

# **BCASA NEWSLETTER**

## **Boston Chapter of the American Statistical Association**

*Serving*

Maine, Massachusetts, New Hampshire, and Vermont

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**Volume 22, No. 1, September 2003**

Boston Chapter ASA, c/o Michael Posner, 313 Summit Avenue, #3, Brighton, MA 02135

BCASA homepage: <http://www.amstat.org/chapters/boston>

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### **From the Editor**

Welcome to the first electronic issue of the *BCASA Newsletter*. We hope this method of distribution will provide information in a more timely fashion. Eliminating photocopying and postage will save money, which will enable the chapter to provide additional services to its members, as we are a non-profit organization. Let us know your thoughts on this new format by contacting any officer or planning committee member.

### **Meeting Schedule Overview**

The BCASA Program Chair and Planning Committee have put together an interesting and diverse schedule of events for the next few months. Be sure to mark your calendar now so you do not miss any of these meetings. Detailed announcements appear below. The schedule can also be accessed at our web site: <http://www.amstat.org/chapters/boston/schedule.html>. We look forward to seeing you at these events. We are currently planning the schedule of events for the upcoming year, so if you have suggestions please contact Program Chair Tom Lane at [tlane@alum.mit.edu](mailto:tlane@alum.mit.edu).

September 25, 2003	Connecticut Chapter Short Course	New Britain, CT
September 26, 2003	Rhode Island Chapter Short Course	Kingston, RI
September 30, 2003	BCASA Evening Lecture	Cambridge, MA
October 29, 2003	BCASA Evening Lecture	Cambridge, MA
November 13, 2003	BCASA Evening Lecture	Boston, MA
November 22, 2003	IMS Workshop	Worcester, MA

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## **SHORT COURSE**

### **Statistical Methods for Reliability Data**

**William Q. Meeker**  
Iowa State University

**Offered in Connecticut on September 25, 2003 and in Rhode Island on September 26, 2003**

#### **Abstract**

Reliability assurance processes in manufacturing industries require data-driven information for making product-design decisions. Life tests, accelerated life tests, and accelerated degradation tests are commonly used to collect reliability data. Data from products in the field provide another important source of useful reliability information. These reliability studies typically yield data that are censored and/or truncated, require the use of less familiar distributions like the Weibull, the lognormal, and the gamma, and call for inferences that involve extrapolation.

The purpose of this course is to make modern methods for analyzing failure-time and degradation data available to a wide audience of practitioners. The course will describe and illustrate the use of a mix of proven traditional techniques, enhanced and brought up to date with modern computer-based methodology. Topics include censored data, nonparametric estimation, probability plotting, maximum likelihood estimation, likelihood-based confidence intervals, acceleration models, accelerated life testing, and accelerated degradation testing. The general concepts and methods in this course also have applications in engineering, medicine, life sciences, sociology,

economics, and other sciences. Most of the examples in the course will come from applications of product reliability, but some biological examples will also be presented to illustrate the breadth of application.

This course will focus primarily on applications, data, concepts, methods, and interpretation. There will be little or no theory presented and results of complicated computations will be illustrated graphically. The required technical background for the course is thus minimal. The material in this course will be of interest and accessible to individuals ranging from engineers having had only one or two courses of statistics through individuals with advanced degrees in statistics.

This course is based on *Statistical Methods for Reliability Data*, by W.Q. Meeker and L.A. Escobar, published in July 1998 by John Wiley and Sons, Inc.

