Topics

- **Topic A** – Determining if predictive modeling is the right option for your program
- **Topic B** – How to best obtain credit for risk management from your actuary
- **Topic C** – Gaining insight into presenting actuarial results by risk management to the C-Suite
- **Topic D** – Better handling unique risks: D&O, Asbestos/Environmental, Warranty, Cyber Liability
Roundtable Procedures

- Conversation facilitated by actuary
- 25 minutes at each topic, then rotate
- Please share your own experiences!
- All views (actuary, risk managers, broker, claim administrator, etc.) and experience levels encouraged and appreciated
Levels of Business Intelligence

There is significant business value to be gained above basic reporting.

- **Optimization**: What is the optimal outcome?
- **Prediction**: What might happen next?
- **Monitoring**: What's happening now?
- **Query**: Who, what, where, and when?
- **Reporting**: What happened?
Data Types

Text mining may be used to transform information in unstructured data, such as adjuster notes, into a structured form.

Structured
- Claim Transactions
- Detailed Medical Experience
- Employer Characteristics
- Claimant Demographics

Unstructured
- Medical Notes
- Adjuster Notes
Jumper Claim Scoring
Low Jumper Claim Scores indicate a high likelihood of a large claim increase.

- **Average Incurred Loss at 45 Days**
- **Average Incurred Loss at Ultimate**

<table>
<thead>
<tr>
<th>Category</th>
<th>Average Incurred Loss at 45 Days</th>
<th>Average Incurred Loss at Ultimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>001-049</td>
<td>$0</td>
<td>$45,000</td>
</tr>
<tr>
<td>050-099</td>
<td>$0</td>
<td>$30,000</td>
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<tr>
<td>100-249</td>
<td>$0</td>
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<td>250-499</td>
<td>$0</td>
<td>$7,500</td>
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<tr>
<td>500-749</td>
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<td>$3,750</td>
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<td>750-899</td>
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<td>$1,875</td>
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<td>900-948</td>
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<td>949-1000</td>
<td>$0</td>
<td>$468.75</td>
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### Claim Detail Level Summary

<table>
<thead>
<tr>
<th>Claimant</th>
<th>State</th>
<th>Occ. Date</th>
<th>Last 12 Mos. of Payments</th>
<th>Monthly Payments</th>
<th>Procedures</th>
<th>Risk Score</th>
<th>Doctor Visit</th>
<th>Prescription Change</th>
<th>Monthly Payments</th>
<th>Procedures</th>
</tr>
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<tbody>
<tr>
<td>Adella Mabon</td>
<td>CA</td>
<td>2/20/1967</td>
<td>$32,560</td>
<td>$21,699</td>
<td>9.9</td>
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<tr>
<td>$23,818</td>
<td>$11,419</td>
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</table>

### Payment Summary

<table>
<thead>
<tr>
<th></th>
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<tbody>
<tr>
<td>Current Year</td>
<td>Prior Year</td>
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<td>Prior Year</td>
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<tr>
<td>Total</td>
<td>$0</td>
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<tr>
<td>Indemnity</td>
<td>$0</td>
<td>$0</td>
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<td>Medical</td>
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</tr>
<tr>
<td>Prescription</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
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### Company Level Summary

<table>
<thead>
<tr>
<th>Measure</th>
<th>2013 Actual</th>
<th>2013 Accident Year</th>
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<tbody>
<tr>
<td>Frequency</td>
<td>2.0%</td>
<td>2.0%</td>
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<tr>
<td>Severity</td>
<td>$0</td>
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<tr>
<td>Loss Cost</td>
<td>$12,000</td>
<td>$12,000</td>
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<tr>
<td>Liability</td>
<td>$28,000</td>
<td>$28,000</td>
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### Benchmarking Summary

<table>
<thead>
<tr>
<th>Last 6 Months</th>
<th>Total Days</th>
<th>Avoidable Costs</th>
<th>Risk Score</th>
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<tr>
<td>John Doe</td>
<td>0</td>
<td>$0</td>
<td>10,000</td>
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<tr>
<td>Company</td>
<td>0</td>
<td>$0</td>
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<tr>
<td>Industry</td>
<td>0</td>
<td>$0</td>
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### Summary

