BLACK-SCHOLES & MONTE CARLO SIMULATION OPTION PRICING MODELS ("OPM")

OPTION CALCULATION ASSUMPTIONS - (It is recommended that you save this file to a directory as soon as you download the Excel spreadsheet in order to preserve an original "master" version)**.**
This Excel spread sheet is on "manual calculation" mode. To initiate the "calculation" function, press the F9 function key several times then wait.

Because you are utilizing a Monte Carlo Simulation Option Pricing Methodology (which requires heavy-duty computer processing time), please give your computer at least two (2) to three (3) minutes to complete each required calculations - you will see the hour-glass processing icon cursor disappear when you computer completes the required calculations. Please be patient while your computer is making the calculations - there is some serious processing occurring.

	TYPE OF DATA - INPUT OR CALCULATED	VALUATION DATE	ASSUMPTIONS
VIX Options Index on Valuation Date (a measure of volatility) obtained from: **www.yahoo.com** - historical VIX (stock symbol is VIX) index records as of the valuation date:	Input	**December 31, 2012**	**18.02%**
Beta Statistic (a measure of volatility) - Designated by Standard Industrial Classification Code - Beta statistic can be obtained from "Ibbotson Cost of Capital 2012 Yearbook" - Data through March 2012:	Input		**1.05**
Time to Maturity of the Option - Black/Scholes / or Monte Carlo Simulation:	Input		**5.0**
Stock Price/or Business Enteprise Value (determined by user/analyst):	Input		**$ 100.00**
Option Exercise Price or "Strike" Price of the Option (Stock Price/or Business Enteprise Value) (determined by user/analyst):	Input		**$ 103.00**
Expected Annual Dividend (determined by user/analyst):	Input		**0.00%**
Risk Free Rate - 5 Year Treasury Bonds (source of data is the Federal Reserve web site - historical rates):	Input		**0.72%**
Marketability Discount - Calculated by Option Pricing Model ("OPM"):	**Calculated by the Black-Scholes Option Pricing Model ("BSOPM") for a "Put" option**		**16.38%**
"**Call**" Option Value - Calculated by the Black-Scholes Option Pricing Model :	**Calculated by the Black-Scholes Option Pricing Model ("BSOPM") for a "Call" option**		**$ 17.02**
"**Put**" Option Value - Calculated by the Black-Scholes Option Pricing Model :	**Calculated by the Black-Scholes Option Pricing Model ("BSOPM") for a "Put" option**		**$ 16.38**

FOR MONTE CARLO SIMULATION (Additional Assumptions):

The Monte Carlo simulation approach is another technique that can be applied to valuing "Real Options", that is European-style options that can only be exercised at the date of expiration of the option. This approach does allow the integration of multiple sources of uncertainty without the restrictions on distribution. The limitation of the Monte Carlo approach, however, is similar to the Black-Scholes formula in that **it is not as well suited** to value American-style "Real Options", where the option can be exercised at any time during the term of the option.

Number of Times Steps (breaks down the time to option expiration in time intervals**) should be greater than 750 steps:**	Input		**800**
Number of Simulations (the number of simulations varying the various assumptions**) should be 300 simulations or higher:**	Input		**800**
Option value - Calculated by the Monte Carlo Simulation Model :	**Calculated by the Monte Carlo Simulation Model - for a "Call"/ or "Put" option**	**Put**	**$ 16.42**