

**FINAL AGENDA**  
**Eighteenth Army Conference on Applied Statistics**

*A Conference of the Interface Foundation of North America*

Monterey, CA  
24-26 October 2012

**Wednesday, October 24**

**0745 – 0815 Registration (Andalucía Ballroom)**

**0815 – 0830 Call to Order (Andalucía Ballroom)**

Allan Mense, Conference Chair, Raytheon Missile Systems

Welcome: Vice Admiral Daniel T. Oliver (Ret.), President, Naval Postgraduate School

**0830 – 0915 General Session I (Keynote Address) (Andalucía Ballroom)**

Chair: Allan Mense, Raytheon Missile Systems

*Three-Phase Optimal Design of Sensitivity Experiments*  
C.F. Jeff Wu, Georgia Institute of Technology

**0915 – 0930 Break**

**0930 – 1100 Special Session I, Reliability Growth (Andalucía Ballroom)**

Organizer & Chair: Arthur Fries, Institute for Defense Analyses

*Lessons Learned during the Test and Evaluation of Reliability Growth Programs*  
Angelo Christino, Robert N. Tamburello and Michael J. Cushing, Army Evaluation Center

*A Dynamic Competing Risk Model and Its Implications*  
Owen S. Martin, RSA Group

*Statistical Inference for a Parametric Model for Repairable Systems under Multiple Failure Modes*  
Ananda Sen, University Michigan

**1100 – 1115 Break**

**1115 – 1215 Contributed Session I (Andalucía-1) (Parallel Session)**

Chair: Charles E White, Walter Reed Army Institute of Research

*Measuring R50 in Aircraft Radar Blip Scan Data: Lessons Learned in Increasing Analysis Rigor*  
Todd Remund and Jeff Weisz, Edwards AFB, Colorado

*Confidence Intervals for Binary Responses - R50 & the Logistic Model*  
Arnon Hurwitz, Edwards Air Force Base

**Wednesday, October 24 (continued)**

**1115 – 1215 Contributed Session II (Andalucía-2) (Parallel Session)**

Chair:

*Detection of Changes in Resilience and Level of Coordination in Terrorist Groups*

Vasanthan Raghavan, Aram Galstyan and Alexander G. Tartakovsky, University of Southern California

~~*Consensus, Control and Minority Opinion (Withdrawn)*~~

Bruce J. West, U.S. Army Research Office

*Modern Screening Design of Experiments*

Tom Donnelly, SAS Institute, Inc.

**1215 • 1330 Lunch**

**1330 – 1500 Contributed Session III (Andalucía-1) (Parallel Session)**

Chair: Scott Hunter, Dugway Proving Ground

*A Bayesian Approach to Evaluation of Land Warfare Systems*

Lee S. Dewald, Virginia Military Institute; Robert Holcomb, Institute for Defense Analyses; Sam Parry Consultant, Institute for Defense Analyses; Alyson G. Wilson, IDA Science and Technology Policy Institute

*Statistical Models for Combining Information: Stryker Reliability Case Study*

Rebecca Dickinson, Virginia Tech University; Laura Freeman and Alyson Wilson, Institute for Defense Analyses

*F-16 Radar Performance Analysis: Do Bayesian Hierarchical Models Provide Better Insight into System Characterization than Standard Techniques?*

James Brownlow, Edwards Air Force Base

**1330 – 1500 Contributed Session IV (Andalucía-2) (Parallel Session)**

Chair: Jock Grynovicki, U.S. Army Research Laboratory

*DaViTo: An Open-Source Mapping, Graphics, and Analysis Tool*

Sam Buttrey, Naval Postgraduate School; James Henry, US Army; Lyn R. Whitaker, Naval Postgraduate School; Arnold Buss, Naval Postgraduate School

*Africa Knowledge, Data Source, and Analytic Effort Exploration*

MAJ Thomas Deveans, US Army TRADOC Analysis Center (TRAC) – Monterey

*Regression Trees for Censored Data with Applications to Subgroup Identification*

Wei-Yin Loh, University of Wisconsin

**1500 – 1515 Break**

**Wednesday, October 24 (continued)**

**1515 • 1715 Contributed Session V, (Andalucía-1) (Parallel Session)**

Chair: Karen Kafadar, Indiana University

~~*Achieving the First Reliability Benchmark of a Reliability Program Plan (Withdrawn)*~~  
Nathan Herbert, US Army Materiel Systems Analysis Activity

