



Both programs established budget capacity to provide matching funds for items that were submitted via a grant process that would reduce potential future losses or help with corrective action after a loss.

The proposals submitted were chosen by member districts and evaluated by the CRS Risk Managers

While many of the proposals were necessary improvements, the CRS team felt that we needed to do more to reduce future potential losses.

After a meeting with HSB, we pivoted to the IOT program.

Members were responsible for providing a portion of the installation and acquisition costs up front.

The assumption was that eventually the cost of the IOT program would be paid by member districts.

### **Pilot Summary**



# Enrolled Locations



- Enrollments began Oct. 2019 until April 2022
- There have been 7 saves to date:
  - 5 water loss saves
  - 3 freezer saves

### **Expansion Summary**





- Clear Risk Solutions received funding effective 9/1/2022 to deploy in 2 school pools USIP and SIAW
- Focused on schools with prior losses
- CRS discussions surrounding sensor deployments to additional pools (NPIP)

### HSB Sensor Solutions Preconfigured Kits for Schools



Occupancy	Kit Option (Sq ft sizing)	Gateways	Water Sensor	Ambient Air Temp Sensor	Refrig. Sensor	Pipe Freeze Sensor
Schools and supporting buildings	Small School (<60k sq ft)	1	4	3	2	0
	Large School (60-150k sq ft)	1	8	6	2	0
	Extra Large School (150-300k sq ft)	2	13	9	4	1
	XXL School / Campus (300-450k sq ft)	3	16	12	6	2
### Target Deployment Locations – Richland School District has 7 schools targeted for SIAW





# Target Deployment Locations – Prosser School District has 4 schools targeted for USIP





### **CRS Sensor Save Highlights**

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- Elementary School Water Alert Water sensor alert identified a broken pipe in the hallway of the building. Internal flooding damage would have been expected had it not been for the alert.
- High School Water Alert Pipe Freeze caused water to flow from boiler room. Water alert allowed staff to contain water to a few surrounding rooms and mitigate impact on a larger section of the school.
- Elementary School Water Alert Water sensor alerted to the presence of water due to heavy rains entering the building. The water entered a crawl space area which triggered the sensor to alert. Water clean up was able to occur in a timely fashion.
- Education / Recreation Facility Water Alert Water sensor alerted to the overflow of a condensate pump failure. Customer was able to address the water situation, which prevented damage to classrooms and shop areas.
- Middle School / High School Spoilage Alert Spoilage save in the walk-in freezer. Freezer was
  losing freon which caused temperatures to rise. The alert allowed the district to move the food to
  prevent spoilage as the leak was addressed.

### **CRS School Save Example – Deep Dive**



## **Clear Risk Solutions**

Serving the Pacific Northwest for over 30 years, our client specializes in program administration and risk management services. They are the leading program manager for insurance pools across schools (190+ districts), municipalities (250+) and non-profits (900+) in Washington. They partnered with HSB to protect their client's aging properties against high water leak claims.

Business Class: Schools Loss Avoided: Water Leak Save: \$100,000

# Challenge

Action

mpact

**M** 

In the pool mechanical room, a part failed in the water softener, causing a leak at an unoccupied school in Washington.

 A building supervisor was sent an actionable alert that the HSB sensored mechanical room was registering water presence on the floor.

- Staff was able to respond within 10 minutes to turn on the water softener on bypass.
- This action prevented water from leaking to major common areas of the school including the kitchen and gymnasium, saving \$100,000 in potential damage.

# PFOA/PFAS: What's the big deal?

Bill Nellen Exec. Vice President, Alliant Specialty Insurance Services Katrina Seese Asst Vice President, Alliant Specialty Insurance Services



### Agenda



### 1. Introductions

- 2. What is the Problem?
  - What are the chemical compounds of concern?
  - Health effects
  - Where are they found? Everywhere...
- **3.** Solutions
  - Remediation
  - Who's held financially responsible/liability concerns
- 4. Environmental Insurance for Public Entities
  - What kind of coverage is available in the marketplace what can it do?
  - PFAS for Public Entities:
    - Water Supplies / Airports / Fire Training Centers, etc.
    - Historical liabilities associated with PFAS for real estate transactions

# What is the Problem?

What are the chemical compounds of concern? PFAS are a family of manmade chemicals that contain carbon, fluorine and other elements. All PFAS contain a chain of carbon atoms bonded to fluorine atoms.

PFAS are per- and polyfluoroalkyl substances. The PFAS family includes hundred of chemicals.

