

**Society of Petroleum Engineers
Distinguished Lecturer 2016-17 Lecture Season**



**“Fooled by Randomness”
- Improving Decision Making With Limited Data**

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Abstract:

Professionals routinely face the challenge of making informed decisions with limited data sets. Our exploitation of Unconventional resource plays has exacerbated this issue. We commonly refer to these resource plays as “statistical plays”, as large programs have provided repeatable year over year results. Competitive pressures and the desire to get to the right answer as soon as possible has driven the observed decision-making based on limited data sets. In an environment where horizontal well costs can exceed \$10 MM and programs hundreds of millions of dollars, decisions based on limited wells have become our industry’s “money pits”. Development decisions are often made without due consideration for the representativeness of the data. Similarly, we frequently test new technologies with limited samples with the expectation that a simple arithmetic comparison of the average results can validate or refute their further application.

This talk presents the theory and utilization of aggregation curves as a pragmatic graphical approach to determining the uncertainty in the sampled mean relative to the desired average program outcome. The presentation will conclude with a discussion on the use of sequential aggregation plots as a graphical approach to validating the representativeness of our forecasted results versus findings based on limited actual results.

Biography:

James Gouveia is a Professional Engineer with a diverse technical, business and operations background. He has worked in a variety of technical and managerial assignments in exploration, reservoir engineering, strategic and business process planning, portfolio and risk management. From 1996 to 1999, Mr. Gouveia was Director of Risk Management for the Amoco Energy Group of North America. In this role he was accountable for assurance of consistent project evaluation of major capital projects. With BP, he was an Assurance champion and Asset manager. Jim has co-authored and presented papers, most recently as a contributing author to the SPEE’s 2011 Monograph 3, and SPE 175527 & 175888 & 121525. Mr. Gouveia is a member of APEGA, SPE, SPEE and AAPG. Mr. Gouveia is a partner in Rose & Associates LLP.