

## FINAL AGENDA

17<sup>th</sup> Army Conference on Applied Statistics

O'Callaghan Hotel  
Annapolis, Maryland  
19-21 October 2011

*Sponsored by the Interface Foundation of North America*

### **Monday, October 17**

**0800 – 0830 Registration (Galway A)**

**0830 – 1200 Tutorial**

*Applied Logistic Regression*

COL Rodney Sturdivant, United States Military Academy

**1200 – 1300 Lunch**

**1300 – 1600 Tutorial**

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### **Tuesday, October 18**

**0830 – 1200 Tutorial (Galway A)**

*Applied Logistic Regression*

COL Rodney Sturdivant, United States Military Academy

**1200 – 1300 Lunch**

**1300 – 1600 Tutorial**

**1830 – Social and Registration (Federal House Bar & Grill)**

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### **Wednesday, October 19**

**0745 – 0815 Registration (Galway A&B)**

**0815 – 0830 Call to Order (Galway A&B)**

Barry Bodt, Conference Chair, US Army Research Laboratory

**Welcome:** Gary O. Fowler, Department of Mathematics, United States Naval Academy

**0830 – 1000 General Session I (Keynote Address) (Galway A&B)**

Chair: Barry Bodt, US Army Research Laboratory

*Army Network Science and Statistics*

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

*Social Media and the Egyptian Revolution*

Maksim Tsvetovat, George Mason University

**Wednesday, October 19 (continued)**

**1000 – 1015 Break**

**1015 – 1145 Contributed Session I (Galway A)**

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

*Network Modeling of Insurgency and Counter-Insurgency Strategies and Operations*  
Chris Arney and Kathryn Coronges, United States Military Academy

*Mathematical Classification of Computational Trust Models*  
Craig Lennon, United States Military Academy

*A Mathematical Model of Network Communication*  
James Gatewood, United States Military Academy, and Donald Drew, Rensselaer Polytechnic Institute

**1015 – 1145 Special Session I, Army Applications (Galway B)**

Organizer: COL Andrew Glen, United States Military Academy

Chairs: COL Andrew Glen & COL Rodney Sturdivant, United States Military Academy

*Trends in the Incidence of Traumatic Brain Injury and Related Conditions Among Active Duty U.S. Military Personnel Between 1997 and 2007*

Kenneth L. Cameron\*, Stephen W. Marshall\*\*, Andrew E. Lincoln\*\*\*, and COL Rodney X. Sturdivant\*\*\*\*

\*Keller Army Hospital, West Point

\*\*University of North Carolina, Chapel Hill

\*\*\*MedStar Health Research Institute

\*\*\*\*United States Military Academy

*Analyzing the Effectiveness of Commander's Emergency Relief Program (CERP) Spending in Iraq and Afghanistan*

MAJ Christopher Eastburg, MAJ Benjamin Thirey, and MAJ Nicholas Clark, United States Military Academy

*Applications of the Infinite Bootstrap: The Spare Tire Problem*

MAJ Christopher Marks, MAJ Kevin Cumminsky, LTC Billy Kaczynski, and COL Andrew Glen, United States Military Academy

**1145 – 1300 Lunch**

**1300 – 1500 Contributed Session II (Galway A)**

Chair: Alyson Wilson, Institute for Defense Analyses

*Measuring Cooperation in Networks*  
Elisha Peterson, Johns Hopkins University Applied Physics Laboratory

*Modeling Cooperation in Networks, Organizations, and Systems*  
Brian MacDonald and Chris Arney, United States Military Academy, and Elisha Peterson, Johns Hopkins University Applied Physics Laboratory

**Wednesday, October 19 (continued)**

*A Network View of Pessimism in Military Units*

CDT Evan Szablowski and Kathryn Coronges, United States Military Academy

*A Spectral Technique to Explore the Asymmetric Flow of Information in Directed Networks*

Karl Rohe, University of Wisconsin-Madison, and Bin Yu, University of California, Berkeley

**1300 – 1500 Contributed Session III (Galway B)**

Chair: Charles White, Walter Reed Army Institute of Research

*Inferences for Matched Case-control and Stratified Semiparametric Two-sample Density Ratio Models*

Tianqing Liu, Walter Reed Army Institute of Research, Zhaohai Li, George Washington University, and Yuanzhang Li, Walter Reed Army Institute of Research