### **Biographical sketch**

William Meeker is Professor of Statistics and Distinguished Professor of Liberal Arts and Sciences at Iowa State University. He holds a BS from Clarkson University and MS and Ph.D. degrees from Union College. His interests are in the areas of reliability data analysis, statistical methods for quality improvement, statistical planning and inference, and statistical computing. He has worked eight summers at the General Electric Corporate Research and Development Center and 15 summers at AT&T Bell Laboratories. He is a Fellow of the American Statistical Association and an elected member of the International Statistics Institute. Meeker is a former editor of Technometrics and is currently an Associate Editor for Life Time Data Analysis. He won the American Statistical Association Award for the Best Application paper and the American Society for Quality (ASQ) Wilcoxon Prizes Youden prize three times each. He won two awards for outstanding teaching at Iowa State University. He is the co-author of two books, five book chapters, and of numerous publications in the engineering and statistical literature.

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**In Connecticut: Sponsored by the Connecticut Chapter of the American Statistical Association and the Hartford Section of the American Society for Quality**

**Date:** Thursday, September 25, 2003

**Time:** 9:00 a.m. to 4:00 p.m.

**Location:** Institute of Technology and Business Development (ITBD) in New Britain.

**Cost:** \$55. Includes parking at the Municipal Parking garage, continental breakfast (at 8:30 a.m.), lunch, and an afternoon snack.

**Registration:** Send your name, email address, and a check for \$55 (payable to ASA CT Chapter) to  
Sterling Hardy  
Bristol-Myers Squibb  
5 Research Parkway  
Wallingford, CT 06492-7660

**Deadline:** Friday, September 19, 2003

**Directions:** <http://www.ccsu.edu/itbd/iiet/DirectionstoIJET.htm>

**Parking:** The Municipal Parking garage is on Chestnut Street, behind the ITBD on Chestnut Street.

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**In Rhode Island: Sponsored by the Rhode Island Chapter of the ASA**

**Date:** Friday, September 26, 2003

**Time:** 8:00 am to 4:00 pm.

**Cost:** \$60 (\$40 students), or \$70 after September 10. Includes course fee, lunch and coffee breaks.

**RSVP:** R.C. Hanumara ([rch@cs.uri.edu](mailto:rch@cs.uri.edu))

**Location:** University of Rhode Island University Club, Kingston, Rhode Island

**Directions:** [http://www.uri.edu/home/visitors/Map/kingston\\_direction.html](http://www.uri.edu/home/visitors/Map/kingston_direction.html)

**Parking:** Permits are available from the visitor information bureau on Upper College Road.

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## ***EVENING LECTURE***

### **Data Mining in Excel**

**Nitin Patel**

**Co-founder, Cytel Software**

**Visiting Professor of Operations Research, MIT Sloan School**

**Date:** Tuesday, September 30, 2003

**Time:** 6:30 Light dinner  
7:00 Presentation

**Cost:** Dinner \$8 members, \$10 non-members, \$5 students; Presentation free

**Location:** MIT Sloan School  
Tang Center, Room E51-149  
Cambridge, MA

**Directions:** <http://whereis.mit.edu/map-jpg?selection=E51&Buildings=go>

**RSVP:** By noon on September 25 to Sue Perry ([sperry@rhoworld.com](mailto:sperry@rhoworld.com))  
Specify whether you will have dinner or only attend the presentation.

#### **Abstract**

Data mining methods are a mix of statistical methods and machine learning algorithms. The statistical methods that are most often used are multiple and logistic regression and multivariate methods such as discriminant analysis, clustering, and principal components. The popular machine learning methods are classification and regression trees, k-nearest neighbors, naïve Bayes, neural networks, and association rules. I will sketch out the logic of these machine learning algorithms and illustrate them as well as the popular statistical methods using XLMiner, an Excel add-in that I have developed for my MBA classes at the Sloan School of management at MIT. XLMiner. I will discuss experiences with using an Excel-based package for prototyping and implementing moderate sized data mining applications.

#### **Program Chair Notes**

Nitin Patel is an innovator in the field of statistical computing. Along with his partner, Cyrus Mehta, a frequent speaker at chapter events, he has developed algorithms for performing exact inference where only asymptotic methods were formerly feasible. Dr. Patel was elected a Fellow of the ASA this year.