This dashboard provides a comprehensive overview of claims data, including risk scores, payment summaries, and benchmarking metrics for John Doe, a company, and the industry. The data is presented visually through charts and graphs to facilitate easier analysis and comparison.
Predictive Analytics – Talking Points

- How do you determine where to allocate risk management resources?
- When can we influence the outcome of a claim?
- What makes analytics understandable to you?
- Is pre-claim or post-claim analytics more interesting to you?
- What makes analytics most effective?
Risk Management Credit

BACK TO WORK
Timing – Loss development

$\uparrow$

ACCIDENT OCCURS

CLAIM REPORTED

TIME

CLAIM SETTLED

$\uparrow$

INVESTIGATE

NEGOTIATE

?
Claims Handling –
Quicker Payments/Reserving/Reporting
New Safety Initiative
Claim Analytics Support
Other Support
Risk Management Credit – Talking Points

- What are effective techniques/strategies employed by risk management to better control losses?

- How long should it take to get credit?

- What can be provided as “ammunition” to showcase risk management?

- Who should the support be provided to?
Actuarial Results To The C-Suite

Here’s a remarkable idea, rendered lifeless in 127 monochromatic slides that I’ll read word by word for the next 90 minutes.

© 2009
TomFishburne.com
### How Detailed?

#### Reported Losses & Allocated Loss Adjustment Expenses (Net of Salvage & Subrogation Received): Bodily Injury

**Evaluation Point (measured in months):**

<table>
<thead>
<tr>
<th>From - To</th>
<th>15</th>
<th>27</th>
<th>39</th>
<th>51</th>
<th>63</th>
<th>75</th>
<th>87</th>
</tr>
</thead>
<tbody>
<tr>
<td>4/1/2001 - 3/31/2002</td>
<td>$162,216</td>
<td>$252,399</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>4/1/2002 - 3/31/2003</td>
<td>$201,106</td>
<td></td>
<td></td>
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**Link Ratios**

<table>
<thead>
<tr>
<th>From - To</th>
<th>15 - 27</th>
<th>27 - 39</th>
<th>39 - 51</th>
<th>51 - 63</th>
<th>63 - 75</th>
<th>75 - 87</th>
<th>87 - Ult</th>
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<tbody>
<tr>
<td>4/1/1996 - 3/31/1997</td>
<td>2.714</td>
<td>1.051</td>
<td>1.020</td>
<td>1.067</td>
<td>0.987</td>
<td>0.976</td>
<td>1.040</td>
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<tr>
<td>4/1/1997 - 3/31/1998</td>
<td>1.319</td>
<td>1.005</td>
<td>1.060</td>
<td>1.000</td>
<td>1.000</td>
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<td></td>
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<tr>
<td>4/1/1998 - 3/31/1999</td>
<td>1.328</td>
<td>1.050</td>
<td>1.001</td>
<td>0.992</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>4/1/1999 - 3/31/2000</td>
<td>1.066</td>
<td>0.964</td>
<td>1.041</td>
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<td></td>
<td></td>
<td></td>
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<tr>
<td>4/1/2000 - 3/31/2001</td>
<td>1.378</td>
<td>0.919</td>
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<td></td>
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<td>4/1/2001 - 3/31/2002</td>
<td>1.556</td>
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</table>

