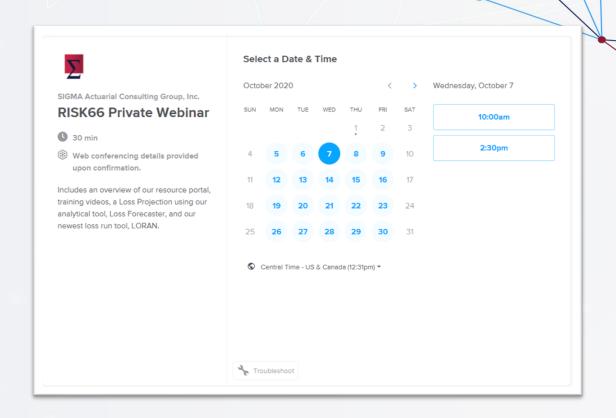


#### Schedule a demo

**RISK66: Loss Forecaster and LORAN** 

risk66.SIGMAschedule.com



### Meet the Trainers:

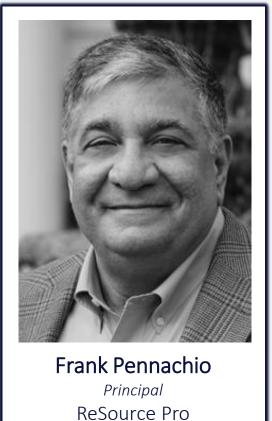
#### ReSource Pro & SIGMA Actuarial Consulting Group



**Tony King** Senior Actuarial Consultant SIGMA Actuarial Consulting



**Actuarial Consultant** SIGMA Actuarial Consulting



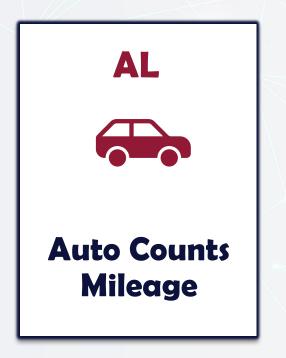




Which exposure bases are used by coverage?







#1

When deciding on the exposure base to be used in a client's loss projection,

availability
and
consistency
will always come first.

**#2** 

This type of data is only useful if it is available and tracked consistently over time.

for both the upcoming period and at least 3-5 years of history



#3

When multiple options are available for a specific coverage, choosing the more highly correlated option will improve the report's usability and value.

#**4** 

There are multiple ways of measuring correlation but examining the pure loss rates produced by each exposure base provides an easy "spot check."

#5

trends in both
loss and exposure
to see if they match
each other's
directional movements.

#### Note:

this won't always be the case, so you may have to utilize other measurements.





Period	Trended Auto Liability	I	Pure Loss Rate (Per 100,000	Trended Auto Liability	Auto	Pure Loss Rate	
Start	Losses	Mileage	Miles Driven)	Losses	Counts	(Per Auto Unit)	
01/01/15	\$1,110,000	139,080,000	\$798	\$1,110,000	1,683	\$660	
01/01/16	1,070,000	139,980,000	764	1,070,000	1,700	629	
01/01/17	990,000	148,620,000	666	990,000	1,785	555	
01/01/18	1,040,000	154,960,000	671	1,040,000	1,874	555	
01/01/19	810,000	165,120,000	491	810,000	1,499	540	
01/01/20	970,000	169,160,000	573	970,000	1,424	681	

What do they mean?

In the actuarial world, confidence intervals help their users understand the **likelihood** of **upcoming losses** being higher, lower, or equal to expectations.

They also allow users to gauge the **potential range** of upcoming losses.

If losses are higher or lower than expectations, how much higher or lower could they possibly be?



How do you read or explain a confidence interval?

As an example, consider this confidence interval from ABC Corp's last case study.

Aggregate Loss		
Probability	(\$100K P/O)	
Expected	\$720,000	
50%	\$710,000	
55%	730,000	
60%	740,000	
65%	760,000	
70%	790,000	
75%	810,000	
80%	840,000	
85%	870,000	
90%	910,000	
95%	980,000	

Look at the expected level and the 75th percentile





What are some common remarks or discussion points?

Some confidence intervals will display the lower (or more optimistic) end of the range.

Most are used to show users potential adverse scenarios.

This is especially useful when examining various **retention levels**.

For some coverages, expected losses at two different retention levels may not be significantly different.

However, at higher confidence levels, a client may be putting themselves at a significantly higher risk of retaining more losses than desired.





What are some common remarks or discussion points?

Confidence intervals can also be helpful when assisting clients for accrual purposes.

Depending on a client's outlook, they may wish to book and accrue conservatively for an upcoming period so that they avoid any "bad surprises."

This commonly occurs around the 75th percentile, depending on the coverage.

Leading with qualitative context



In some cases, we may already
know about **changes** or
situations a client is currently
experiencing, and we want (or
need) to use analytics to back
that assertion up.