### **Common PFAS: Abbreviations and Names**

Abbreviation	Chemical name
PFOS	Perfluorooctane sulfonic acid
PFOA (aka C8)	Perfluorooctanoic acid
PFNA	Perfluorononanoic acid
PFDA	Perfluorodecanoic acid
PFOSA (aka FOSA)	Perfluorooctane sulfonaminde
MeFOSAA (aka Me-PFOSA-AcOH)	2-(N-Methyl-perfluorooctane sulfonamido) acetic acid
Et-FOSAA (aka Et-PFOSA-AcOH)	2-(N-Ethyl-perfluorooctane sulfonamido acetic acid
PFHxS	Perfluorohexane sulfonic acid

Reference: Agency for Toxic Substances

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# AKA The "Forever Chemicals"



- <u>Nearly Half of U.S. Tap Water</u> <u>Contains 'Forever Chemicals,'</u> <u>Study Says</u>
- Forever Chemicals' Are Everywhere. What Are They Doing to Us?
- > <u>A Forever Headache</u>
- <u>Risk of Tap Water Exposure to Toxic</u> <u>PFAS Chemicals Higher in Southern</u> <u>California</u>
- In Our Blood: How The US Allowed Toxic Chemicals to Seep Into Our Lives
- <u>EPA's Proposed Change on PFAS</u>
   <u>Limits Would Deem Dozens of</u>
   <u>Colorado Water Sources Unsafe</u>



- » Increased cholesterol levels and risk of obesity
- » Decreased vaccine response in children and reduced ability of the body's immune system to fight infections.
- » Changes in liver enzymes
- » Increased risk of high blood pressure or pre-eclampsia in pregnant women.
- » Reproductive effects such as decreased fertility
- » Developmental effects or delays in children, including low birth weight, accelerated puberty, bone variations, or behavioral changes.
- » Increased risk of kidney, prostate or testicular cancer
- » Interference with the body's natural hormones.



# Where are they found?

Everywhere...

PFAS can be present in our water, soil, air, and food as well as in materials found in our homes or workplaces, including:

- » Drinking water
- » Soil and water at or near waste sites .
- » Fire extinguishing foam .
- » Manufacturing or chemical production facilities that produce or use PFAS
- » Food
- » Food packaging
- » Household products and dust
- » Personal care products
- » Biosolids

# Solutions



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- We've got PFAS, how do we get rid of them?
- Solution to pollution is dilution
- [Might not be possible in this situation]
- Separate the chemical compound from the media
- Techniques have involved extreme heat (up to 2,750°F), sorbents, and bioremediation
- PFAS are so stable because they are composed of a chain of carbon and fluorine atoms linked together, and the carbon-fluorine bond is hard to break



### **Financial Responsibility**

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- Who's going to have to pay or be liable for PFAS impacts?
- High profile pundits have estimated up to \$400B to clean-up impacted water
- So far, DuPont, Chemours, Corteva, and 3M have paid a total of nearly \$11.5 billion to a settlement fund
- Bipartisan Infrastructure Law (2021) authorized \$5 billion in grants for PFASrelated technical assistance / water quality improvement
- Appears unlikely that all "downstream" entities impacted by PFAS will be held accountable

## Environmental Insurance for Public Entities



What kind of coverage is available in the marketplace?

- » ·
- What can it do?
- » Pollution Legal Liability Policy
  - » Meaningful Coverage Grants for Coverage for PFAS:
    - » Products pollution
    - » Onsite and offsite remediation (1st and 3rd party) for both historical and new conditions.
  - » Exclusions on the rise: The New asbestos?





### **PFAS for Public Entities:**

A. Water Supplies / Airports / Fire Training Centers, Landfills

B. Environmental Insurance Coverage for PFAS for Real Estate Transactions

Water Supplies/ Airports /Fire Training Centers, Etc.

- Wastewater treatments plants and drinking water supplies
- > Treatment and Costs
- Who's responsible? Municipalities? Taxpayers?
   Chemical Manufacturers? (Dupont, 3M etc.)
- Landfills, Fire Training Centers, Former Military Bases
- > What to do about known existing contamination
- > Alternative products
- Concerns for Workers in these industries and occupations

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# Real Estate Transactions – PFAS Considerations

- » Due Diligence Question: To test or not to test?
- » New ASTM Phase I ESA standard includes consideration of PFAS
- » Environmental insurers do not list PFAS in definition of "pollutant" – but could add exclusions that are specific
- » Coverage is available, but the window might be closing

### **Contact Information**



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Bill Nellen (404) 271-0541 bnellen@alliant.com The Claims, Science, and Underwriting of Secondary CAT Perils

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# Secondary Perils: Winter Freeze Events / Hail Losses Is this the new normal?