**Indicated Link Ratios and Tail Factors**

<table>
<thead>
<tr>
<th>From - To</th>
<th>15 - 27</th>
<th>27 - 39</th>
<th>39 - 51</th>
<th>51 - 63</th>
<th>63 - 75</th>
<th>75 - 87</th>
<th>87 - Ult</th>
</tr>
</thead>
<tbody>
<tr>
<td>Median</td>
<td>1.353</td>
<td>1.005</td>
<td>1.030</td>
<td>1.000</td>
<td>0.993</td>
<td>0.976</td>
<td>1.040</td>
</tr>
<tr>
<td>All Accident Periods Averaged</td>
<td>1.560</td>
<td>0.998</td>
<td>1.030</td>
<td>1.020</td>
<td>0.993</td>
<td>0.976</td>
<td>1.040</td>
</tr>
<tr>
<td>All Accident Periods Weighted</td>
<td>1.435</td>
<td>1.010</td>
<td>1.027</td>
<td>1.015</td>
<td>0.994</td>
<td>0.976</td>
<td>1.040</td>
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<tr>
<td>Latest 3 Accident Periods Averaged</td>
<td>1.333</td>
<td>0.978</td>
<td>1.034</td>
<td>1.020</td>
<td>0.993</td>
<td>0.976</td>
<td>1.040</td>
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<tr>
<td>Latest 3 Accident Periods Weighted</td>
<td>1.293</td>
<td>0.998</td>
<td>1.030</td>
<td>1.015</td>
<td>0.994</td>
<td>0.976</td>
<td>1.040</td>
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<tr>
<td>Average excluding high &amp; low</td>
<td>1.395</td>
<td>1.007</td>
<td>1.030</td>
<td>1.000</td>
<td>0.993</td>
<td>0.976</td>
<td>1.040</td>
</tr>
<tr>
<td>Selected Link Ratios</td>
<td>1.293</td>
<td>0.998</td>
<td>1.030</td>
<td>1.015</td>
<td>0.994</td>
<td>0.976</td>
<td>1.040</td>
</tr>
</tbody>
</table>

**Development Factors**

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<th>From - To</th>
<th>15 - Ult</th>
<th>27 - Ult</th>
<th>39 - Ult</th>
<th>51 - Ult</th>
<th>63 - Ult</th>
<th>75 - Ult</th>
<th>87 - Ult</th>
</tr>
</thead>
<tbody>
<tr>
<td>For Selected Link Ratios</td>
<td>1.361</td>
<td>1.052</td>
<td>1.054</td>
<td>1.024</td>
<td>1.009</td>
<td>1.015</td>
<td>1.040</td>
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</tbody>
</table>

**Ultimate Losses & Allocated Loss Adjustment Expenses**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Ultimate</td>
<td>$273,631</td>
<td>$255,508</td>
<td>$256,212</td>
<td>$283,645</td>
<td>$506,344</td>
<td>$501,495</td>
<td>$424,453</td>
</tr>
</tbody>
</table>
Summarize Changes

Why?
Benchmarks
Presenting to C-Suite – Talking Points

- What do you present to your C-Suite?

- Which changes and loss drivers are on their radar?

- Are graphs, charts or numbers more effective?

- Is it better to provide more or less detail?

- What are some appropriate benchmarks and how do you ensure they are on an “apples to apples” basis?
Handling Unique Risks
Broker is Important
Cyber Liability – Talking Points

- Is cyber liability the domain of risk management or IT?
- Is coverage available at a reasonable price?
- How do you determine adequate retention/limit?
- What to do after a breach?
D&O – Talking Points

- Should this risk be retained or insured?
- Specialized brokers
- Necessary coverage to get good board members
- Type of claims are unique to company structure
Asbestos & Environmental – Talking Points

- Will the asbestos claims ever end?
- What policy takes precedence?
- Jurisdiction is extremely important
- Who will pay the claims?
Warranty – Talking Points

- Claims handling is key
- Goodwill – cost vs. customer retention
- Beware of the bathtub
- Not all actuaries understand this liability
## Contact Information

<table>
<thead>
<tr>
<th>Presenter</th>
<th>Phone</th>
<th>E-Mail</th>
</tr>
</thead>
<tbody>
<tr>
<td>Richard Frese</td>
<td>(312) 499-5648</td>
<td><a href="mailto:Richard.Frese@Milliman.com">Richard.Frese@Milliman.com</a></td>
</tr>
<tr>
<td>Elizabeth Bart</td>
<td>(312) 499-5706</td>
<td><a href="mailto:Elizabeth.Bart@Milliman.com">Elizabeth.Bart@Milliman.com</a></td>
</tr>
<tr>
<td>Michael Paczolt</td>
<td>(312) 499-5720</td>
<td><a href="mailto:Michael.Paczolt@Milliman.com">Michael.Paczolt@Milliman.com</a></td>
</tr>
<tr>
<td>Tony Bloemer</td>
<td>(312) 499-5594</td>
<td><a href="mailto:Tony.Bloemer@Milliman.com">Tony.Bloemer@Milliman.com</a></td>
</tr>
<tr>
<td>Doug Nishimura</td>
<td>(312) 499-5591</td>
<td><a href="mailto:Doug.Nishimura@Milliman.com">Doug.Nishimura@Milliman.com</a></td>
</tr>
</tbody>
</table>
CURRENT RESPONSIBILITY

