



Interface Foundation of North America, Inc.
P.O. Box 7460
Fairfax Station, VA 22039-7460

June 16, 2005

SUBJECT: U.S. Army Conference on Applied Statistics

Dear Colleague,

The Executive Board for the Army Conference on Applied Statistics (ACAS) is pleased to announce that the Naval Postgraduate School in Monterey, CA will host its 11th annual meeting from October 19-21. ACAS, now a conference of the Interface Foundation of North America, is a forum for the presentation and discussion of theoretical and applied papers relating to the use of probability and statistics for solving defense- and security-related problems. Today's Department of Defense faces far-ranging challenges that include many topics in which probability and statistics can contribute. The development and advancement of defense systems draw upon varied techniques and tools such as reliability analysis, statistical computing, visual data mining, simulation, linear and stochastic modeling, data fusion, and experimental design. ACAS provides a constructive opportunity for interaction among academic, industry, and DoD scientists. It also serves a nurturing role in the elevation of statistical proficiency among DoD researchers in other disciplines who find themselves statistical practitioners because of the compelling benefits statistical science brings to DoD research, development, and testing.

"Mixed-Effects Models Using R", a two-day short course taught by Professor Douglas Bates of the University of Wisconsin, will precede the conference on October 17 & 18. Mixed-effects models are used in the analysis of data that have multiple levels of variation in the response. Common examples of such data are longitudinal data, where there are multiple measurements gathered over time on a set of subjects or other experimental units, and organizational data, where the subjects are grouped into one or more levels of organizational units, such as squad, platoon and company. Linear mixed models, which are also called variance components models, or random slopes models or panel-data models, have been used extensively in the analysis of such data. Methods have been developed recently for extensions such as generalized linear mixed models and nonlinear mixed models. In a Small Business Technology Transfer project for the U.S. Army Medical Research Activity, Prof. Bates has developed new computational methods for such models and provided an implementation in R (www.r-project.org), a freely-available environment for statistical computing and graphics. In this tutorial Prof. Bates will introduce the data handling and graphics

capabilities of R, and describe the theory and practice of the analysis of longitudinal and organizational data using R.

The conference program will also consist of invited talks by prominent investigators in various branches of statistics and applied probability as well as contributed papers of a technical, applied, or clinical nature. To date, the following distinguished researchers have been confirmed for invited presentations: Barbara Billauer (Maryland), Sallie Keller-McNulty (Rice), Wei-Yin Loh (Wisconsin, keynote), Chris Raphael (Indiana), Nozer Singpurwalla (George Washington), and Richard Smith (North Carolina).

This year's conference will feature three special sessions. The first, "**Statistical Research at the Naval Postgraduate School**", will be organized by David Olwell (NPS). It will showcase the latest results by faculty in the NPS Operations Research and Systems Engineering departments, and offer insight into the direction of future work. In the second session, entitled "**Modern Reliability Methods**", presenters from Los Alamos National Laboratory will discuss strategies for combining information from a variety of sources to maximize precision of estimation and prediction. This session will be organized by Christine Anderson-Cook (LANL). The final session, "**Modeling, Analysis, and Control of Network Traffic**", includes recent results concerning long range dependence and self-similarity of traffic flow, congestion control of randomly varying channel capacity, and dynamic allocation of spectrum. This session will be organized by Mou-Hsiung (Harry) Chang (ARO).

The technical sessions of the conference will also feature contributed papers by DoD scientists, and academic and industrial scientists, including investigators under contract to DoD. Contributed papers can range in content from new research to well-posed problems in which statistical methods are applied to solve specific DoD problems. Speakers are strongly encouraged to present their papers in terms of the potential or real problems that motivated the work. Results that rely on relatively recent or specialized results in the theory of statistics and probability should be explained in sufficient detail to permit an audience of statistical practitioners with broadly varying backgrounds to use the results to enhance their own problem-solving capabilities.

Clinical sessions, a distinct element of the U.S. Army Conference on Applied Statistics, accept unresolved problems in applied statistics. A panel of experts, comprised of invited speakers and other distinguished attendees offer guidance on how to proceed. Authors of a clinical paper must provide a brief description of the problem by September 23, 2005 in order that panelists have sufficient time to prepare their recommendations. We invite you to consider this opportunity to present an interesting statistical problem to some of the country's leading applied and mathematical statisticians.

Participation from many activities is sought to ensure a mixture of science and application. A call for papers is hereby extended. Speakers will be notified regarding paper acceptance no later than September 2. It may become necessary to limit the number of papers, so a timely response is recommended. To submit a paper for consideration, please send the following information by August 26 to Barry A. Bodt, U.S. Army Research Laboratory, ATTN: AMSRD-ARL-CI-CT, Aberdeen Proving Ground, MD 21005-5067. (Electronic mail sent to babodt@arl.army.mil is preferred.)

1. Title of paper, and a short abstract.
2. Name of author(s) and exact title of the organization(s).
3. Type of paper (technical or clinical).
4. Equipment needed (digital projector, overhead, slide projector, etc.).
5. Telephone number of the author(s) (DSN or commercial).
6. E-mail address of the author(s).

Technical papers are nominally allowed 30 minutes, to include 5 minutes at the end for audience discussion and questions. Of the 40 minutes available for clinical papers, approximately 15 minutes are recommended for the problem statement, allowing 25 minutes for panel discussion.

The conference also marks the occasion when the Army Wilks award is presented for significant contributions to the U.S. Army in the areas of statistical research, applications, and/or consulting. This year the Board is accepting open nominations for award candidates. Letters of nomination should include the nominee's vita relevant to Army service, and should be mailed by August 5, 2005 to Jock O. Grynovicki, U.S. Army Research Laboratory, ATTN: AMSRD-ARL-HR-SE, Aberdeen Proving Ground, MD 21005-5425.

This year's U.S. Army Conference on Applied Statistics returns to scenic Monterey, CA on the grounds of the Naval Postgraduate School. The Monterey Peninsula is famous the world over for its spectacular natural beauty, the Monterey Bay Aquarium, Cannery Row, Fisherman's Wharf, the Maritime Museum of Monterey, the National Steinbeck Center, and haute cuisine from continental to California. If you are planning to see some of the area when you arrive, be sure to visit the Monterey Peninsula Visitors and Conventions Bureau website, www.monterey.com/index.html.

Now in its 11th year, ACAS continues to evolve. Originally, ACAS was formed to fill the void created by the close of a 40-year sequence of meetings on the Design of Experiments in Army Research, Development and Testing. Over the past 10 years, ACAS has expanded its reach to involve a wider array of DoD, other government, industry, and academic interests and participants. To better represent and meet

the needs of this more diverse community, ACAS has now aligned with the Interface Foundation of North America. The Interface, which already sponsors a highly successful annual meeting, will guide ACAS in its management, growth, and continued service to the defense statistical community.

A host letter providing more detailed information regarding registration fees, additional lodging, agenda, etc. will follow in early September. Prior to this mailing, information concerning the conference and tutorial can be obtained via the Internet at www.galaxy.gmu.edu/ACAS/. Any additional inquiries concerning the conference may be directed to Barry A. Bodt at the address noted previously, by phone (410-278-6659), or by fax (410-278-4988).

Sincerely,

David W. Webb
 U.S. Army Research Laboratory
 Aberdeen Proving Ground, MD

Executive Board of the U.S. Army Conference on Applied Statistics

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