*Analysis of Massive Microarray Data for Understanding Effects of Water Environments to Beetle Tissues*

Guilherme V. Rocha,\* Karen Kafadar,\* Armin Moczek,\*\* Teija Kijimoto,\*\* Emilie Snell-Rood,\*\*\* Justen Andrews\*\* (\* Department of Statistics, Indiana University) (\*\* Center for Genomic Biology, Indiana University) (\*\*\*) Department of Biology, University of Minnesota)

*Design of Genomic Studies Using the Square Combining Table*

Karen Kafadar and Guilherme V. Rocha, Indiana University

*Detection of Subgroups for Differential Treatment Effects*

Wei-Yin Loh, University of Wisconsin-Madison

**1500 – 1515 Break**

**1515 – 1715 Contributed Session IV (Stochastic Optimization) (Galway A)**

Organizer: Janet Spoonamore, US Army Research Office

Chair: Swala Burns, Marine Corps Operational Testing and Evaluation Activity

*Combinatorial Framework for the Modeling and Solution of Probabilistic Optimization Problems*

Miquel A. Lejeune, George Washington University

*Stochastic Network Design for Disaster Preparedness*

Xing Hong, George Washington University Ph.D. Student, Miguel A. Lejeune, George Washington University, and Nilay Noyan, Sabanci University, Turkey

*Evaluating the Validity of Probability Assessments in Strategic and Realistic Environments*

Prashant Doshi, Adam Goodie, Daniel Hall, Matthew Meisle, and Royi Ceren (University of Georgia)

*Stochastic Resource-Constrained Project Scheduling and its Military Applications*

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

**1515 – 1715 Contributed Session V (Galway B)**

Chair: Allan T. Mense, Raytheon Missile Systems

*Imputation of Missing Round Data with Acoustic Target Systems to Estimate Dispersion Characteristics*

Craig D. Andres, Jenna L. Preston, and Paul S. Kruse, US Army Aberdeen Test Center

**Wednesday, October 19 (continued)**

*Statistical Methods of Target Impact Dispersion Metric for Small-Arms MIL-HDBK Development*  
Douglas Ray, Mike Brown, and Chad Bareither, Armament Research, Development and Engineering Center

*Aluminum 7020-T651 Characteristics and Ballistic Protection, with Regression Statistics of 5083 and 7039 Aluminum, and RHA Steel*  
John Chinella (US Army Research Laboratory)

*The Application of Statistical Equivalence Testing by a Military Operational Test Agency*  
Brittney Cates, Marine Corps Operational Testing and Evaluation Activity

**1830 – 2100 Wilks Award Banquet (Galway A&B)**

1830 – Social

1930 – Dinner

2015 – Banquet Address: Jim Cheevers, Senior Curator and Associate Director, USNA Museum

2045 – Wilks Award

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**Thursday, October 20**

**0830 – 0915 General Session II (Galway A&B)**

Chair: Edward J. Wegman, George Mason University

*Vertex Nomination*

Carey Priebe, Johns Hopkins University

**0915 – 0930 Break**

**0930 – 1130 Contributed Session VI (Galway A)**

Chair: Lee Dewald, Virginia Military Institute

*Pushing Geospatial Analytics to the Edge*

MAJ Christopher Eastburg, United States Military Academy

*An Analysis of Crime Using High Dimensional and Collinear Predictors*

MAJ Nicholas Clark, United States Military Academy

*Mixed Hidden Markov Models for Joint Outcomes*

LTC John C. Jackson, United States Military Academy

*Density Dependent Utilities with Transaction Costs (Withdrawn from program)*

Julius N. Esunge, University of Mary Washington, and Eriyoti Chikadza, Great Zimbabwe University

**Thursday, October 20 (continued)**

**0930 – 1130 Special Session II (Game Theory) (Galway B)**

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

*Network Routing in an Adversarial Environment*

Nozer D. Singpurwalla, George Washington University

*Game Theory for Security: Lessons Learned from Deployed Applications*

Milind Tambe, University of Southern California

*A Stochastic Differential Game for the Infinity Laplacian*

Amarjit Budhiraja, University of North Carolina-Chapel Hill

*Defending Critical Infrastructure Systems*

David Alderson, Naval Postgraduate School

**1130 – 1300 Lunch**

**1300 – 1430 Special Session III (Reliability) (Galway A)**

Organizer: Francisco Samaniego, University of California, Davis

Chair: Carey Priebe, Johns Hopkins University

*Prediction of Remaining Life of a Fleet of Assets Based on Left-Truncated, Right-Censored Data*