Richard is an actuary in the Chicago Casualty practice of Milliman. He joined the firm in 2002.

EXPERIENCE

Richard’s expertise in property and casualty primarily involves loss reserving and forecasting for self-insured clients in the area of medical malpractice and workers’ compensation liability. He also has extensive experience in commercial lines, including workers’ compensation, professional liability, general liability, auto liability, and property insurance. His clients include captives, Fortune 500 corporations, healthcare institutions, privately held companies, public entities, and risk-retention groups.

PUBLICATIONS

- “Does Your Self-Insured Program Need A Tune-up?,” 2011, Risk Management

PROFESSIONAL DESIGNATIONS

- Fellow, Casualty Actuarial Society
- Member, American Academy of Actuaries

EDUCATION

- BS, Actuarial Science, University of Illinois, Urbana-Champaign

COMMITTEES

- Joint CAS/SOA Committee on Career Encouragement – 2010 to Present
- Casualty Actuarial Society New Members Committee - 2010 to Present

PRESENTATIONS

- “Actuaries and Claims Management: A Critical Partnership,” 2013 The Claims Association of Greater Chicago
- “A Statistical Approach To Validating Your Program Differentiation,” 2013 National RIMS Conference
- “Reserve Setting, Financial Impact,” 2013 Northwestern Ohio Self-Insurers Association
- “Your Actuarial Report: From The Loss Run To Meaningful Results”, 2014 REBEX Conference
Elizabeth Bart  
FCAS, MAAA  
Consulting Actuary

CURRENT RESPONSIBILITY

Elizabeth is an actuary in the Chicago office of Milliman. She joined the firm in 2007. Prior to joining Milliman, Elizabeth had four years of experience with a large international insurance company.

EXPERIENCE

Elizabeth’s area of expertise is property and casualty insurance, including loss reserving and ratemaking. She has extensive experience in commercial lines, including workers’ compensation, professional liability, general liability, and auto liability. Elizabeth’s clients include Fortune 500 corporations, healthcare institutions, privately held companies, commercial insurers, and risk retention groups.

PUBLICATIONS

- “Predictive Analytics for Self-Insureds,” 2013, Insight
- “Ever-increasing unpaid claim liabilities: When does the growth stop?,” 2013, Insight
- “Cyber risk management: Breaches, threats, and vulnerabilities,” 2012, Insight
- “Product liability: On your shelves but not on your balance sheet?,” 2012, Insight

PROFESSIONAL DESIGNATIONS

- Fellow, Casualty Actuarial Society
- Member, American Academy of Actuaries

COMMITTEES

- Committee on Professionalism Education

EDUCATION

- BA, Statistics, Northwestern University

PRESENTATIONS

- “Actuarial Insight: Financial Reporting and Beyond,” 2013 IASA Spring Chicagoland Chapter meeting
- “Ethical Considerations for Brokers,” 2011 Corvel Broker U
CURRENT RESPONSIBILITY

Mike Paczolt is a consulting actuary in the Chicago Casualty practice of Milliman. He joined the firm in 2007.

EXPERIENCE

Mike’s area of expertise is property and casualty insurance, including pricing, reserving, actuarial opinions, new product development, mergers and acquisitions, and captive feasibility studies. His client base includes insurers, captives, self-insureds/large deductible programs, MGAs, retailers and start-up ventures.

In addition to his experience in traditional property and casualty exposures, Mike has a special focus on warranties, extended warranties, and service contracts. He speaks regularly at conferences such as the Warranty Chain Management and Warranty Innovations conferences, as well as being an Advisory Board Member of the Global Warranty & Service Contract Association (GWSCA).