*Bayesian Methods at Edwards AFB*  
James Brownlow, Edwards Air Force base

*Accelerated Test Methods for Reliability Prediction*  
David H. Collins, Los Alamos National Laboratory; Jason K. Freels, Air Force Institute of Technology;  
Aparna V. Huzurbazar, Los Alamos National Laboratory; Richard L. Warr, Air Force Institute of  
Technology; Brian P. Weaver, Los Alamos National Laboratory

~~*Reliability Growth Projection Applicable to Multiple Units Under Test (Withdrawn)*~~  
Paul Ellner and Martin Wayne, US Army Materiel Systems Analysis Activity

*Discussion of Applying Bootstrap Method to Reliability Growth*  
Art Fries, Institute for Defense Analyses

*On the "No-Internal-Zeros Conjecture" for System Signatures in Reliability*  
Francisco Samaniego, University of California-Davis

**1515 • 1715 Contributed Session VI, (Andalucía-2) (Parallel Session)**

Chair: Lee Dewald, Virginia Military Institute

*Operational Risk Analysis: New Analysis Methods for Numerical and Non-numerical Survey Responses*  
Michele Wolfe, US Army TRADOC Analysis Center (TRAC)

*Speed vs. Accuracy, the Shooter's Dilemma*  
MAJ Benjamin Thirey and MAJ Christopher E. Marks, United States Military Academy

*Measurement System Analysis and Applications to Improvements in Body Armor Testing*  
Sandra Meiselwitz and Barbara J. Gillich, US Army Aberdeen Test Center

*Comparative Testing*  
Jacob J. Warren, Marine Corps Operational Test and Evaluation Activity – MCOTEA

**1830 • 2100 Wilks Award Banquet (Marbella)**

1830 – Social

1930 – Dinner

2015 – Banquet Address: Lt. General Robert G. Gard (Ret.), Monterey Institute of International Studies

2045 – Wilks Award

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**Thursday, October 25**

**0830 – 0915 General Session II (Andalucía Ballroom)**

Chair: COL Andrew Glen, United States Military Academy, West Point

*How to Complete the Incomplete: A Statistical Antidote for Incomplete Data Sets*

Ofer Harel, University of Connecticut

**0915 – 0930 Break**

**0930 – 1100 Special Session II, Simulation Experiments and Efficient Design (Andalucía Ballroom)**

Organizers: Tom Donnelly, SAS Federal; Alyson G. Wilson, IDA Science and Technology Policy Institute; David Webb, U.S. Army Research Laboratory

Chair: Tom Donnelly, SAS Federal

*Demystifying Kriging Models with Massive Data*

Peter Qian, University of Wisconsin

*Recent Breakthroughs in Large-Scale Simulation Studies*

Susan Sanchez, Thomas W. Lucas, Paul J. Sanchez, Alejandro Hernandez, Naval Postgraduate School

*Sequential Importance Sampling for Rare Event Estimation with Computer Experiments*

Brian Williams, Los Alamos National Laboratory

**1100 – 1115 Break**

**1115 – 1200 General Session III (Andalucía Ballroom)**

Chair:

*Designing Observational Studies to Avoid Being Misled*

Thomas E. Love, Case Western Reserve University

**1200 – 1315 Lunch**

**1315 – 1415 Special Session III, Design and Analysis of Observational Studies (Andalucía-1) (Parallel Session)**

Organizers: Alyson G. Wilson, IDA Science and Technology Policy Institute and Yevgeniya K. Pinelis, Center for Naval Analysis

Chair: Art Fries, Institute for Defense Analyses

*Propensity Score Analysis: Concepts, Issues, and Examples*

Wei Pan (Duke University)

*Designing Observational Studies to be More Like Randomized Experiments*

Michael Baiocchi (Stanford University)

**Thursday, October 25 (continued)**

**1315 – 1415 Contributed Session VII (Andalucía-2) (Parallel Session)**

Chair: William C. Thomas, Raytheon Missile Systems

*Continuous Updating Procedure for Flow Field Forecasting*

Kyle Caudle, South Dakota School of Mines & Technology and Michael Frey, Bucknell University

~~*Discrete Approximations of Controlled Stochastic Systems with Memory (Withdrawn)*~~

Mou-Hsiung (Harry) Chang, U.S. Army Research Office

*Operational Risk Analysis at TRAC*

Cindy Noble, US Army TRADOC Analysis Center (TRAC)

