Program

Conference on Applied Statistics in Defense

October 22-24, 2014
Bureau of Labor Statistics, Washington, DC
Sponsored by Interface Foundation of North America, Inc.

Monday, October 20

0900 - 1200 TUTORIAL

Statistical Methods for Product Life Analysis and Accelerated Testing
William Q. Meeker, Iowa State University

1200 - 1300 Lunch

1300 - 1700 TUTORIAL

Tuesday, October 21

0900 - 1200 TUTORIAL

1200 - 1300 Lunch

1300 - 1700 TUTORIAL

Wednesday, October 22

0845 - 0900 WELCOME REMARKS

0900 - 1015 GENERAL SESSION I: Wendy Martinez (Chair)

Shape Metrology
Antonio Possolo (Keynote), National Institute of Standards and Technology

1015 - 1030 Break

1030 - 1200 SPECIAL SESSION I: Predictive Analytics, Tom Donnelly (Organizer)

Practical Large-Scale Computer Model Calibration to Real Data
Robert Gramacy, University of Chicago

Interactive Model Building Using JMP
Chris Gotwalt, SAS Institute

Ensemble Methods in Data Mining
Andrew Fast and John Elder, Elder Research

1200 - 1300 Lunch

1300 - 1430

SPECIAL CONTRIBUTED SESSION I: Reliability, Rare Events, and Censored Data,
       Shuguang Song (Organizer)

Application of Failure Mode Distributions to Reliability Analysis of Combat Systems
Russell W. Morris, Technical Fellow of The Boeing Company

Statistical Tests for Rare Event Predictors
Dragos D. Margineantu, Technical Fellow of The Boeing Company

*Tensor Spline-Based Sieve Nonparametric Maximum Likelihood Estimation for Bivariate
Current Status Data*
Ying Zhang, Indiana University

CONTRIBUTED SESSION I: Avery (Chair)

*Building Requirements-Flow Models Using Bayesian Networks and Designed Simulation
Experiments*
Terril Hurst, Jarom Ballantyne, Allan Mense, Raytheon Missile Systems

Petri Net Models of Adversarial Scenarios in Safety and Security
David Collins, Aparna Huzurbazar, Los Alamos National Laboratory

Mixed Graphical Models via Exponential Families
Eunho Yang, Yulia Baker, Pradeep Ravikumar, Genevera Allen, and Zhandong Liu, University
of Texas at Austin

1430 - 1500 Break

1500 - 1600 GENERAL SESSION II: Alyson Wilson (Chair)

Mixing Apples and Oranges: Complex System Reliability with Multi-Modal Testing
Shane Reese, Brigham Young University

1600 - 1700 CLINICAL SESSION: Reliability, Conover (Chair)

Discussants: William Q. Meeker, Iowa State and Shane Reese, Brigham Young University

Prospective Application of System Reliability Concepts and Methods to Analysis of Survey Participation
John L. Eltinge, US Bureau of Labor Statistics

1800 - 2030 WILKS AWARD BANQUET

John Eltinge, US Bureau of Labor Statistics (Speaker), *Big Data*

Thursday, October 23

0900 - 1000 GENERAL SESSION III: Barry Bodt (Chair)

Applications of the Extremogram to Time Series and Spatial Processes
Richard Davis, Columbia University

1000 - 1030 Break

1030 - 1200

CONTRIBUTED SESSION II: Thomas (Chair)

Bayesian Estimation Under Informative Sampling
Terrance D. Savitsky, Daniell Toth, and Michail Sverchkov, Bureau of Labor Statistics

How Bayesian Reliability Analysis was Developed and Implemented for Production Decisions
Bruce Baber (USAF, Eglin AFB, FL), Allan T. Mense (Raytheon Missile Systems), C. Shane Reese (Brigham Young University)

CONTRIBUTED SESSION III: Collins (Chair)

Multi-Criteria Decision Analysis on Aircraft Stringer Selection
Shuguang Song, The Boeing Company

Convergence of Cyclic Stochastic Optimization and Generalizations
Karla Hernandez and James Spall, The Johns Hopkins University Department of Applied Mathematics and Statistics and Applied Physics Laboratory

Modeling the Active and Idle Durations of Network Hosts
Soumyo Moitra, CERT/Software Engineering Institute, Carnegie Mellon University

