



## Limited Attendance Seminar on Reserve Variability Course Outline

Seminar Times: 8:00am to 5:00pm  
Breaks: 10:30 to 10:45 and 3:30 to 3:45  
Lunch: 12:30 to 1:30  
Number of Days: 3 (including optional half day)  
Maximum Size: 35 participants

**Overall Objective:** Develop a better understanding of reserve variability models and how they can be tested in order to find the “best” estimate of the unpaid claim distribution

**Target Audience:** All Actuaries

### **Learning Objectives:**

1. Review of Statistical Concepts (webinar)
2. Understanding of Ranges vs. Distributions
3. Knowledge of Statistical Modeling Techniques
4. Hands on Use of Models, with Emphasis on Simulation Models
5. Understanding of Diagnostic Testing
6. Understanding of Model Strengths & Weaknesses
7. A Better Understanding of Quantifying and Communicating Uncertainty

### I) **INTRODUCTION**

- A) Welcome & Introductions
- B) Seminar Overview & Organization
- C) Why are we having this workshop?

### II) **MODELING BASICS**

- A) Review of Statistics
- B) Normal Distribution
- C) logNormal Distribution
- D) Pareto Distribution
- E) Poisson Distribution
- F) Negative Binomial Distribution
- G) Gamma Distribution
- H) T-Distribution
- I) Correlation





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## III) **RANGES vs. DISTRIBUTIONS**

- A) Definition of Terms
- B) Ranges vs. Distributions
- C) Methods vs. Models
- D) Types of Methods/Models
- E) Advantages of Distributions

## IV) **SOME BASIC MODELS**

- A) Introduction to Notation
- B) Stochastic Loss Development Factor Models
  - 1. Bootstrap Model (Non-Parametric)
  - 2. logNormal Model
  - 3. Mack Model

## V) **DIAGNOSTIC TESTING**

- A) The Need for Testing
- B) Fundamental Questions
- C) Modeling Goals
- D) Diagnostic Tests

## VI) **SOME INTERMEDIATE MODELS**

- A) Collective Risk Model
- B) Bootstrap Model (Parametric)
- C) Correlation

## VII) **SOME ADVANCED MODELS**

- A) Tail Factors
- B) Parameter Risk Under
- C) Underwriting Cycles
- D) Unexpected Inflation
- E) Using R's ChainLadder library

## VIII) **PRESENTING MODEL RESULTS**

- A) Presentation Goals
- B) Presenting Numbers
- C) Presenting Graphs
- D) Presentation Format





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E) Working Parties

### IX) **STANDARDS OF PRACTICE**

- A) Accounting Standards
- B) Actuarial Standards
- C) Unpaid Claim Estimate Standard
- D) A Look to the Future

### X) **CLOSING**

- A) Did we Reach Our Goals?