**1415 – 1430 Break**

**1430 – 1600 Contributed Session VIII, (Andalucía-1) (Parallel Session)**

Chair: Arthur Fries, Institute for Defense Analyses

*Computing POD for Structural Health Monitoring Systems*

Christine M Schubert Kabban, Air Force Institute of Technology; Mark M. Derriso, Air Force Research Laboratory; Brandon Greenwell, Air Force Institute of Technology

*Recognition of Microcalcifications in Mammograms: Feature Extraction*

Ben Riggan and Wesley Snyder, North Carolina State University; Robert Basilico, Rita Freimanis, and Joseph Mammarappallil, Wake Forest School of Medicine

*Geographical Trends in Cancer Mortality: Using Spatial Smoothers and Methods for Adjustment*

Karen Kafadar, Indiana University

**1430 – 1600 Contributed Session IX, Stochastic Optimization & Modeling 1 (Andalucía-2) (Parallel Session)**

Organizer: Janet Spoonamore, US Army Research Office

Chair: Haitao Li, University of Missouri, St. Louis

*Lookahead or Lookback: A Hybrid Architecture to Approximate Dynamic Programming*

Haitao Li and Keith Womer, University of Missouri, St. Louis

*Made-to-Order Production Scheduling using Bayesian Updating*

Keith Womer, J. Camm, C. Osterman, and Haitao Li, University of Missouri, St. Louis

*Uncertainty Quantification using Soft Information and Exponential Epi-splines*

Johannes O. Roysset, Naval Postgraduate School & Roger J-B Wets, University of California, Davis

**1600 – 1615 Break**

**Thursday, October 25 (continued)**

**1615 – 1745 Contributed Session X, (Andalucía-1) (Parallel Session)**

Chair: Yuanzhang Li, U.S. Army Medical Research and Materiel Command

*Developing Joint Model of Repeated Measure and Survival Outcome*

Jason Zhou and Harry Ji, Digital System, Inc., and Yuanzhang Li, U.S. Army Medical Research and Materiel Command

*DOE and Tolerance Design for Antenna Design*

William C. Thomas, Raytheon Missile Systems

~~*A Robotic Trenching Capability Experiment*~~ (Withdrawn)

Barry A. Bodt, U.S. Army Research Laboratory

*DOE at Dugway Proving Grounds*

Scott Hunter, US Army West Desert Test Center, Dugway Proving Grounds

**1615 – 1715 Contributed Session XI, (Andalucía-2) (Parallel Session)**

Chair: Lee Dewald, Virginia Military Institute

*Applications of Clustered Designs*

Selden Crary, NewallStreet, Inc.

*Verifying System Performance Using Designed Simulation Experiments*

Terril N Hurst, Allan T Mense, and Colin Pouchet, Raytheon Missile Systems

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**Friday, October 26**

**0800 – 0845 General Session IV (Andalucía Ballroom)**

Chair: Yuanzhang Li, Walter Reed Army Institute of Research

*Extracting Communities from Networks*

Ji Zhu, University of Michigan

**0845 – 0900 Break**

**0900 – 1030 Contributed Session XII, Stochastic Optimization & Modeling 2 (Andalucía Ballroom)**

Organizer: Janet Spoonamore, Army Research Office

Chair: Laura A. McLay, Virginia Commonwealth University

*Threshold Boolean Reformulation of Probabilistic Constraints with Multi-Row Random Technology Matrix*

Miguel Lejeune, George Washington University and Alexander Kogan, Rutgers University

**Friday, October 26 (continued)**

*An Integrated Model for Locating and Dispatching Ambulance*

Laura A. McLay and Sardar Ansari, Virginia Commonwealth University

*Characterizing Probability Distributions Using Econometric Concentrations*

Nozer D. Singpurwalla, George Washington University

**1030 – 1045 Break**

**1045 – 1245 Contributed Session XIII, Mathematical Modeling of Neural Processes in Decision Making (Andalucía Ballroom)**

Organizer: Janet Spoonamore, US Army Research Office

Chair: Holly Yanco, University of Massachusetts

*Divisive Normalization in Neural Circuits Drives Context-Dependent Choice*

Kenway Louie and Paul W. Glimcher, New York University

*The Role of Incentive Schemes in Probability Assessment under Uncertainty*

Adam S. Goodie, University of Georgia

*Neurally-Informed Graph-Based Transductive Models for Rapid Decision Making*

Paul Sajda, Columbia University

*Modeling Real and Artificial Neurons for Robot Control*

Holly Yanco and Abraham Shultz, University of Massachusetts

**1245 Adjourn**