1200 - 1300 Lunch

1300 - 1430 SPECIAL SESSION II: Applications of Multivariate Heavy Tailed Statistics, Savitsky (Chair), Organizer: Sidney Resnick, Cornell University

Tail Inference: Where Does the Tail Begin?
Gennady Samorodnitsky, Cornell University

Computational Tools for Non-Gaussian Multivariate Distributions
John Nolan, American University

Sampling Heavy Tailed Multivariate Distributions on Large Networks
Don Towsley, University Massachusetts

Models with Hidden Regular Variation: Generation and Detection
Sidney Resnick, Cornell University

1430 - 1500 Break

1500 - 1600 GENERAL SESSION IV: Art Fries (Chair)

Model-based Clustering of Large Networks
David Hunter, Penn State University

Friday, October 24

0900 - 1030

CONTRIBUTED SESSION IV: Laura Freeman (Chair)

Automatic Defect Searching and Categorization, Method and Application
David Hughes and Bill Thomas, Raytheon Missile Systems

Constructing a Movement Model for a Small Unit
Vince Pulido, Craig Lennon, Mary Anne Fields, Laura Barnes, University of Virginia and Vehicle Techonology Directorate, Army Research Laboratory

Empirical Signal to Noise Ratios for Operational Tests
Matt Avery and Kelly McGinnity, Institute for Defense Analyses

An Autonomous Robotic Trenching Experiment
Barry Bodt, Craig Lennon, and Marshal Childers (U.S. Army Research Laboratory), Richard Camden (Engility Corporation), and Nicolas Hudson (Jet Propulsion Laboratory)

CONTRIBUTED SESSION V: McCardle (Chair)

Success Indicators in the USMA Advanced Core Mathematics Program
Pamela Harris, Jarrod Shingleton, James Starling, and Christopher Thoma, USMA

The Economy and Enlisted Retention in the Navy
Jane Pinelis and Jared Huff, CNA Center for Naval Analyses

Comparative Analysis of TAR, SEHM, and HMM Frameworks in Modeling the Activity Profile of Terrorist Groups
Vasanthan Raghavan, Qualcomm Flarion Technologies

1030 - 1100 Break

1100 - 1200 GENERAL SESSION V: Arney (Chair)

A Statistical Analysis of a Time Series of Twitter Graphs
David Marchette, Naval Surface Warfare Center, Dahlgren Division

1200 - 1300 Lunch

1300 - 1430

CONTRIBUTED SESSION VI: Marchette (Chair)

Applying Risk Analysis to Acceptance Testing of Combat Helmets
Janice Hester and Laura Freeman, Institute for Defense Analyses

Statistical Issues in Combat Helmet Acceptance Testing
Robert G. Easterling, Sandia National Laboratories (retired)

Science of Test: Improving the Efficiency and Effectiveness of DoD Test and Evaluation
V. Bram Lillard and Laura Freeman, Institute for Defense Analyses

CONTRIBUTED SESSION VII: Jane Pinelis (Chair)

Analysis of High-Dimensional Biomarker Data for Binary Outcomes
Hongda Zhang and Yuanzhang Li, Digital Systems Inc and Preventive Medicine Program, Walter Reed Army Institute of Research

Modeling and Inference in Ecological Problems
Wesley McCardle and Alongkot Ponlawat, Armed Forces Research Institute of Medical Sciences

An R Plugin Package for Geospatial Analysis
Erin Hodgess, Visiting Scientist, National Geospatial Intelligence Agency

1430 - 1500 Break

1500 – 1630 SPECIAL CONTRIBUTED SESSION II: Network Science, Dave Jakubek
    (Organizer and Chair)

Applications of the Law of First Digits in Cyber and Soft Biometrics
Stephen Russell, Naval Research Laboratory

Statistical Approaches in Mining Unstructured Text for Contextual Understanding and Event Prediction
Elizabeth Bowman, Army Research Laboratory

Risk Analysis for Complex Information Networks
Robert Bonneau, OASD (R&E)

Social Networks as Basic Science for Understanding Human Dimensions of Military Operations
Chris Arney and Kate Coronges, USMA and Army Research Office

1630 - 1645 CLOSING REMARKS