BCASA NEWSLETTER

Boston Chapter of the American Statistical Association

Serving Maine, Massachusetts, New Hampshire, Rhode Island, and Vermont

Homepage: http://www.amstat.org/chapters/boston   Newsletter: BCASANews@verizon.net

Upcoming Events

September 28 7:30 pm	Buckingham Browne and Nichols School	Victor Lo: Causal Business Analytics
October 4 4:30 pm	Suffolk Law School	Panel: Statistical Consulting and the Law
October 20	World Statistics Day	
October 26 6:30 pm	Nashua Public Library	Sabir Umarov: Q-Central Limit Theorems
October 30 8:00 am	MathWorks	Mark Glickman: Bayesian Statistics

EVENING LECTURES

Causal Business Analytics

Victor Lo
Fidelity Investments and Bentley University

Date	Tuesday, September 28, 2010
Time	6:30 pm light dinner; 7:30 pm lecture
Cost	Dinner $8 chapter members, $12 others. Lecture free.
Location	Buckingham Browne & Nichols School, 80 Gerry's Landing Road, Cambridge, MA 02138
Directions	http://www.bbns.org/contact/directions
Registration	http://lo.eventbrite.com/ by September 21, 2010.
Rides	Arrange through BCASA group on *Facebook* or *Linkedin*
Co-Sponsor	INFORMS http://boston.chapter.informs.org

Abstract

Statistics, Data Mining, and Operations Research have been widely applied in many business areas over the past several decades. Many telecommunication, credit card, and retail corporations, for examples, routinely make use of customer data to understand customer needs and predict future behavior, resulting in highly targeted actions to improve customer relationships and maximize profitability. Actions of business firms may include sales interactions, direct mails, site optimization, product recommendation, pricing change, incentive offering, or simply broadcast advertising. How do we know if a business action is successful in achieving its objective? Can we carry out scientific experiments in a business setting? How can we use advanced analytics to optimize business goals?

This lecture will examine how to address the causal impact of business actions. The analytics process includes design, measurement, predictive modeling, and optimization. Illustrations from marketing analytics will be given. Methodologies employed include A/B testing, fractional factorial

design, propensity scoring, statistical modeling, cross-sectional time series analysis, machine learning, and integer programming. Future research opportunities will also be given.

Q-Central Limit Theorems, Tsallis' Q-Statistic, and Their Applications

Sabir Umarov
Tufts University

Date	Tuesday, October 26, 2010
Time	5:00 pm appetizers at Martha's Exchange (Nashua, NH). 6:30 pm lecture.
Cost	No cost
Location	Nashua Public Library, 2 Court Street, Nashua, NH 03060
Directions	http://www.nashua.lib.nh.us/directions.htm
Registration	http://umarov.eventbrite.com/
Rides	Arrange through BCASA group on *Facebook* or *Linkedin*
Co-Sponsor	New Hampshire Chapter of the Communications and Signal Processing section of IEEE

Abstract

The classical central limit theorem (CLT) and /alpha/-stable distributions have rich applications in theoretical probabilistic and statistical studies, as well as various applied sciences including statistical mechanics, biostatistics, signal processing, econometrics, etc. As is known, the density function of a normal distribution with a given mean and variance maximizes the Boltzmann-Gibbs-Shannon (BGS) entropy. The Gaussian distribution is thus the maxent solution for BGS entropy. In 1988 an entropic form generalizing the BGS entropy was introduced by physicist C. Tsallis. The Tsallis' entropic form depends on a real parameter /q/, recovering the BGS entropy in the limit case /q/=1. The maxent for Tsallis' entropy for a given /q/ under some natural constraints is a /q/-Gaussians (deformed exponential), with either compact-support or heavy-tail decay. These distributions arise in complex systems, impacted sometimes by nonlinear processes, and play an important role in physical descriptions of market trading, biological processes, and correlated noise sources.

In the talk we discuss /q/-Gaussians and their properties, several versions of /q/-central limit theorems, which generalize the classical central limit theorem, and/ q-alpha/-stable distributions. Applications of this novel theory have been increasing over the last decade. Some of these applications will be presented in the talk.