William Q. Meeker, Iowa State University

*The Failure Rate of Mixtures*

Henry W. Block, University of Pittsburgh

*Estimating the Reliability of Components Based on Failure Time Data from Varied Systems*

Francisco J. Samaniego, University of California, Davis

**1300 – 1500 Contributed Session VII (Inference Modeling) (Galway B)**

Organizer: Janet Spoonamore, US Army Research Office

Chair: Brittney Cates, Marine Corps Operational Testing and Evaluation Activity

*A Decision Theoretic Approach to Stochastic Linear Programming*

Joshua Landon and Nozer D. Singpurwalla, George Washington University

*Stable Matchings with Additional Objectives*

Craig Lennon, United States Military Academy

*A Mixed-integer Programming Model for Enforcing Priority List Policies in Markov Decision Process Models*

Laura A. McLay, Virginia Commonwealth University

*Recent Advances in Reliability-based Design Optimization for Broader Army Applications*

KK Choi, University of Iowa

**1430 – 1445 Break (Galway A)**

**Thursday, October 20 (continued)**

**1445 – 1615 Contributed Session VIII (Galway A)**

Chair: COL Rodney Sturdivant, United States Military Academy

*Maintainability Data Decision Methodology (MDDM)*

John Nierwinski, Jr., US Army Materiel Systems Analysis Activity

*The Navy Officer Lateral Transfer Process and Retention: A Matched Analysis*

Yevgeniya (Jane) Pinelis and Ann Parcell, CNA, Center for Naval Analyses

*A Statistical Analysis of Proposed Military Retirement Plans*

CDT Joseph Lucas, MAJ Kevin Cumminskey and Robert Wooster, United States Military Academy

**1500 – 1515 Break (Galway B)**

**1515 – 1630 Clinical Session I (Galway B)**

Chair: Arthur Fries, Institute for Defense Analyses

*Uninformative Confidence Bands in a Probit Analysis*

David Webb, US Army Research Laboratory

Discussants:

Arthur Fries, Institute for Defense Analysis

Robert Easterling (*retired*), Sandia National Laboratories

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*Evaluation of Weapons System Performance in a Limited-Data Environment: Estimating the Probability of Engagement Success for Missile Defense Systems*

Carl Gaither, Institute for Defense Analyses

Discussants:

William Q. Meeker, Iowa State University

Robert Easterling (*retired*), Sandia National Laboratories

**1630 – 1715 General Session III (Galway A & B)**

Chair: Nozer D. Singpurwalla, George Washington University

*Heavy Tailed Statistics for Modeling Network Sessions*

Sidney Resnick, Cornell University

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**Friday, October 21**

**0830 – 0915 General Session IV (Galway A&B)**

Chair: David Webb, US Army Research Laboratory

*Nested Latin Hypercube Designs*

Peter Qian, University of Wisconsin, Madison

**0915 – 0930 Break**

**0930 – 1100 Contributed Session IX (Galway A)**

Chair: Tom Donnelly, SAS JMP

*Large Fractional Factorial DIODE DOE*

Curt Laumann & Bill Thomas, Raytheon Missile Systems

*Design of Experiments in Highly Constrained Design Spaces*

Laura J. Freeman, Institute for Defense Analyses

*Prioritizing Unaided Human Search in Military Simulations*

CPT James K. Starling, United States Military Academy

**0930 – 1100 Contributed Session X (Galway B)**

Chair: COL Andrew Glen, United States Military Academy

*Distributed Modal Identification Using Restricted Auto-Regressive Models*

Guilherme V. Rocha, Indiana University, Shamim Pakzad, Lehigh University, and Bin Yu, University of California, Berkeley

*Symbolic ARMA Model Analysis*

Keith H. Webb and Lawrence M. Leemis, College of William & Mary

*A New General Purpose Method of Time Series Forecasting*

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

**1100 – 1115 Break**

**1115 – 1200 General Session V (Galway A&B)**

Chair: Barry Bodt, US Army Research Laboratory

*Info-Metrics and Estimation of Extreme Events*

Amos Golan, American University

**1200 Adjourn**