

June 27, 2003

Dr John L Hennessy, President  
Stanford University  
Stanford, CA 94305

Dear Dr Hennessy,

Geostatistics is a flawed variant of classical statistics that violates the requirement of functional independence and ignores the concept of degrees of freedom. Geostatistics is used in mineral exploration and mining, environmental and geotechnical sciences, hydro- and petroleum geology, fish abundance estimation, and similarly large sample spaces with sparse data. Geostatisticians assume associative dependence between ordered data (spatial dependence in this context) rather than test for it. Not surprisingly, geostatistical peer review is a blatantly biased and shamelessly self-serving sham. Stanford's Professor Dr A G Journel is one of many academics entrusted with the development of dogma and the containment of criticism.

Geostatistics transmogrified a little placer gold into the largest phantom resource the world has never seen, and created scores of shrinking ore deposits. Kriging, the practice of computing distance-weighted averages at chosen coordinates, was used to infer that nuclear waste might safely be stored beneath Yucca Mountain. In classical statistics, all distance-weighted averages have their own variances. In geostatistics, central values of sets of independently measured data metamorphosed into kriged estimates. Kriging variances and covariances of sets of kriged estimates are senseless statistics but, incredibly, became the essence of geostatistics all the same.

My case against geostatistics is summarized in the attached letter to Dr W E Sharp, Editor of Mathematical Geology. Additional correspondence was assembled after my son and I found out in the early 1990s that geostatistics is fatally flawed. In my opinion, this case merits your attention and scrutiny. Stanford's outstanding scholars in classical statistics are no doubt aware that interpolation between independently measured values of a stochastic variable makes sense if, and only if, the ordered set displays a significant degree of spatial dependence. And surely, they will concur that kriging variances and covariances of sets of kriged estimates make silly statistics. I would very much appreciate your view on the matter.

Yours truly,

J W Merks  
President