

# BCASA NEWSLETTER

## Boston Chapter of the American Statistical Association

*Serving*

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

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Volume 32, No. 4, March 2014

Homepage: <http://www.amstat.org/chapters/boston>

E-Mail: [BostonChapterASA@gmail.com](mailto:BostonChapterASA@gmail.com)

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| SCHEDULED EVENTS & MEETINGS |                                      |                |
|-----------------------------|--------------------------------------|----------------|
| March 26, 2014              | Evening Panel Series                 | Cambridge, MA  |
| March 28-30, 2014           | Five College DataFest                | Amherst, MA    |
| April 16, 2014              | Evening Lecture Series               | Cambridge, MA  |
| April 25-26, 2014           | New England Statistics Symposium     | Boston, MA     |
| May 9, 2014                 | Afternoon Lecture Series             | TBD            |
| May 14-16, 2014             | Atlantic Causal Inference Conference | Providence, RI |
| August 2-7, 2014            | Joint Statistical Meetings           | Boston, MA     |

Event schedule at the chapter website: <http://www.amstat.org/chapters/boston>

Detailed announcements appear later in this newsletter. All events are announced in advance to members on our email list. We are currently planning events for the coming year. If you have suggestions please contact Program Chair John McKenzie, [mckenzie@babson.edu](mailto:mckenzie@babson.edu).

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## **EVENING PANEL SERIES**

### **Creating a Data Science Course**

**Joe Blitzstein, Statistics Department, College of Arts and Sciences, Harvard University**  
**Rob Carver, International Business School, Brandeis University**  
**Rapael Irizarry, Biostatistics Department, School of Public Health, Harvard University**

**Date:** Wednesday, March 26, 2014

**Time:** Light Dinner: 6:30 pm; Presentation: 7:00 pm

**Location:** Room 705, Science Center, Harvard University, Cambridge, MA

**Directions, Transportation, Parking, and Site Map:** <http://www.harvard.edu/visitors/directions>

**Cost:** Dinner: \$8 for chapter members; \$10 for non-members; students free.

Presentation: free.

**Registration:** [bcasa2014datasci.eventbrite.com](http://bcasa2014datasci.eventbrite.com). Request registration by March 24

#### **Abstract:**

Higher education has recognized the need for courses to analyze data, for which classical methods are no longer appropriate. Included in the titles of these courses are analytics, big data, and data science. All such courses integrate and build upon methods and concepts from many disciplines, among them statistics, computer science, data management, operations research, and mathematics. They have appeared in departments from schools of business, engineering, and the sciences. The contents of these courses differ greatly. This panel will discuss the topics that should be present in any data science course, along with the topics that might be included in a course from their field of study. The panelists will be asked to talk about other components of such a course, such as appropriate textbooks, software, and hardware. There will be ample time for questions and comments from the audience.

## ***EVENING LECTURE SERIES***

### **ASSISTments, Educational Software for Students of Mathematics and Statistics**

**Neil T. Heffernan III, Department of Computer Science and Learning Sciences & Technologies, WPI**  
**Eric Simoneau, Department of Mathematics, Boston Latin School**

**Date:** Wednesday, April 16, 2014

**Time:** Light Dinner: 6:15 pm; Presentation: 7:00 pm

**Location:** Buckingham Browne & Nichols School,  
80 Gerry's Landing Road, Cambridge, MA

<https://maps.google.com/maps?daddr=80+Gerrys+Landing+Rd%3F,+Cambridge,+MA+02138>

**Registration:** <http://bcasa2014apr.eventbrite.com>. Request registration by April 9

**Cost:** Dinner: \$8 for chapter and section members; \$10 for non-members; students free.

Presentation: free.