In addition, Mike also concentrates on providing analytics and predictive modeling solutions to his client base by applying traditional modeling approaches such as Generalized Linear Models (GLMs) and Machine Learning approaches such as regression trees and clustering.

PROFESSIONAL DESIGNATIONS

- Fellow, Casualty Actuarial Society
- Member, American Academy of Actuaries

AFFILIATIONS

- CAS Exam Committee, 2010 - 2013
- CAS Volunteer Task Force, 2010 – 2011
- Advisory Board Member, GWSCA, 2013-Current

EDUCATION

- BS, Actuarial Science, University of Illinois at Urbana-Champaign
- MS, Predictive Analytics, Northwestern University

PUBLICATIONS

- Insight online, “Illinois Reform Expected to Result in 8.5%-12.75% Decrease in Workers’ Compensation Costs,” August 3, 2011
Tony F. Bloemer
FCAS, MAAA
Principal & Consulting Actuary

CURRENT RESPONSIBILITY
Tony is a Principal and Consulting Actuary in the Chicago Casualty practice of Milliman. He joined the firm in 1998.

EXPERIENCE
Tony is a Fellow of the Casualty Actuarial Society and a Member of the American Academy of Actuaries. Tony’s area of expertise is property and casualty insurance, including loss reserving and ratemaking. Tony has extensive experience in commercial lines, including workers’ compensation, professional liability, general liability, auto liability, and extended warranty insurance. Tony’s clients include Fortune 500 corporations, healthcare institutions, privately held companies, public entities, commercial insurers, reinsurers and risk retention groups.

EDUCATION
- BS, Actuarial Science, University of Illinois at Urbana-Champaign

PROFESSIONAL DESIGNATIONS
- Fellow, Casualty Actuarial Society
- Member, American Academy of Actuaries

COMMITTEES
- Casualty Actuarial Society Professionalism Committee – 2005 to 2008
- Casualty Actuarial Society Syllabus Committee Liaison – 2008 to 2010
- Casualty Actuarial Society Exam Committee – 2006 to 2014
- Casualty Actuarial Society Education Implementation Task Force – 2013 to 2014

PRESENTATIONS AND PUBLICATIONS
- Illinois House of Representatives Legislative Hearings on Medical Liability Reform – 2005
- “What is IBNR?” - 2006 Missouri Self-Insurers Association Annual Meeting
- “Actuarial Professionalism” - 2007 Midwest Actuarial Forum
- “The Forgotten Hospital Liability: Booking IBNR for Workers’ Compensation” - 2008 Risk & Insurance Magazine
- “Make Your Actuary Work For You,” - 2009 Jointly sponsored Chicago Hospital Self-Insured Conference
- “Utilizing Advanced Pricing Methodologies” - 2011 Warranty Chain Management Conference
- “Predictive analytics can lower self-insureds’ costs ” – September 10, 2012 Business Insurance
- “Explaining Workers’ Compensation Liability and Trends to the C Suite” - 2014 Workers’ Compensation Educational Conference
- “Preparing for the Boomers ” – September, 2014 Captive Review
CURRENT RESPONSIBILITY

Doug is an Associate of Risk Management and serves as a consultant with the Chicago casualty practice of Milliman. He joined the firm in 1998.

EXPERIENCE

Doug's area of expertise is property and casualty insurance, including loss reserving and ratemaking. Doug has extensive experience in commercial lines, including professional liability, general liability, workers' compensation, auto liability, director and officers liability, unemployment compensation, and warranty contracts. Many of Doug's clients include commercial insurance buyers, healthcare institutions, physicians groups, and risk retention groups.

Prior to joining Milliman, Doug acquired 20 years of experience with another national actuarial consulting firm. Doug has experience in actuarial science, statistics, and system analysis. His varied experience provides him with a unique perspective to serve client needs.

PROFESSIONAL DESIGNATIONS

Associate of Risk Management

EDUCATION

BS, Quantitative Methods, University of Illinois, Chicago