## ***EVENING LECTURE***

### **MCAS Questions on Probability and Statistics**

**Eugene D. Gallagher**  
**Associate Professor**  
**Environmental, Coastal and Ocean Sciences**  
**University of Massachusetts, Boston**

- Date:** Wednesday, October 29, 2003
- Time:** 6:30 Light dinner  
7:00 Presentation
- Cost:** Dinner \$6 members, \$8 non-members, \$5 students  
Presentation free
- Location:** Pratt Room, Upper School  
Buckingham Browne and Nichols School  
80 Gerry's Landing Road  
Cambridge, MA
- Directions:** [http://www.bbn-school.org/direct\\_up.htm](http://www.bbn-school.org/direct_up.htm)
- RSVP:** By noon on October 24 to Sue Perry ([sperry@rhoworld.com](mailto:sperry@rhoworld.com))  
Specify whether you will have dinner or only attend the presentation.

#### **Abstract**

During summer 2001, I presented a workshop to high school math and science teachers on incorporating computer software into the K-12 curriculum. I was then unfamiliar with the Massachusetts K-12 curriculum standards and MCAS exam questions. I reviewed MCAS tests and the curriculum standards to find relevant examples. I found numerous serious errors on the MCAS exams and standards and was urged by the teachers to inform the Dept. of Education. I did and continue to do so. But the problems with poor MCAS questions, especially in the areas of statistics & probability, persist through the latest MCAS exam in Spring 2003. In this talk, I'll describe, 1) Improper Probability & Statistics standards in the mathematics curriculum frameworks, 2) Errors in the MCAS statistics and probability exam questions, and 3) Errors on the grading of the questions. The statistical problems with MCAS extend to the presentation of MCAS results to parents and the media, the reported quality control for grading the open-response exam questions, and the problems in evaluating MCAS improvement rates to meet the federal 'No Child Left Behind' regulations. As I've written to the Dept. of Education, I believe strongly in teaching and testing on probability and statistics concepts in the K-12 curriculum, but Massachusetts is not being well-served by those designing the assessment of these concepts in MCAS.

#### **Program Chair Notes**

Although he is interested in the MCAS exams, Gene Gallagher's main research interest is the multivariate analysis of benthic community structure, especially the effects of pollution on community structure. His web page provides reports on this research, an illustration of the recovery of the Boston Harbor from pollution problems, and supporting MATLAB and other software: <http://www.es.umb.edu/faculty/edg/gallagher.html>.

## **EVENING LECTURE**

### **Statistics: A Bridge to Discovery and Knowledge**

**Robert L. Mason**  
**President**  
**American Statistical Association**

- Date:** Thursday, November 13, 2003
- Time:** 6:00 Refreshments  
7:00 Presentation  
After the presentation, all are welcome to join Dr. Mason for dinner at a local restaurant (at your own expense).
- Cost:** Free
- Location:** Boston University School of Medicine  
L Building, Evans Room  
80 East Concord Street  
Boston, MA
- Directions:** <http://www.bumc.bu.edu/places/CampusMap/index.htm>  
[http://www.bumc.bu.edu/places/CampusMap/building\\_index.htm](http://www.bumc.bu.edu/places/CampusMap/building_index.htm)
- RSVP:** By noon on November 10 to Sue Perry ([sperry@rhoworld.com](mailto:sperry@rhoworld.com)).

#### **Abstract**

This presentation discusses the state of the present statistics profession and where it is headed. Included is a discussion of the many innovative activities of the American Statistical Association and the initiatives it has instituted in recent years, particularly in the areas of education, publications, and meetings. Some views will be given of different future worlds for the statistics profession, and what professional statisticians will need to do to survive in them.

#### **Program Chair Notes**

We are delighted that Bob Mason has agreed to visit the Boston Chapter as his ASA presidency draws to a close. Dr. Mason is a Staff Analyst at the Southwest Research Institute in Texas. His fields of statistical activity include industrial applications of statistics, design of experiments, and multivariate quality control.

