

Sorin R. Straja, PhD

Curriculum Vitae

Currently, Vice President for Science and Technology of the Institute for Regulatory Science (RSI) and Chief Financial Engineer with Montgomery Investment Technology, Inc (MITI). He has over 25 years of expertise in mathematical modeling and software development as applied in engineering and risk assessment.

Sorin Straja served as Principal Technical Secretary for peer review activities at RSI and to numerous Review Panels established by the American Society of Mechanical Engineers (ASME) to review a significant number of projects supported by the U.S. Department of Energy. His research activities include: feasibility and economical reviews for different technologies; development of software for generalized linear models; multicriterial optimization; runaway chemical reactors; development of pharmacokinetic-based mathematical models for cancer risk assessment; enhanced models for exposure assessment and life-expectancy-based cost-benefit analysis; stochastic modeling and computer simulation of atmospheric pollution and related problems.

As a financial engineer and risk consultant with MITI, he is involved in statistical analysis and stochastic calculus for financial markets: tests for normality and autocorrelation; identification of outliers and high-leverage data; parameters estimation and models discrimination; statistical hypotheses testing; discriminant analysis; valuation of bonds and derivative securities based upon stochastic models such as Black-Scholes, Constant Elasticity of Variance, Diffusion-Jump, Vasicek, Cox-Ingersoll-Ross, Ho-Lee, Hull-White; valuation of exotic stock options; time-series analysis and forecast for electricity prices using FFT and ARMA modeling; value at risk for stocks, options, futures; capital investment under uncertainty based upon the Dixit-Pindyck model; fractal analysis; and neural networks for stock markets.

Prior to joining RSI in 1996, Sorin Straja served as Director of the Department of Occupational Health and Safety of Temple University, Philadelphia, where he managed the chemical laboratory inspection program and developed the required computer databases; developed a protocol for Indoor Air Quality assessment; performed microbiological procedures for counting and identifying microorganisms in air and water; performed gas chromatography analysis for air, water and soil analysis; investigated mathematical models for cancer risk assessment and uncertainties associated with it; and developed mathematical models for environmental assessment.

Previously, Sorin Straja served as Assistant Professor of Biostatistics at Temple University, Philadelphia; as a chemist with University of Maryland at Baltimore; and as a consultant (volunteer) at the U.S. Department of Agriculture. Sorin Straja has extensive experience in the chemical industry where he worked as a senior research and development consultant with the Chemical and Biochemical Energetics Institute, and as a

plant manager with Chemicals Enterprise Ducești and Plastics Processing Bucharest from Romania. He performed experimental program design; data acquisition and processing; physical and mathematical modeling; parameters estimation and models discrimination; computer simulation; process design and scale-up, for the following processes: methanol conversion to hydrocarbons, butadiene polymerization, catalase biosynthesis, hydrocarbons pyrolysis, vinyl chloride polymerization, Fischer-Tropsch synthesis, propenoxide isomerization. Sorin Straja integrated different technologies, such as methanol conversion to hydrocarbons and catalase biosynthesis, in order to improve the overall efficiency and minimize the waste treatment cost.

Sorin Straja is the author of three books and over 50 scientific papers published in peer-reviewed journals. He was an editor of *Environment International*, and currently is a contributing editor of *Technology*. Sorin Straja received a Certificate of Appreciation for Teaching from Temple University, the “Nicolae Teclu” Prize of the Romanian Academy, and a Certificate of Appreciation from U.S. Department of Agriculture for significant volunteer contributions. He is a Fellow of the Global Association of Risk Professionals, and a member of the American Chemical Society, and American Institute of Chemical Engineers.

Sorin Straja holds an M.S. degree in Industrial Chemistry and a Ph.D. in Chemical Engineering, both from Polytechnic Institute Bucharest.