
INTERACTIVE OPERATIONS RESEARCH IN SPREADSHEETS

CENTER FOR ARMY ANALYSIS, FORT BELVOIR, VA

ORSA CEP 04-703

13-16 January, 2004

SYNOPSIS: Traditionally, forecasting, optimization, simulation and other methods of quantitative analysis required layers of technicians and hardware creating an algebraic curtain separating "operations" from "operations research." Today spreadsheet versions of these techniques can be applied (or misapplied) in the field on lap-top computers. The interactive nature of this environment enhances the more traditional applications of Operations Research by allowing rapid response to changing conditions, and clear communication of results.

As an analogy, traditional Operations Research is like heavy field artillery, which is set up, aimed at a large stationary target, and finally fired. Interactive Operations Research is closer to tracer-firing automatic weaponry, ideal for small moving targets.

Students will receive numerous examples on disk, including spreadsheet software which implements Forecasting, Monte Carlo Simulation, Linear Programming, Decision Trees, and Markov Chains in Spreadsheets.

Topics to be covered include:

- **Modeling in Spreadsheets**
- **Simulation**
- **Decision Trees**
- **Integer Programming**
- **Stochastic Optimization**
- **Markov Chains**
- **Linear Programming**
- **Nonlinear Programming**
- **Optimal Real-time Targeting**
- **Optimal Force Deployment**

TEXTS: Participants will receive the text **Decision Making with Insight** and the software package **Insight 2.0 Commercial Edition**, Duxbury Press.

SAM SAVAGE: After receiving his Ph.D. in computer science from Yale University, Sam Savage spent a year at General Motors Research Laboratory. He joined the faculty of the University of Chicago Graduate School of Business in 1974 where he taught regular classes until 1990. He then developed a popular executive seminar series on Management Science in Spreadsheets.

In 1985, he led the development of the first widely marketed spreadsheet optimization package, What'sBest!®, which won PC Magazine's Technical Excellence Award. The second edition of DECISION MAKING WITH INSIGHT was published in January 2004. In his foreword to this work, Harry Markowitz, Nobel Laureate in Economics, refers to it as "a Must Read." Further accolades for the book include those of former Secretary of Defense Dr. William J. Perry, who says it "Hits you right where you learn," and OR/MS Today that stated, "Without question, the leader of the management science in spreadsheets movement is Sam Savage"

Dr. Savage is currently a Consulting Professor in the School of Engineering at Stanford University, where he teaches courses in Interactive Management Science. He consults and lectures extensively to business and government agencies and has served as an expert witness. He is the founder and president of AnalyCorp Inc., a firm that develops executive education programs and software for improving business analysis.

He has been published in both refereed journals and the popular press with recent articles in the Harvard Business Review, the Journal of Portfolio Management and Financial Planning Magazine.

ADMINISTRATIVE INFORMATION

PLACE: Class will be held at the Center for Army Analysis, Fort Belvoir, VA.

ELIGIBILITY: Military Officers who possess OPMS Functional Area 49 (ORSA) and civilian GS-1515 analysts. A graduate degree in ORSA or ORSA-related field is preferred.

CLASSIFICATION: Personnel attending the course must FAX their Security Status information via a Visitors Request Certification to the ATTN: Security Office at (703) 806-5723 or DSN 656-5723. Additional information: contact Ms. Linda Wilhite at 5059.

FUNDING: All costs for the course have been paid. Travel and TDY payments for all personnel must be made by the attendee's parent organization.

APPLICATION: Personnel desiring to attend should apply via their Training Officer through the Army Training Requirements and System (ATRRS), Course Code ALMC-SE, 03-703.

POINT OF CONTACT: Further information may be obtained from the ALMC web site at <http://www.almc.army.mil/SED/ALMC-SE/INDEX.ASP>.
