

Program in Brief

The program outline appears below. We welcome technical papers discussing methods or applications with a *potential* tie to defense and security issues. More details on the conference will follow. Check <http://www.armyconference.org> for official updates.

- **Welcome:**

John Sall, Co-founder and Executive Vice President, SAS

- **Short Course:**

- **Design of Experiments: New Methods and How to Use Them**

- A short course on Experimental Design offered by Douglas Montgomery (Arizona State University) and Bradley Jones (SAS JMP) will precede the conference on 18-19 October.

- **Invited Speakers:**

- J. Stuart Hunter (Princeton University) *Keynote*
A History of Experimental Design
 - Catherine Warner (Office of the Secretary of Defense, DOT&E)
New Directions for Test & Evaluation: Design of Experiments in Defense Acquisition
 - Francisco Samaniego (University of California, Davis)
Network Reliability: A Fresh Look at Some Basic Questions
 - Dan Nettleton (Iowa State University)
Multiple Testing Using Sequential Permutation P-Values
 - Richard Heiberger (Temple University)
RExcel for Experimental Design and Analysis
 - James R. Thompson (Rice University)
Thinking Outside the Box: Toward an Enhanced Role for Statistical Modeling in Army Decision Processes
 - Greg Hutto (53rd Wing Eglin Air Force Base)
Doing the Right Things: Experimenting So That Warriors Do Not
 - Brian Williams and David Higdon (Los Alamos National Laboratory)
Data Assimilation and Uncertainty Quantification for Complex Computer Models

- **Banquet Speaker:**

- Jon Weisz (Director of JMP Marketing, SAS Institute)
Title TBD

- **Special Sessions:**

- **Design of Experiments for Integrated Testing**

Organizer: Arthur Fries (Institute for Defense Analyses)

Nancy Dunn (US Army Evaluation Center)
A Framework for Using Design of Experiments Across and Within Test Events for DOD Systems Acquisition Testing

Jim Simpson (53rd Wing, Eglin Air Force Base)
Integrated Test via a Grid of Well-Designed Experiments

Donald P. Gaver and Patricia A. Jacobs (Naval Postgraduate School)
Evolutionary Test Design for Enhanced Binary Response

- **Case Studies in Army Applications of Statistics**

Organizers: COLs Andrew Glen and Rodney Sturdivant (United States Military Academy)

LTC Paul Kucik (United States Military Academy)
Educating Army Leaders in the Use of Statistical Methods to Enable Counter IED Operations

LTC William Kaczynzski (United States Military Academy)
Exact Customer Sojourn Time Distributions for the M/M/s Queue

LTC Tina Hartley, LTC Scott Nestler, & LTC Andrew Hall (United States Military Academy)
Modeling Officer Manpower

- **Social & Cultural Terrain**

Organizer & Chair: Edward Wegman (George Mason University)

Edward J. Wegman (Center for Computational Data Sciences, George Mason University)
Understanding Afghanistan

Armando Geller (Center for Social Complexity, George Mason University)
Data Acquisition and Data Employment Protocols for Multi-agent Modeling of Conflict

Tim Gulden (Center for Social Complexity, George Mason University)
Inferring Social Network Structure from Incident Size Distribution in Iraq

- **Health Science and Statistics in the DoD**

Organizer: Robyn Lee (Center for Health Promotion and Preventive Medicine)

JJ Knapik, DW Trone, L Brosch, KG Hauret, T Grier, SH Bullock, BH Jones.
(FACSM; US Army Center for Health Promotion and Preventive Medicine; Naval Health Research Center; 37th Medical Group, Lackland Air Force Base)
Meta-Analysis to Determine if Assigning Running Shoes Based on Footprint Shape Reduces Injury Risk in Military Basic Training

G. Zollner, D. Brambilla, T. Nolan, and C. Lim

(Walter Reed Army Institute of Research, RTI International, RTI International, Walter Reed Army Institute of Research)

Effect of Insecticide-Treated Bed Nets on the Feeding Behavior of Sand Flies in the Laboratory

Theresa Real (Armed Forces Health Surveillance Center / General Dynamics Information Technology)

SAS Enterprise Miner and Application to Health Sciences using the DMSS

- **Contributed Sessions**

- **Failure Models for Complex Systems**

Organizer: Mou-Hsiung (Harry) Chang (US Army Research Office)