SHORT COURSE

Bayesian Statistics: A Practical Introduction

Mark E. Glickman
Boston University

Date	Saturday, October 30, 2010
Time	Check-in: 8:00 am. Course: 8:30 am to 1:00 pm. Break: 10:30 to 11:00.
Cost	BCASA members $35; students $25; Others $50.
Location	MathWorks, 3 Apple Hill Drive, Natick, MA 01760
Directions	http://www.mathworks.com/company/aboutus/directions.html
Registration	http://mglickman.eventbrite.com/ by October 24, 2010
Prerequisite	Familiarity with classical statistics and basic probability.
Rides	Arrange through BCASA group on *Facebook* or *Linkedin*
Co-Sponsor	New Hampshire Chapter of the Communications and Signal Processing section of IEEE

Abstract

Most statisticians' initial exposure to statistics is from the classical or "Frequentist" point of view. This comes as no surprise, as most statistical software encourages the nearly-exclusive use of classical statistical methods, and scientific journals tend to be much more accepting of the results of classical analyses. In contrast, Bayesian statistics is often treated like a footnote in an otherwise lengthy body of statistical knowledge. Relatively few classically-trained statisticians appreciate, for example, that Bayesian statistics is not a collection of special tools or clever statistical models and procedures,

but is a competing framework for statistical inference that is self-consistent, does not require inventing new methods when one encounters a difficult problem, and enables a statistician to prioritize thinking critically and scientifically about constructing appropriate data models rather than focus on the procedures to analyze the data.

This short course is aimed at practicing statisticians who are comfortable using classical approaches to data modeling and analysis, but are curious to learn more about the details of Bayesian statistics. The course is equally appropriate as a refresher in Bayesian methods. No previous knowledge of Bayesian statistics is assumed. Topics will include: the philosophical underpinnings of Bayesian statistics; Bayes rule; prior and posterior distributions; choice of a prior distribution; predictive distributions; summarizing inferences; sequential updating; model selection and Bayes factors; and basic applications. Modern computational tools including Monte Carlo Markov Chain simulation will be introduced. The course will emphasize how to think from the point of view of a Bayesian statistician.

PANEL DISCUSSION

Statistical Consulting and the Law

Katherine Monti, Moderator
Rho, Inc.

Date	Monday, October 4, 2010
Time	Panel 4:30 pm to 6:30 pm, followed by light dinner
Cost	Dinner $12 chapter members, $16 others. Panel free.
Location	Suffolk University Law School, 120 Tremont Street, Boston, MA 02108
Directions	http://www.law.suffolk.edu/about/directions.cfm
Registration	http://lawpanel.eventbrite.com/ by September 29, 2010.

Panelists　　　　　　　Arlene Ash *UMass Medical School*
Rich Goldstein *Statistical Consultant*
Scott Evans Harvard School of Public Health
Dominique Haughton *Bentley University*
Arnold Barnett *MIT*
Jim Greiner *Harvard Law School*

Abstract

Distinguished statisticians speak about their experiences as expert witnesses in legal proceedings. Lawyers will also contribute to the discussion.

ANNOUNCEMENT

World Statistics Day

The United Nations has proclaimed October 20, 2010 as the first annual World Statistics Day. See *http://unstats.un.org/unsd/wsd/*

REPORTS

Council of Chapters Representative Report

James MacDougall
Ironwood Pharmaceuticals

The Council of Chapters Governing Board (COCGB) met on August 3, 2010 during the JSM meeting in Vancouver BC, chaired by V.A. Samaranayake. This is a summary of the meeting (kudos to Vanessa Xanthakis for her notes):

ASA Director of Science Policy Steve Pierson (pierson@amstat.org) spoke about the *Statistical Literacy Bill* that is expected to be introduced in the U.S. Congress during the next few months. Steve suggested that each chapter urge its congressional representatives to co-sponsor the bill. The COCGB reported that plans exist for webinars regarding how to improve meeting attendance and technical presentations.

The *COC Planning Committee* proposed activities designed to increase involvement in cross-chapter projects.

The *COC Board* reported ASA's adoption of the tagline: "Promoting the Practice and Profession of Statistics". Formal and Informal versions of descriptive statements regarding the ASA were also presented.

There were also reports on current Council of Chapters Projects:

Annual Report: The Annual Report is a key piece for the COCGB to help chapters run better if any problems exist. If chapters have their own website, they were urged to make sure it's up to date. The Annual Report will be accessible from December 1st through January 31st.

Booth at JSM: The Council of Chapters will have a table at the ASA booth at the 2011 JSM Expo so a suggestion was made for chapters to create their own handout that would include information

regarding the chapter and contact details so visitors could get information on chapters close to where they live.

International Science and Engineering Fair: ASA awards participants for the use of statistics. Students from around the world show up at the Fair. There are approximately 1500 projects submitted. All projects are first screened and the 100 or so best projects selected. Students are interviewed and the top three projects identified. The 2011 Fair will be held in Louisiana and the 2012 fair in Pittsburgh.

Traveling Course: The Council of Chapters sponsors a traveling course for which all chapters are eligible. Three courses were awarded last year. The local chapter covers the local arrangements. The date of the short course can be somewhat flexible.