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## **WORKSHOP**

### **Statistics and Sports**

**Sponsored by the Institute of Mathematical Statistics (IMS) and the  
Department of Mathematical Sciences, Worcester Polytechnic Institute**

- Date:** Saturday, November 22, 2003

**Speakers:** Mark Glickman, Boston University  
Carl Morris, Harvard University  
Hal Stern, University of California - Irvine

**Organizers:** Carlos J. Morales (cmorales@wpi.edu)  
Andrew W. Swift (swift@wpi.edu)

**Cost:** \$10 (\$5 students and IMS members)

**Location:** Worcester, MA

**Website:** <http://users.wpi.edu/~swift/sports/> has program, directions, lodging, and registration information.

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## **OFFICERS' REPORTS**

### **Program Chair**

The 2002-2003 BCASA season had a very full schedule and some successful experiments. These included daytime events, a Sunday event, and some months with two events.

We continued our evening lecture series with talks by Carl Morris on modeling baseball performance, Lisa Sullivan on making statistical models useful for practicing physicians, Al Coons on AP Statistics, and Gary King on survey research. Our traditional winter party took place at the home of Katherine and Daniel Monti. John McKenzie was named the 2003 Mosteller Statistician of the Year. At our annual banquet in February he provided some reflections on the use of technology in statistical education.

In response to occasional requests, we experimented with two daytime lectures. Janet Wittes spoke in December on adaptive clinical trials, and Russ Wolfinger spoke in April on microarray data analysis. Both lectures had higher attendance than our usual evening events. We plan to continue scheduling a mix of daytime and evening events.

We held two panel discussions. Herman Chernoff moderated a discussion on biostatistics education by Ralph D'Agostino, Cyrus Mehta, and Louise Ryan. Kerstin Allan organized our career night, with panelists from a variety of industries describing their experiences to an overflow crowd. Thanks to panelists Lynn Sleeper, Kathy Lunetta, Scott Evans, Katherine Monti, Tom Lane, E. Averbukh, and Catharine Sterling.

In May we were fortunate to have two short courses. Donald Rubin, Samantha Cook, and Elizabeth Stuart presented their "traveling" course on causality to a home-town audience. It was our first Sunday event. Once again the experiment was successful, as we filled the room to capacity. Jay Magidson also presented a Saturday short course on latent class choice models. We're indebted to these presenters. As one participant remarked, our chapter's short courses are an excellent continuing education value compared to those available commercially or at JSM.

We're looking forward to another successful year. Although we normally do not meet in the summer, we broke with tradition this year to host a presentation in July by Cyrus Mehta on early stopping of clinical trials. Our schedule continues with the three talks announced in this newsletter.

Thanks to everyone who presented to the chapter or attended our events over the last year, and especially to Scott Evans who was Program Chair through December 2002. We are always looking for ideas for future events. We'd especially like to hear from people who can host events at locations that are convenient to public transportation. Please contact the Program Chair (Tom Lane), President (Scott Evans), or any member of the Planning Committee if you have suggestions.

*Submitted by Tom Lane*

### **Council of Chapters Representative**

The Boston chapter, with approximately 350 members, remains quite active. The Annual report on chapter activities for 2002 was submitted in the spring. Activities included a dozen events, including evening lectures, short courses, career night, social activities and other gatherings.

In August, the Council of Chapters convened for their annual gathering at the Joint Statistics Meetings in San Francisco. This meeting allows chapter representatives to share their experiences with other chapters. A number of other chapters have become quite involved with the International Science and Engineering Fair and Poster days for K-12 students and teachers. At the meeting, several board initiatives and projects were introduced, including the traveling course, funds to sponsor career days, and new member programs. Updates were given on the continuing education program and electronic initiatives (including electronic journals and online job postings).