**Co-Sponsor:** Northeastern Section of the Mathematical Association of America

#### **Abstract:**

ASSISTments is a free web-based platform that helps students learn mathematics and statistics even as it assesses their knowledge. It allows teachers to write individual ASSISTments (composed of questions and associated hints, solutions, web-based videos, etc.). The word ASSISTment blends tutoring "assistance" to students with "assessment" reporting to teachers. It is used by over 40,000 students a year in the United States. This talk will explain how it has been used in K-12 mathematics, but will emphasize how it has been used to teach statistics to secondary school students.

STATS4STEM is a collection of free statistics questions that can be used to assess student learning, working with ASSISTments. These questions are perfectly suited for an Introduction to Statistics or AP Statistics Course. Each question from its library of questions can be added or modified in any manner to create a problem set to meet your specific needs. Students get instant feedback as they progress through their assigned problems, including hints on how to solve the problem if needed. Teachers get a dashboard to monitor student progress. STATS4STEM is also a web-interface, called Rweb, for the statistics package called R, so that students can analyze real-world data. The presenters will explain how they have designed experiments to show the effectiveness of both ASSISTments and STATS4STEM.

## **AFTERNOON LECTURE SERIES**

### **The Sabermetric Revolution: Assessing the Growth of Analytics in Baseball**

**Ben Baumer, Department of Mathematics and Statistics, Smith College**

**Date:** Friday, May 9, 2014

**Time:** Light Refreshments: 4:00 pm; Presentation: 4:30 pm

**Location:** TBD

**Directions, Transportation, Parking, and Site Map:** TBD

**Registration:** <http://bcasa2014may.eventbrite.com>. Request registration by May 2

**Cost:** free.

#### **Abstract:**

Ben Baumer, former Mets sabermetrician, will discuss the 2014 book that he coauthored with Professor Andrew Zimbalist, leading sports economist, who also teaches at Smith College. They set the record straight on the role of analytics in baseball by correcting common misinterpretations and developing new methods to assess the effectiveness of sabermetrics on team performance. Tracing the growth of front office dependence on sabermetrics and the breadth of its use today, the authors explore how major league baseball and the field of sports analytics have changed in the decade since the 2002 season. Their conclusion is optimistic, but the authors also caution that sabermetric insights will be more difficult to come by in the future. *The Sabermetric Revolution* offers more than a fascinating case study of the use of statistics by general managers and front office executives: for fans and fantasy leagues, this book will provide an accessible primer on the real math behind moneyball as well as new insight into the changing business of baseball.



**2014 Joint Statistical Meetings and ASA's 175th Anniversary  
Saturday, August 2, 2014 to Thursday, August 7, 2014  
Boston, Massachusetts, USA**

The Joint Statistical Meetings is the largest gathering of statisticians held in North America. It is held jointly with the American Statistical Association, the International Biometric Society (ENAR and WNAR), the Institute of Mathematical Statistics, and the Statistical Society of Canada. Attended by over 5500 people, activities of the meeting include oral presentations, panel sessions, poster presentations, continuing education courses, exhibit hall (with state-of-the-art statistical products and opportunities), placement service, society and section business meetings, committee meetings, social activities, and networking opportunities. Boston is the host city for JSM 2014 and offers a wide range of possibilities for sharing time with friends and colleagues. This will also be ASA's 175th Anniversary and a celebration will be planned. For information, contact [jsm@amstat.org](mailto:jsm@amstat.org) or phone toll-free (888) 231-3473.

**2014 Five College DataFest  
Friday, March 28, 2014, 7:30 pm to Sunday, March 30, 2014, 4 pm  
University of Massachusetts Amherst**

The Five College DataFest (<http://www.science.smith.edu/departments/math/datafest/>), sponsored in part by the Five College Statistics Program and BCASA, will be held the weekend of March 29th and 30th at the University of Massachusetts in Amherst. DataFest is a nationally-coordinated competition that challenges undergraduates working in teams of up to five to extract meaningful insights from a rich and complex data set. A number of prizes will be awarded, including: "Best in Show", "Best Visualization", and "Best Use of External Data". Previous DataFests held at UCLA and Duke University have drawn large numbers of students, and we are hoping for a great turnout from the Five Colleges: Amherst, Hampshire, Mount Holyoke, and Smith Colleges, as well as UMass. Sponsorships opportunities are available -- please contact Ben Baumer ([bbaumer@smith.edu](mailto:bbaumer@smith.edu)) or Andrew Bray ([abray@smith.edu](mailto:abray@smith.edu)) for more information.

