June 4, 2003

AMSRL-WM-BC

SUBJECT: U.S. Army Conference on Applied Statistics

Dear Colleague,

The Executive Board of the U.S. Army Conference on Applied Statistics is pleased to announce that the University of California at Davis will host its ninth annual conference in Napa, California from October 29, 2003 to October 31, 2003.

The U.S. Army Conference on Applied Statistics (ACAS) is a forum for the presentation and discussion of theoretical and applied papers relating to the use of probability and statistics in solving Army problems. Today's Army confronts far-ranging challenges that encompass many topics in which probability and statistics can contribute. The development and advancement of Army systems draw upon many techniques such as survival analysis, data mining, simulation, image analysis, linear and nonlinear modeling, data fusion, and experimental design. ACAS provides an invaluable opportunity for interaction among academic, industry, and Army scientists. It also serves a nurturing role in the elevation of statistical competence among Army researchers in other disciplines who find themselves statistical practitioners because of the compelling benefits statistical science brings to Army research, development, and testing.

"**An Introduction to Generalized Linear Mixed Models**", a two-day tutorial taught by Professor Charles McCulloch of the University of California, San Francisco, will precede the conference on October 27 & 28. The class of generalized linear mixed models (GLMMs) is a broad class of statistical models generalizing both linear mixed models and generalized linear models (GLMs). As such it is capable of accommodating nonlinear responses, correlated data and non-normal distributions. This makes it quite useful in practice. For example, GLMMs give a natural way to specify a correlated data model for binary data. After briefly introducing generalized linear models Professor McCulloch will describe the extension to GLMMs. The focus in the course will be on approaches to modelling, methods of estimation and inference, and available software. The concepts will be illustrated on a number of examples.

The conference program will 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: Brad Carlin (Minnesota, keynote), Mike Hamada (Los Alamos National Laboratory), Trevor Hari Iyer (Colorado State), S. Rao Jammalamadaka (UC Santa Barbara), Adrian Raftery (Washington), and Jerome Friedman (Stanford).

Three special sessions will highlight this year's conference. The first of these, entitled "**Beyond Software Reliability",** will showcase inroads in the statistical analyses of software reliability, an area that has presented challenges when traditional reliability methods are applied. Secondly, we will explore issues associated with the statistical analysis of "**Microarrays**", or genome chips. This frontier technology is reshaping molecular biology, and also has important applications for the emerging battlefield. Speakers for these first two sessions are TBD. "**Homeland Security and Counterterrorism"** is an increasing vital topic in today's world. In this session, we will attempt to marry the perspectives of the academic statistical community, represented by Alan Karr (National Institute of Statistical Science) and Bernard Harris (Nebraska), with the real world concerns of the Department of Homeland Security, represented by Parney Albright.

The technical sessions of the conference will also feature contributed papers by Army scientists, and academic and industrial scientists, including investigators under contract to the Army. Contributed papers can range in content from new research to well-posed problems in which statistical methods are applied to solve specific Army 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 26, 2003 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 5. 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 22 to Barry A. Bodt, U.S. Army Research Laboratory, ATTN: AMSRL-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 written in standard ASCII text.
2. Name of author(s) and exact title of the organization(s).
3. Type of paper (technical or clinical).
4. Equipment needed (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 July 18, 2003 to Jock O. Grynovicki, U.S. Army Research Laboratory, ATTN: AMSRL-HR-SE, Aberdeen Proving Ground, MD 21005-5425.

This year's U.S. Army Conference on Applied Statistics will be held at the Napa Valley Marriott Hotel and Spa in Napa, California. The town of Napa and surrounding Napa Valley are known world-wide for its wineries. Napa Valley in California is well known for its production of wine from nearly 240 wineries. The Napa Valley offers some of the world's best in fine dining, casual dining and home-style cooking restaurants and they will surely have the perfect wine to accompany the meal. The Napa Valley offers a diverse array of attractions and events, including museums, shopping, golf, ballooning, horseback riding and the Napa Valley Wine Train. If you are planning to see some of the area when you arrive, be sure to browse the Napa Valley Conference and Visitors Bureau website, www.napavalley.org.

The conference is sponsored this year by the U.S. Army Research Laboratory, Walter Reed Army Institute of Research, Uniformed Services University of the Health Sciences, TRADOC Analysis Center - WSMR, United States Military Academy, and Army Research Office – with cooperation from Los

Alamos National Laboratory, George Mason University, Office of Naval Research, and Institute for Defense Analyses. 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 http://www.arl.army.mil/main/acas/default.htm. 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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