TreeAge Pro Training:
Advanced Markov/Discrete Event Simulation

Agenda

1. **Compare Model Types and Analyses**
   - Markov Cohort vs. Markov Patient-Level Simulation
     - Change cycle length
   - Markov Patient-Level Simulation vs. Discrete Event Simulation
     - Study the correlation between probability values and time-to-event values
   - Determine the number of iterations required for stable analysis results

2. **Build/Analyze Markov Simulation Model**
   - Use individual model data (events, characteristics and treatments) to alter values (rewards, probabilities) in Markov models
   - Create nested clones within Markov model
   - Create complex variable definitions referencing trackers and tables
   - Analyze Markov simulation model and interpret results

3. **Build/Analyze a Discrete Event Simulation Model**
   - Build Discrete Event Simulation (DES) model
   - Analyze DES model via Microsimulation
   - Run sensitivity analysis on DES model
     - One-way sensitivity analysis
     - Probabilistic sensitivity analysis

4. **Additional Techniques & Analyses**
   - Simulation Time Reporting
     - Track patients in model
     - Generate cohort-level details from patient simulation analysis
   - Global Matrices
   - Discounting
   - Subgroup Analysis
     - Heterogeneity via sampling or bootstrapping
     - Identify subgroups via simulation filtering
     - Configure models for subgroup analyses
   - Budget Impact
     - Create dynamic cohort to see cost changes for cohort by year
   - Screening Tests & Bayes’ Revision
     - Apply Bayes’ Revision to compare the value of two screening tests