MU Sigma Rho

Liam O'Brien
Colby College

The nomination cycle for Mu Sigma Rho (national honor society) members is almost complete. We currently have 49 nominees (a new record!): 2 from Harvard, 4 from UMass Amherst, 5 from Mount Holyoke, 9 from Smith College, 9 from Colby, and 20 from Boston University. Students have been informed of their nominations and been asked if they would like to pursue induction. As in past years, inductees receive a free membership in the ASA as well as the BCASA, plus a subscription to *Chance* magazine.

See http://www.math.smith.edu/~nhorton/msr.html

JOB ANNOUNCEMENT

Faculty Position, Babson College

The Mathematics and Science Division of Babson College invites applicants for a tenure-track position starting September 1, 2011. The ideal candidate will have a Ph.D. in statistics, a proven teaching record with the desire to deliver statistics, operations research, and mathematics courses to undergraduate business students and MBAs, and an active research agenda. The anticipated teaching load is four classes per academic year. The appointment will be made at a rank commensurate with the individual's record.

Babson College is a highly selective college located 14 miles west of Boston, with approximately 1900 undergraduate students. The undergraduate curriculum integrates core competencies, key business disciplines, and the liberal arts. The college has recently formalized a partnership with Olin College of Engineering and with Wellesley College.

Babson is an Affirmative Action/Equal Opportunity employer committed to enhancing diversity across all levels of the College. Candidates who believe they can contribute to this goal are strongly encouraged to apply.

Interested applicants should send a current CV and a brief statement about their teaching history and philosophy to Prof. Steven E. Eriksen, Chair, Mathematics and Science Division, Babson College, Babson Park, Wellesley, MA 02457-0310 or e-mail these materials to eriksen@babson.edu.

Announcements

Chapter members honored

Recently three Massachusetts residents were named ASA Fellows:

    Brent Coull, HSPH
    Christopher Schmid, Tufts Medical Center
    Mingxiu Hu, Millennium/The Takeda Oncology Company in Cambridge.

In addition, two other Harvard statisticians (Gary King and Don Rubin) were elected to the National Academy of Sciences. Congratulations to all.

New England R Users Group

The Boston Chapter of the recently formed New England R Users group may be of interest to BCASA members. The group meets monthly at the Microsoft New England Research and Development Center to discuss various topics related to R. Currently, the group consists of mostly analysts and researchers using R in finance and biology, but anyone with an interest in R is welcome. Anyone interested is encouraged to join the New England R Users' Google groups page at: http://groups.google.com/group/new-england-r-users

Symposium to honor Stephen Lagakos

This letter is to inform you that we are planning a one-day symposium on Friday, October 22, 2010 in honor of our colleague Stephen Lagakos who died tragically in an accident in October of 2009. The symposium will be held in the Joseph B. Martin Conference Center at the Harvard Medical School and co-sponsored by the Department of Biostatistics (Harvard School of Public Health), the Center for AIDS Research (CFAR) and the New England Journal of Medicine. We are sending you an early notification of the symposium so those who wish to attend can make plans accordingly. The topics to be discussed reflect Steve's interests and include: HIV Prevention, Biostatistical Education in the 21st Century, and Clinical Trials.
        Robert Gallo (University of Maryland) will be the keynote speaker. A dinner will follow the symposium at which Harvey Fineberg (Institute of Medicine) will be the guest speaker.
        The symposium will be free of charge, and all are invited. Details will be forthcoming. We hope you will be able to attend. Please direct any inquiries to Leah Segal <lsegal@hsph.harvard.edu

New England Isolated Academic Statisticians

The 15th New England Isolated Statisticians Meeting (NEISM15) will take place on Saturday, November 6, 20010. The meeting will take place at Emmanuel College in Boston. This annual event is a wonderful opportunity for statisticians isolated (usually, but not always, in mathematics departments) to discuss, in some depth, topics related to teaching statistics.
        The organizers, Bob Goldman (Simmons College, robert.goldman@simmons.edu) and John McKenzie (Babson College,

mckenzie@babson.edu), are working on topics for the meeting and, of course, we welcome suggestions.

The organizers would particularly like to encourage new statistics teachers and instructors who have not attended previous NEISMs to come to NEISM15. We hope that a grant from the Boston Chapter of the ASA will enable us to reimburse travel expenses.

If you know of someone who may be interested in this event, please forward this email to them.

Please register for NEISM15 ASAP by October 31 at the latest. Simply email Bob Goldman your intention to attend.