The Percolated Beta-Binomial Distribution

Nozer D. Singpurwalla (The George Washington University)

Complex Failures in Fiber/Epoxy Composites under Tensile Load with an Application of Partition based Dirichlet Priors

Jayaram Sethuraman (Florida State University)

Spectral Approximation of Infinite-Dimensional Black-Scholes Equation with Memory

Mou-Hsiung (Harry) Chang (US Army Research Office)

- **Adversarial Risk Analysis**

Organizer: David Banks (Duke University)

Adversarial Risk Analysis: A Routing Game

Shouqiang Wang and David Banks (Duke University)

Adversarial Risk Analysis: Borel Games

David Banks, Francesca Petralia, Shouqiang Wang (Duke University)

Adversarial Risk Analysis in Bioterrorism

Juan Vivar (Duke University)

- **Contributed Speakers:**

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Predictive Modeling with Wide Data: Cross-Validation Model Comparison and Learning Curves

Russ Wolfinger, Pei-Yi Tan, and Padraic Neville (SAS Institute)

Fitting pdfs to Small Datasets

Jerry Alderman (Raytheon Missile Systems, retired)

Modeling, Simulating, Measuring, and Understanding Cooperation

Chris Arney, Kristin Arney, and Elisha Peterson (United States Military Academy)

Model Calibration through Minimal Adjustments

V. Roshan Joseph and Chia-Jun Chang (Georgia Institute of Technology)

Novel Experimental Design & Analysis Methods for Simulation Experiments Involving Algorithms

Terril N. Hurst, Joseph Chatterpaul, John S. Rhodes, and Keith Vander Putten (Raytheon Missile Systems)

Statistical Origins of Allometry

Bruce J. West (US Army Research Office)

Missile Fuse Experiment

William C. Thomas and Chris Schott (Raytheon Missile Systems)

Discovering Partially Ordered Patterns of Terrorism via Spatio-Temporal Data Mining

James A. Shine and James P. Rogers (US Army ERDC Topographic Engineering Center)

Shashi Shekhar and Pradeep Mohan (University of Minnesota)

Maximum Clarity: An Alternative to Minimum Aberration for Fractional Factorial Designs

Jose G. Ramirez (W.L. Gore and Associates) and Randall D. Tobias (SAS Institute)

Design of Experiments for Test and Evaluation: Best Practices and Future Challenges

Laura Freeman (Institute for Defense Analyses)

Comparison of Methods for Determining Sensitivity of Explosive Devices to Applied Stress

Allan T. Mense, Jerry Alderman (retired), and Don Woolley (Raytheon Missile Systems)

Regression Tree Models for Longitudinal Repeated Measures and Multivariate Response Data

Wei-Yin Loh (University of Wisconsin, Madison)

Design of Experiments in the Department of Defense

W. Ward Vaughn (Office of the Secretary of Defense)

3 Systems - 3 DOEs (UFHD / LVSR / CTN)

Swala Burns (Marine Corps Operational Testing and Evaluation Activity)

Random Contamination of Semiconductor Materials

Bernard Harris (Universities of Wisconsin and Nebraska)

Detection of Outliers in Spatial-temporal Data

James P. Rogers (US Army ERDC Topographic Engineering Center)

Clay Calibration: Radial Dependence of Calibration Drop Depths for Body Armor Testing

Shane Esola, Barbara Gillich*, Ward Boughers, Sandra Meiselwitz (US Army Aberdeen Test Center)

Meta-modeling of Personnel Entry into Collectively-Protected Shelters

Jack Edwards, Jung-li Choi, Jeffrey Eischen, Nathan Obringer (NC State University)

Harold Barnette and Gaurang Dave (Naval Surface Warfare Center)

Roger Gibbs (BSM, Inc.)

Large-scale Experimental Designs for Simulation

Susan M. Sanchez, Thomas W. Lucas, Paul J. Sanchez, and Christopher J. Nannini (Naval Postgraduate School)

Modeling with "Infinite" Bootstrapping

COL Andrew Glen, MAJ Chris Marks, & CDT Matt Robinson (United States Military Academy)

- **Events:**

- Social: Tuesday, October 19
- Wilks Award Banquet: Wednesday, October 20