### Winter Storm Uri– February 11 – 17, 2021



- Unexpected
- Spanned across several states
- Generated a Significant Number of Costly Claims



### Winter Storm Uri– February 11 – 17, 2021



- Uri caused an estimated \$295 Billion in damage nationwide.
- Uri left close to 4.5 million homes and businesses without power.
- In Texas, Winter Storm Uri created more than \$195 billion in damage, making it the most costly natural disaster in Texas history.
- By comparison Ian damages estimated at \$113 Billion.



### Winterstorm Elliott - December 21 – 26, 2022

- Widespread
- Multiple perils- Collapse, Flooding, Wind
- Unexpected damage-weight of ice and snow



### Winterstorm Elliott - December 21 – 26, 2022

- Winter Storm Elliott affected 40+ states stretched resources nationwide.
- Caused an estimated \$8.5 Billion in damage to date.
- The "once-in-a-generation" storm was characterized by record cold temperatures, blizzard conditions and high winds that impacted most of the country.



Colorado, Connecticut, Georgia, Illinois, Indiana, Kansas, Kentucky, Maine, Maryland, Massachusetts, Missouri, New Hampshire, New Jersey, New York, North Carolina, Ohio, Oregon, Pennsylvania, Rhode Island, South Carolina, Tennessee, Texas, Vermont, Virginia, Washington, Wisconsin **Extended to include:** Arkansas, Iowa, Michigan, Minnesota, Nebraska, Oklahoma, possibly other areas.







### **Severity Trends**



- Mold issues are a concern/chemical hazards/asbestos removal
- Sometimes water mitigation expenses are larger than the cost to build back / often involve demo of portions of the building
- Extensive contents usually affected with significant pack out bills
- Business interruption/extra expense always expected with frozen pipe claims due to mitigation and power outages



## Hailstorm severity



### **Observations**



- Back-to-back hail events across the nation
- Significant damage to roofing and other structures, windows, doors, framing, siding
- HVAC systems and soft metals
- Matching issues

### Large Hail can Devastate a Roof/Siding Small Hail Also Causes Significant Widespread Damage





### Hail Damaged Roofing









### Siding and Building Wraps Matching



#### Insurance Regulations within Matching States:

"When a loss requires replacement of items that do not match in quality, color or size, the insurer shall replace all such items in the area so as to conform to a reasonably uniform appearance. This applies to both interior and exterior losses. The insured shall not bear any cost over the applicable deductible, if any." Examples: Siding / Roofs.

#### **Matching States:**

 Alaska, Iowa, Nebraska, Kentucky, California, Florida, Utah, Ohio, Rhode Island, Connecticut, South Dakota, Montana, Tennessee, Vermont.



### Lessons Learned From Secondary Perils:



- Importance of maintaining heat (particularly within schools)
- Timely mitigation
- Moisture alarms/technology for early alerts of water
- Valuations should be accurate

# **The Science**
#### Field Research into SCS storms



#### Insured Losses From Primary/Secondary Perils (2022 \$ bn)





Data: Catastrophe Insight, Aon

#### Perils: Severe Convective Weather (Tornado, Hail, Winds)





Public Entity Risk Symposium

#### **Climate Change & Severe Weather**



- In general, warmer air holds more moisture and is more unstable, allowing for more intense storms.
- We have low confidence in the change in the frequency of tornado occurrence.
- We are seeing more days with hail in many parts of the US.
- In future years, we are expecting an increase in supercells that can produce hail & tornadoes east of the traditional tornado alley, and an increase in December-February.¹
- Overall Mean increase in supercells of 6.6% (14.5% if unchecked warming continues) with a Median of 16.1% (26.9%)
- December 15, 2021 62 tornadoes in Iowa (5 on record in December since 1896), 22 in Minnesota (0 on record in December prior to that day).