Knowing the exact details of these changes, can help us establish context and parameters for what we may be looking for in the trends.



**ABC Corp Case Study** 

Period Start	Trended Losses	Trended Payroll	Pure Loss Rate (Per \$100 Trended Payroll)	Averages
01/01/15	\$820,000	\$69,540,000	\$1.18	2-Year Average = \$0.79
01/01/16	790,000	69,990,000	1.13	
01/01/17	730,000	74,310,000	0.98	4-Year Average = \$0.89
01/01/18	770,000	77,480,000	0.99	
01/01/19	600,000	82,560,000	0.73	All-Year Average = \$0.98
01/01/20	720,000	84,580,000	0.85	
				Median = \$0.99



Recently implemented safety procedures should have a positive impact on their WC losses.



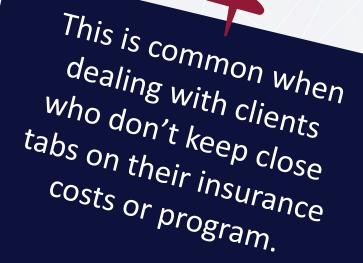
Downward trend in **pure loss rates** with implementation.



Leading with analytic context



In other situations, we may have no quantitative context going into our analysis.





XYZ, Inc. Case Study

Averages		re Loss Rate (Per \$100	Pu		
		Trended	Trended	Trended	Period
		Payroll)	Payroll	Losses	Start
\$2.35	2-Year Average =	\$1.41	\$7,070,000	\$100,000	01/01/15
		1.06	7,550,000	80,000	01/01/16
\$1.95	4-Year Average =	1.42	7,750,000	110,000	01/01/17
		1.68	7,750,000	130,000	01/01/18
\$1.71	All-Year Average =	1.89	7,950,000	150,000	01/01/19
		2.82	8,150,000	230,000	01/01/20
\$1.55	Median =				



We had very little contextual knowledge going into our analysis, other than an idea that premiums were rising.

loss experience by examining the pure loss rates.





Using analytics, revealed the most likely cause – the two recently opened locations.



Common decision points or identifiers

#### Note:

**Actuaries have** relatively conservative views when it comes to identifying trends.

For an actuary to view activity as a trend, rather than a "blip" or anomaly, it must be both consistent and fairly long-term (occurring for at least 2-3 years

Looking at data through this lens will reduce "snap" decisions and make changes more meaningful as well as defensible.





Common decision points or identifiers



To help identify these trends or movements, trends or movements, actuaries use simple calculations to measure historical and recent loss experience.

Consider calculating
averages and medians
of a client's short-term
and long-term
loss history
to give a clearer outlook.





## **Industry Indications**

What do I do for clients with no loss history?

For some clients, especially those in the smaller range, recent or credible loss history may not be available.

In these situations, consider utilizing industry-wide data as available to supplement your analysis.

For workers compensation, loss costs gathered by state and class code are a common way of determining an "expected" pure loss rate.

## **Industry Indications**

How else can I use industry factors?

For clients with a credible loss history and unique loss development triangles, industry-wide loss development factors could be compared to their unique factors. In these situations, consider utilizing industry-wide data as available to supplement your analysis.

Doing so will help determine whether their loss experience is better or worse than their industry peers, as well as the where the deviation occurs chronologically.

## **Presenting Your Findings**

Lead with results and discussion points

Especially when dealing with clients who are new to analytics, leading with the most pertinent information will be vital to keeping their attention and helping them from getting bogged down in details.

Try to determine several results or topics you'd like to discuss beforehand in order to guide the conversation toward a satisfying conclusion.





## Presenting Your Findings

#### Explaining complex topics

If your pre-determined topics involve relatively complex topics, brushing up on them beforehand will keep the details fresh in your mind for when an explanation is needed.

Your client may not be interested in the underlying calculations or analysis, so try to keep explanations at a high level.

The RISK66 library provides a free way to review these topics in both watchable and readable formats as needed.



## Presenting Your Findings

Leave with action points

Leave your client with at least one or two "action points" to examine or discuss internally.

By leaving them with ways of improving or investigating their risk-related programs, you're able to demonstrably show the usefulness of analytics and hopefully open their eyes to further possibilities.





#### Conclusion

#### Gaining and Retaining Knowledge

Advanced understanding or analytical expertise isn't always necessary, but when it is, you have an immense opportunity to demonstrate value.

Analytical knowledge is under-utilized in many industries, so displaying these traits gives you a clear way of standing out from the crowd.





#### Conclusion

**Providing Knowledge and Relaying Insights** 

Loss projection analyses are worthless to clients who don't understand them.

You should be able to give clients an informed opinion, answer simple questions, and leave them with ways to integrate this knowledge internally.