Workshop on Missing Data Approaches in the Health and Social Sciences:
A Modern Survey

Organized by: Russell Steele, McGill University and the C Laboratoire des Statistiques, October 22nd, 2010, McGill University (Montreal, Quebec)

Description: Much of modern research in medicine and the social sciences requires the analysis of large databases of information. Although such databases are extremely valuable due to the immense quantity of information, they present challenges to data analysts when subjects' records contain incomplete (or missing) information. There is a great divide between the statistics research community and the non-statistical research community with respect to the methods used to analyze such data. Although statisticians have devised methods with statistically correct and efficient properties, many of these approaches have been unable to gain traction in the general community. In general, statisticians have proposed two different types of approaches: imputation of the missing values and weighting methods. Both of these approaches have relative advantages and disadvantages, but these have not often been jointly addressed in published research. The disagreements in the statistics community has led to confusion in the substantive community and even applied statisticians are unclear as to what constitutes correct, but practical approaches to complicated missing data problems.

This workshop will contain talks that broadly cover the most popular approaches to analysis of missing data in the medical and social sciences. Tentatively, the list of visiting speakers include James Carpenter (London School of Hygiene and Tropical Medicine) and Grace Yi (University of Waterloo, the CRM-SSC prize winner). Local researchers, including David Haziza (Université de Montéeal) and Michael Regier (McGill University) also will speak. The workshop is a precursor to the Statistics Theme Semester, which begins in January 2011at the Centre de recherches mathématiques. More details are available on the CRM website, http://www.crm.umontreal.ca/en/

Statistical Modeling Week

Statistical Modeling Week 2010 will be held in Boston on October 18-22, consists of three applications-oriented (practical applications plus necessary theory) workshops on the state-of-the-art in statistical modeling. Course 1, Predictive Modeling with Many Correlated Predictors, addresses analysis of high-dimensional data with both penalty-based as well as new component-based approaches. Course 2, Latent Class and Finite Mixture Modeling, will include examples using Latent GOLD, the #1 package for Latent/Class (finite mixture models). We're also very excited to announce that Prof. Jordan Louviere, a recognized authority on Discrete Choice Models, will be making a rare appearance in the US (from Australia) to teach Course 3, Modeling Consumer Decision Making and Discrete Choice Behavior.

To see the full details of SMW 2010, please visit:
http://www.statisticalinnovations.com/workshops/workshops.html

A 20% discount is available for all BCASA members. Members can register by emailing Will Barker at will@statisticalinnovations.com.

Boston INFORMS chapter meeting

Boston Chapter INFORMS will have their fall kickoff meeting at The MITRE Corporation at 6:30 pm on September 15 with Professor Nathan Eagle (MIT) giving a talk entitled "Inferring Social Network Structure using Mobile Phone Data". This talk will be video-linked to the Michigan INFORMS chapter. Please note the need to RSVP as well as other details below. Also scheduled is Horia Tipi(FICO) on "Solving Super-Size Problems with Optimization" in mid October, and Anna Nagurney (UMASS) on "Supply Chain Network: Challenges and Opportunities from Analysis to Design" on November 23.

Date: Wednesday, September 15, 2010

Time: 6:30 pm to 8:30 pm

Location: THE MITRE Corporation, Building M (2M-513)

Speaker: Professor Nathan Eagle (MIT)

Title: Big Data, Global Development, and Complex Social Systems

Abstract: Petabytes of data about human movements, transactions, and communication patterns are continuously being generated by everyday technologies such as mobile phones and credit cards. This unprecedented volume of information facilitates a novel set of research questions applicable to a wide range of development issues. In collaboration with the mobile phone, internet, and credit card industries, my colleagues and I are aggregating and analyzing behavioral data from over 250 million people from North and South America, Europe, Asia and Africa. I will discuss a selection of projects arising from these collaborations that involve inferring behavioral dynamics on a broad spectrum of scales; from risky behavior in a group of MIT freshman to population-level behavioral signatures, including cholera outbreaks in Rwanda and wealth in the UK. Access to the movement patterns of the majority of mobile phones in East Africa also facilitates realistic models of disease transmission as well as slum formations. This vast volume of data requires new analytical tools - we are developing a range of large-scale network analysis and machine learning algorithms that we hope will provide deeper insight into human behavior. However, ultimately our goal is to determine how we can use these insights to actively improve the lives of the billions of people who generate this data and the societies in which they live.Nathan Eagle is a Visiting Assistant Professor at the MIT, a Research Assistant Professor at Northeastern University, and an Omidyar Fellow at the Santa Fe Institute. His research involves engineering computational tools, designed to explore how the petabytes of data generated about human movements, financial transactions, and communication patterns can be used for social good. Eagle also serves as the CEO of txteagle Inc, a mobile crowdsourcing company that has recently become one of the largest employers in Kenya. He holds a BS and two MS degrees from Stanford University; his PhD from the MIT Media Laboratory on Reality Mining was declared one of the '10 technologies most likely to change the way we live' by the MIT Technology Review. His academic work has been featured in Science, Nature and PNAS, as well as in the mainstream press.