### Change in Hail Days Per Decade



## **Population Shifts**



The targets – humans / possessions – of hazards are increasing as populations grow

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## Year-over-Year Change in Cost to Replace a Roof vs Inflation Munich RE





#### Round Rock, TX Hail – 9/24/23

- Golf ball to baseball sized hail
- 200 City Vehicles Damaged
- 50 police vehicles damaged
- Police & Other Departments utilized backup vehicles (often not in prime condition as current fleet)
- Other first responder vehicles damaged, including paramedics and fire department vehicles









# The Underwriting



P&C Industry   P&C Underwriting Analysis								
	2022 Y	2021 Y	2020 Y	2019 Y	2018 Y	2017 Y		
Period Ended	12/31/2022	12/31/2021	12/31/2020	12/31/2019	12/31/2018	12/31/2017		
Data displayed in \$000 unless otherwise noted								
Operating Ratios (%)								
Loss and LAE Ratio	76.34%	72.52%	70.14%	71.03%	71.42%	75.91%		
Expense Ratio	25.92%	26.52%	27.48%	27.20%	27.28%	27.34%		
Policyholder Dividend Ratio	0.44%	0.67%	1.19%	0.78%	0.62%	0.61%		
Combined Ratio	102.71%	99.72%	98.80%	99.01%	99.32%	103.85%		
Source: S&P Global P&C Underwriting Analysis								

### U.S. 2023 Billion-Dollar Weather and Climate Disasters



This map denotes the approximate location for each of the 23 separate billion-dollar weather and climate disasters that impacted the United States through August 2023.



## Increase in Weather and Climate Events – Frequency and Severity



Time Period	<b>Billion-Dollar Disasters</b>	Events/Year	Cost	Percent of Total Cost	Cost/Year
1980s (1980-1989)	33	3.3	\$212.7B	8.1%	\$21.3B
1990s (1990-1999)	57	5.7	\$324.6B	12.4%	\$32.5B
2000s (2000-2009)	67	6.7	\$602.5B	23.0%	\$60.3B
2010s (2010-2019)	131	13.1	\$964.4B	36.9%	\$96.4B
Last 5 Years (2018-2022)	90	18.0	\$620.6B	23.7%	\$124.1B
Last 3 Years (2020-2022)	60	20.0	\$454.3B	17.4%	\$151.4B
Last Year (2022)	18	18.0	\$177.6B	6.8%	\$177.6B
All Years (1980-2023)*	371	8.4	\$2,616.1B	100.0%	\$59.5B

Cost statistics not included for Hurricane Idalia (August 2023)

Source: NOAA National Centers for Environmental Information (NCEI) U.S. Billion-Dollar Weather and Climate Disasters (2023). https://www.ncei.noaa.gov/access/billions/, DOI: 10.25921/stkw-7w73

#### Impact of Secondary/Non-Modeled CAT events



#### Billion-dollar events to affect the United States from 1980 to 2023* (CPI-Adjusted)

Disaster Type	Events	Events/ Year	Percent Frequency	Total Costs	Percent of Total Costs	Cost/ Event	Cost/ Year
Drought	30	0.7	8.1%	\$337.1B	12.9%	\$11.2B	\$7.7B
Flooding	42	1.0	11.3%	\$193.4B	7.4%	\$4.6B	\$4.4B
Freeze	9	0.2	2.4%	\$36.2B	1.4%	\$4.0B	\$0.8B
Severe Storm	185	4.2	49.9%	\$442.4B	16.9%	\$2.4B	\$10.1B
Tropical Cyclone	61	1.4	16.4%	\$1,367.6B	52.3%	\$22.8B	\$31.1B
Wildfire	22	0.5	5.9%	\$142.1B	5.4%	\$6.5B	\$3.2B
Winter Storm	22	0.5	5.9%	\$97.3B	3.7%	\$4.4B	\$2.2B
All Disasters	371	8.4	100.0%	\$2,616.1B	100.0%	\$7.1B	\$59.5B

Source: NOAA National Centers for Environmental Information (NCEI) U.S. Billion-Dollar Weather and Climate Disasters (2023). <u>https://www.ncei.noaa.gov/access/billions/</u>, DOI: <u>10.25921/stkw-7w73</u>

Munich RE 🗐



What is the modeling accounting for? What is it not?

#### SCS or Severe Convective Storms

- Definition: Any storm or cluster of storms that can generate high winds through a variety of phenomena, including tornados, straight-line winds
- What is being considered in models: tornadoes, hail, straight-line winds and lightning

#### Winter Storm

- Definition: A combination of heavy snow, blowing snow and/or dangerous wind chills
- What is being considered in models: roof collapse under snow, ice damming, wind damage, icing causing treefall, burst pipes, and basement flooding

#### Current Property Trends – Capacity





#### Current Property Trends – Rate





Source: AMWINS – State of the Market Q1 2023 https://www.amwins.com/state-of-the-market