

The May 24, 2005 presentation by Richard O. Michaud, Ph.D., President, New Frontier Advisors LLC

## The Resampling Revolution in Portfolio Management: History, Recent Developments, Long-Term Implications

The Chicago chapter of the American Statistical Association is pleased to have Richard O. Michaud, Ph.D., President, New Frontier Advisors LLC, as the luncheon speaker on Tuesday, May 24, 2005, at 12:00 noon.

Monte Carlo simulation resampling methods are a pervasive feature of modern statistics today, but have only recently been introduced into portfolio optimization in practice (Michaud 1998). Although Monte Carlo methods have many applications in practical finance, their use for redefining portfolio optimality was unthinkable both theoretically and practically because of the dominance of Markowitz mean-variance (MV) optimization. Even today, nearly all commercially available optimization and asset allocation software ignores estimation error on portfolio optimality. One reason statistical approaches were never implemented is due to the computational intensity of resampling methods as well as the theoretical and pedagogical simplicity of MV efficiency. For the past 50 years, the investment community has overlooked the fact that MV optimization has little, if any, investment value and practical approaches to estimation error were a closed chapter.

The picture has changed dramatically with the application of resampling methods and high speed computer technology. Although it was always known that estimation error was a major concern, until Jobson and Korkie in the early 1980s and others, it was never adequately understood. More recently, properly applied resampling methods have been shown to produce a new, more intuitive, and far more effective definition of portfolio optimality. Indeed, recent research shows that resampling methods may be dominant even when compared to highly refined input estimation. A condensed review of the classical material and recent research will be presented.

Richard O. Michaud is President and Chief Investment Officer of New Frontier Advisors LLC. Dr. Michaud's research and consulting has focused on portfolio optimization, asset allocation, investment strategies, global equity management, stock valuation technology, statistical methods in finance, financial planning theory, behavioral finance, portfolio analysis and trading costs. He has a Ph.D. in mathematics from Boston University and has taught investment management at Columbia University.

He is a Graham and Dodd Scroll winner for his work on optimization, a former Director of the "Q" Group and an Editorial Board member of the *Financial Analysts Journal* and *Journal of Investment Management*. He has published a number of papers in academic and professional journals and two books: *Efficient Asset Management: A Practical Guide to Stock Portfolio Optimization and Asset Allocation*, Oxford University Press 1998; *Investment Styles, Market Anomalies, and Global Stock Selection*, Association for Investment Management Research (AIMR) 1999.

**The luncheon will be held at the East Bank Club, 500 N. Kingsbury, Chicago on Tuesday, May 24, at 12 noon.** Registration begins at 11:45 am. The luncheons usually go from noon to approximately 1 to 1:30 pm. The cost is \$25 for Chicago Chapter ASA members, \$30 for nonmembers. **Reservations for the luncheon can be made before Saturday, May 21**, by contacting by contacting Kate Juergens at 312-629-2400 or via e-mail to [kjuergens@smithhanley.com](mailto:kjuergens@smithhanley.com). Please include your name and telephone number in all messages. If you make a reservation but are unable to attend, Kate must receive your cancellation by 9 am Monday, May 23. Otherwise, we must ask that you pay, as the Chapter is liable for all meals ordered. As usual, the Lucile Derrick Fund will purchase a limited number of tickets for students who wish to attend.



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## William Kruskal, Statistician, 1919-2005

William Kruskal, an authority on theoretical statistics who helped the U.S. government bring statistical methods to bear on public policy issues, died of pneumonia on Thursday, April 21, at Bernard Mitchell Hospital in Chicago. He was 85.

Kruskal, the Ernest DeWitt Burton Distinguished Service Professor Emeritus in Statistics and the Harris Graduate School of Public Policy Studies at the University of Chicago, had also co-devised a technique that was incorporated into every major statistical package in use today.

Along with W. Allen Wallis, the founding Chairman of the University of Chicago's Statistics Department, Kruskal devised the Kruskal-Wallis test. "The test is found today under that name as part of every major statistical computation system," said Stephen Stigler, the Ernest DeWitt Burton Distinguished Service Professor of Statistics at the University of Chicago.

"The Kruskal-Wallis test was able to examine a set of data from several groups of subjects and test for potential differences among the groups," Stigler said. "The test had the great advantage of simplicity, in that it depended only upon the rank order of the observations, not upon their exact values." For example, in comparing groups of individuals' responses in a psychological study, it would be enough to say for every pair of responses which was larger. It would not be necessary to determine how much larger.

With another Chicago colleague, Leo Goodman, Kruskal co-authored a series of classic papers that brought a new sophistication to measuring the association between a pair of qualitative attributes—hair color and eye color, for example—that might occur in a given population.

He was president of the Institute of Mathematical Statistics in 1971, and of the American Statistical Association in 1982.

A memorial service for Kruskal will be held from 11 a.m. to noon Saturday, May 21, at Bond Chapel on the University of Chicago campus.

**Editor: Richard Smiley**

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For additional information about Chicago Chapter ASA, please visit our World Wide Web site [www.ChicagoASA.org](http://www.ChicagoASA.org). Also, visit the National ASA web site [www.amstat.org](http://www.amstat.org).

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