Everyone is welcome. However, MITRE security needs all people interested in attending must RSVP by September 12 to me (lservi@mitre.org) with their name, affliation, email, and citizenship. I will confirm each RSVP.

Meeting Schedule: 6:30 pm - 6:50 pm Informal reception, 6:50 pm - 7:00 pm Remarks by Les Servi, Chair Boston Chapter Washington Chapter, 7:00 pm - 8:00 pm Talk by our featured speaker

Directions: 202 Burlington Road, Bedford, MA (follow signs to M building).
http://www.mitre.org/about/locations/ma_bedford.html

Funding Opportunities

In case you weren't aware Facebook has a very generous fellowship program. See
                http://www.facebook.com/careers/fellowship.php for details.
The National Security Agency Mathematical Sciences Program (MSP) provides research
                grants and sabbatical funding
                (http://www.nsa.gov/research/math_research/index.shtml).

Chapter Elections

Congratulations to the following members were elected at the May 4 event as officers with terms starting on January 1:

   * President: Tom Lane.
   * Program Chair: Maureen Mayer.
   * Secretary: Sachiko Miyahara.

Sachiko will take office immediately, succeeding Tzu-min Yeh who is leaving the area. Thanks to Tzu-min for her service to the Chapter. In addition, the Chapter intends to create a new officer position of Webmaster to handle the web site and e-mail list. Ching-Ti Liu has graciously agreed to take on this position.

Committee on Applied Statisticians

The Committee on Applied Statisticians (CAS) is a committee for the ASA that supports applied statisticians. Most recently, the committee worked hard to plan many events for JSM 2010, including our annual social mixer, many invited and topic contributed paper and poster sessions as well as roundtables applicable to the applied statistician. We also helped facilitate the nomination of Dr. Brent James, who received the 2010 Deming Lecturer Award. The committee has already begun planning for JSM 2011 – among other sessions, we hope to have a panel discussion of well known applied statisticians.
        CAS also coordinates finding articles for the monthly Master's Notebook, published in the Amstat News. As the title suggests, the articles have topics that are particularly geared towards statisticians with masters' degrees in statistics. But, feel free to check them out regardless!
        The committee also has an opportunity to be involved with other planning committees within the ASA. For example, members of our committee have been working on the membership growth initiative within the JSM and also planning of a possible applied statisticians' conference.

Our formal charges are the following:

- Promote forums showcasing relevant technologies and emerging methods benefiting applied statisticians
- Facilitate the recognition of applied statisticians within various fields of application
- Coordinate with other ASA groups/units to ensure attention to the needs, priorities and career paths of applied statisticians
- Increase awareness and promote careers in applied statistics

Our committee is composed of nine members on staggered terms. We have members from all across the country and from different areas of work (academia, government, private sector, etc.). Should you like further information or wish to become further involved, please contact Heather Litman (hlitman@neriscience.com) a current member of the CAS who resides in the Boston area.

Planning committee invitation from Dominique Haughton (President)

Please contact me at dhaughton@bentley.edu if you would like to join the BCASA Planning Committee. We meet about once every six weeks and the chapter provides (tasty) dinners during our meetings. Come and have an impact on the choice of events proposed by the chapter! And most of all, thank you for being part of the BCASA community!

Five College Statistics Postdoc

The Five College consortium (Amherst, Hampshire, Mount Holyoke and Smith Colleges and UMass Amherst) will be hiring a postdoctoral associate beginning in Fall 2011, to teach at the liberal arts colleges and conduct research at UMass. The position is ideal for exploring a possible liberal arts career while still maintaining a position at a research university. Contact Michael Lavine (lavine@math.umass.edu) or look for the advertisement on mathjobs.org this Fall.

BCASA Consulting Website

This month Yorghos Tripodis, of the BU School of Public Health, has taken on the position of moderator position of the BCASA Yahoo newsgroup email list known as BCASA-Consultants. A company or person looking to hire a statistical consultant can request help by sending an email to the list. This newsgroup also accepts newsworthy postings of interest to the BCASA regional statistical consulting community. Statisticians wishing to provide consulting services are welcome to join the list to receive consulting requests. Let's thank Yorghos for taking on this new position and please keep those posts coming. Visit http://tech.groups.yahoo.com/group/BCASA-Consultants for more information.

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