Workshops sponsored that day by the Council of Chapters attended by Boston Chapter members included outreach activities, career days, and newsletters (the latter led by Chapter President Scott Evans).

*Submitted by Nicholas Horton*

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## **ANNOUNCEMENTS**

### **New Fellows of the ASA**

Chapter member Nitin Patel was elected a Fellow of the ASA this year. Other newly-elected Fellows from this area are Balgobin Nandram, Garrett M. Fitzmaurice, and Rebecca A. Betensky. Congratulations to all!

### **Annual Award Nominations**

The *BCASA Mosteller Statistician of the Year* award is presented each year at a banquet/lecture meeting in February. Our current statistician of the year is John McKenzie and previous recipients of the BCASA Mosteller Statistician of the Year Award are Fred Mosteller, Herman Chernoff, Marvin Zelen, Ralph D'Agostino, William DuMouchel, Don Rubin, Nan Laird, David Hoaglin, Arlene Ash, Richard Goldstein, Cyrus Mehta, Alan Gelfand, and Alan Zaslavsky. Anyone wishing to make suggestions regarding possible future recipients is encouraged to contact Scott Evans (evans@sdac.harvard.edu).

### **Chapter Logo**

We need a chapter logo! If you are artistic and have some free time, email your design or designs to Shelley Hurwitz (hurwitz@hms.harvard.edu) or Tom Lane (tlane@alum.mit.edu). The planning committee will choose the best one for use in the Newsletter and Website and will acknowledge the artist.

### **Chapter Dues**

The BCASA newsletter is emailed to current members. Please be sure your membership is current by using the annual ASA membership renewal form and sending the BCASA dues to ASA, or by sending the BCASA dues directly to the BCASA. The BCASA membership fee is \$9 (\$3 for students). See the ASA web site for more information including ASA membership discounts: <http://www.amstat.org/membership/join.html>.

## Job Opportunities

**BIostatistician:** The Center for Clinical Investigation at Brigham & Women's Hospital is seeking a highly-qualified biostatistician to support all aspects of clinical investigation, including design and analysis of clinical studies, collaboration with investigators affiliated with Harvard Medical School, grant and protocol development and review, and teaching and mentoring of junior investigators. The individual must have an MS or PhD in statistics or biostatistics, a strong record of collaborative research, excellent interpersonal skills, excellent oral and written communication, multitasking capability to handle numerous simultaneous projects, and a strong commitment to excellence in research. Candidates with broad consulting interests who enjoy collaborating with physicians and other research staff are encouraged to apply. Expertise in study design, grant writing, clinical trials, case-control and cohort studies, statistical genetics, protocol monitoring, hierarchical, longitudinal, survival, categorical, nonlinear, circadian, epidemiology, SAS. The Biostatistician will have a Research Associate appointment at Harvard Medical School. Interested candidates should send a letter of interest, CV, writing sample, and contact information for references to: Dr. Shelley Hurwitz, Biostatistics Director, Center for Clinical Investigation, 1620 Tremont Street – BC-CCI-3, Boston, MA 02120-1613. Applications are also accepted by email to [hurwitz@hms.harvard.edu](mailto:hurwitz@hms.harvard.edu).

**BIostatistician:** Rho, Inc., a Contract Research Organization, is seeking a Biostatistician to be located near Boston in the Newton, MA office. Job responsibilities include designing, implementing and communicating the statistical aspects of clinical trials. Qualified candidates will have either at least a master's degree in Statistics or Biostatistics or bachelor's degree in Biostatistics and up to 5 years of relevant full-time or part-time experience, preferably in the pharmaceutical industry or in the study of clinical trials. Strong written and oral communication skills as well as familiarity with SAS are essential. This is a full-time position. Rho provides a positive work environment and offers excellent benefits. Please send your resume and cover letter to Human Resources at [hr@rhoworld.com](mailto:hr@rhoworld.com); fax to 919-869-1261. Please reference the job title and job code STAT02BO. Rho, Inc. is an EOE/AA.

