What's New in SigmaXL Version 9.1

New features in SigmaXL Version 9.1 include:

- **Statistical Tools > Advanced Multiple Regression > Fit Multiple Regression Model**
  - Standardization and coding of continuous predictors
  - Option to display regression equation with unstandardized coefficients
  - (1, 0) or (-1,0,+1) coding of categorical predictors
  - Box-Cox Transformation
  - Specify confidence level
  - Residual Plots (Regular, Standardized, Studentized – Deleted t)
  - Main Effects and Interaction Plots (Fitted Means)
  - Contour and Surface Plots
  - Optimization with optional constraints
  - Automatic removal of extreme VIF or collinear terms (with alias and removal report)
  - Specify interactions, quadratic and higher orders (all interactions or up to 3-Way)
  - ANOVA Type I and/or Type III Sum-of-Squares with Pareto of Percent Contribution and Standardized Effects
  - Lenth Pseudo Standard Error for Saturated Models (Orthogonal or Non-Orthogonal) with Monte Carlo or Student T P-Values
  - Specify Test/Withhold Sample for R-square Test & StDev Test Validation
  - R-Square Predicted (Leave-One-Out Cross Validation)
  - R-Square K-Fold & StDev K-Fold (K-Fold Cross Validation)
  - Test for Constant Variance: Breusch-Pagan. Anderson-Darling Normality test is applied to residuals in order to automatically select Normal or Koenker (Robust) version. Report includes the Overall test and Individual predictors as well.
  - White robust standard errors for non-constant variance (Heteroskedasticity-Consistent)
  - Durbin-Watson test for autocorrelation in residuals with P-Values
  - Newey-West robust standard errors for non-constant variance with autocorrelation (Heteroskedasticity and Autocorrelation-Consistent)
  - White or Newey-West automatically selected based on Durbin-Watson P-Values
  - Stepwise/Best Subsets Regression:
    - Forward/Backward with alpha-to-enter, alpha-to-remove
    - Forward Selection with alpha-to-enter
    - Backward Elimination with alpha-to-remove
    - Forward, Backward Criterion: Minimize AICc, BIC; Maximize R-Square Adjusted, R-Square Predicted, R-Square K-Fold

        - Best Subsets utilizes the powerful MIDACO Solver (Mixed Integer Distributed Ant Colony Optimization) to solve best subsets with up to hundreds of continuous or categorical variables, including interactions and higher order terms. This feature gives SigmaXL a significant advantage over competitors with Best Subsets limited to 30 continuous variables.
        - Best Subsets Criterion: Minimize AICc, BIC; Maximize R-Square Adjusted
        - Hierarchical option
        - Detailed report with additional statistics such as Condition Number and Mallows' Cp.
- **Statistical Tools > Advanced Multiple Regression > Multiple Response Optimization**
    - Multiple Response Optimization with Desirability
        - Multistart Nelder-Mead Simplex
        - MIDACO

- **Help > Summary of Graphical Tools**
- **Help > Summary of Statistical Tools**