

Pharmaceutical organizations are increasingly moving towards performing virtual clinical trials so as to reduce the cost and increase the efficiency of their scientific experiments. Statistical designing of some features of these virtual trials frequently involve understanding the evolutionary behavior of the process based on an observed phenomenon. Mathematical formulation of the problem lead to questions concerning the so called Gibbs Conditioning Principle. (GCP). In this talk, I will precisely describe the GCP and develop aspects of the GCP as they arise in two important problems in science and industry, namely, diagnosis of anthelmintic resistance in livestock and response adaptive clinical trials.