**BIostatistical Analyst:** Averion Inc. Under general supervision, the Biostatistical Analyst analyzes and interprets confidential data from a variety of sources. The Analyst is capable of working on moderately complex projects, suggesting analyses, compiling reports, charts and tables, creating specification documents for the derived datasets and analysis programming, as well as developing and executing a quality assurance plan. Required qualifications: M.S. in Biostatistics or related discipline; strong computer skills including familiarity with SAS; good written and verbal communication skills; good problem solving and creativity skills; good time management skills; the ability to prioritize, meet deadlines, and multi-task. Preferred qualifications: 1 year of research experience in life sciences. Please forward resumes to Averion Inc., 4 California Ave., Framingham, MA 01701, Attn: Human Resources, or e-mail resume to [hr@averioninc.com](mailto:hr@averioninc.com).

**Senior Biostatistician:** Alkermes, Inc., 88 Sidney St., Cambridge, MA 02139. Req #04-95R. Job Description/Key Duties: Participate on clinical development teams to help design and write statistical sections for clinical study protocols. Provide leadership and work effectively with clinical teams to describe and analyze data. Provide technical support to statistical activities that require additional theoretical thinking. Implement and extend statistical methods that will empower the interpretation of complex data. Write statistical summaries that will communicate key data driven conclusions from a statistical perspective. Work closely with data management and the programming group to expedite capture of key data so that data analysis can be performed in a timely manner. Personal Attributes Needed: Able to communicate effectively verbally and in writing. Highly motivated. Detail and process oriented. Flexible and creative. Welcomes challenge and responsibility. Team-player, yet decisive and able to remain focused. Can achieve results in a fast paced and changing environment. Minimum Education & Experience: PhD in Biostatistics or related field with 0-2 years or MS with 5 years experience in the pharmaceutical industry with statistical methods applied to clinical trials in a clinical development environment. A solid understanding of statistical considerations and methods applied in a clinical trials setting. Training in Generalized Linear Models (GLM) and robust data methods. A solid mastery of statistical software (SAS and/or Splus.) Demonstrated ability to work on multiple projects simultaneously. Reports to: John Loewy. Contact Vasu Sethuraman ([Vasu.Sethuraman@Alkermes.com](mailto:Vasu.Sethuraman@Alkermes.com)). Only applicants that are available by October 1 should submit their resumes.

**Faculty Positions in Biostatistics:** Boston University School of Public Health Department of Biostatistics is seeking applicants to participate in methodological and collaborative research and teaching activities. The Department has 18 full-time faculty members, MA and PhD candidates in Biostatistics, and concentrators for the MPH degree. More information about these open faculty positions can be found at [www.bumc.bu.edu/sph/index.htm](http://www.bumc.bu.edu/sph/index.htm). Available positions include: Associate/Full Professor - experienced in clinical trials, expected to take a leading role in developing research in this area. Assistant Professor (2 positions) to collaborate with the Boston Veterans Administration on clinical trials projects. Assistant/Associate Professor to collaborate with a clinical center focusing on research of the aged. Assistant/Associate Professor to collaborate with a research center focusing on clinical research and arthritis. Assistant/Associate Professor to collaborate on statistical genetics projects. Send CV, research goals, teaching experience, and 3 reference letters to Dr. L. Adrienne Cupples, Boston University SPH, 715 Albany St., T4E, Boston, MA 02118. Boston University is an EOE/AA Employer.



The *BCASA Newsletter* is published four times a year during the academic year and is emailed to current BCASA members. Send your comments to any of the officers or newsletter production committee members.

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**BCASA CHAPTER OFFICERS**

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<i>President, 2003-04</i>	Scott Evans, Harvard School of Public Health
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<i>Program Chair, 2003-04</i>	Tom Lane, The MathWorks
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