**Dr. Elmor L. Peterson**

**Dr. Elmor L. Peterson career highlights**

**Owner Systems Science Research and Consulting**

July 2005 – Present

Mathematical modeling of complex economic and/or engineering systems relevant to industry, business, government, and the military -- to be able to "predict" both stationary and dynamic system behavior, in order to "prescribe" both optimal designs and subsequent optimal operating procedures, or to be able to "predict" game-theoretic equilibria for both "non-cooperative competition" (of a tactical nature) and "cooperative competition" (of a strategic nature). Research on the theory, algorithms, and software implementations of related equilibration, optimization, and mathematical programming methodology -- especially for prototype "posynomial geometric programming" PGP and its generalizations GGP. Recent advances include "novel reformulations" of all "well-defined" problems that are either LP (linear programming) or AGP (algebraically-nonlinear GGP) -- as equivalent "linearly constrained", "completely separable", "asymptotically linear", "convex" optimization problems -- to which "vector processing" can be "directly" applied. These reformulations greatly increase the sizes of the LP and AGP problems that are "numerically solvable" in "real time" by current "high-performance super computers" capable of "parallel processing". Some of these novel reformulations are also providing potentially important new approaches to both "general stochastic and robust optimization", as well as "integer programming".