## 2014 New England Statistics Symposium (NESS)



2014 New England Statistics Symposium

Saturday, April 26, 2014 | 9:00am – 6:00pm  
With Short Courses Friday, April 25, 2014

Harvard School of Public Health  
677 Huntington Avenue, Boston, MA 02115

Be sure to register before it's too late!  
Registration ends: Friday, April 18, 2014

[www.hsph.harvard.edu/ness2014](http://www.hsph.harvard.edu/ness2014)

*Hosted by: The Department of Biostatistics*

NESS is an annual one-day symposium that began in 1987 that provides the opportunity for statisticians from academia, industry, and government to meet and exchange ideas regarding statistical methods and applications, and important issues in the statistics profession.

The mission of 2014 NESS is to foster statistics and its applications by promoting research in statistics, providing an educational opportunity for students and others to learn about statistical methods and its applications, and encouraging interaction and collaboration among statisticians.

For more information or to register, please visit our website at:

[www.hsph.harvard.edu/ness2014](http://www.hsph.harvard.edu/ness2014)

## We are delighted to announce our keynote speakers for the Event!



**Alan Agresti**

Professor Emeritus, *University of Florida*

Talk Title: The Rising of Academic Statistics and Biostatistics, with Focus on New England.



**Lee-Jen Wei**

Professor of Biostatistics, *Harvard School of Public Health*

Talk Title: Moving Beyond the Comfort Zone in Practicing Translational Statistics.

The format is a mixture of plenary speakers, invited sessions, and contributed sessions.

**NESS also has a student paper competition and a career development session.** Short courses are featured the day before (Friday, April 25, 2014).

### **The NESS program will also include invited sessions on themes such as:**

- Prospective Routine Medical Product Safety Surveillance: the FDA Mini-Sentinel System
- Personalized Medicine
- Performance Evaluation and Measurement in Sports
- Statistical Issues in Infectious Disease Research
- Statistics in Oncology Clinical Trials
- Innovations in Statistics Education
- Latest Advances in Sequential Analysis with Applications
- Career Development
- Comparative Effectiveness Research
- Business Statistics

### **Invited session speakers include:**

- Bob O'Neill, FDA
- Joe Blitzstein, Harvard University
- Martin Kulldorff, Harvard Medical School
- Mark Glickman, Boston University
- Victor DeGruttola, Harvard School of Public Health
- David Schoenfeld, Harvard School of Public Health

# **NESS Short Courses**

Three short courses (1 full day) will also be offered on Friday, April 25, 2014 including:

## **Adaptive Design for Confirmatory Clinical Trials** *Cyrus Mehta and Charles Liu, Cytel Inc.*

This workshop will focus on strategies for efficient decision making via interim analyses of ongoing clinical trials using state-of-the-art methods for group sequential and adaptive designs. Topics covered will include group sequential design and monitoring with sample size re estimation, preserving type-1 error, computing power, obtaining point estimates and computing confidence intervals in the adaptive setting. Case studies in oncology and cardiology are used to reinforce the main points. The workshop includes a hands-on session with the EAST® 6.2 software.

## **Analysis of Big Data** *Han Liu, Princeton University*

The amount of data in our world is exploding and analyzing large datasets is becoming central in science, technology, and our society. This course introduces new statistical methods and computational tools for analyzing Big Data. This course covers the following topics:

1. Statistical challenges of Big Data Analysis
2. Handling massive data: divide-and-conquer statistical inference
3. Handling high dimensional data: regularization method
4. Handling complex and noisy data: robust semiparametric method
5. Large-scale statistical optimization: model-based optimization

The main focus of this course is to introduce new methodology and explain theoretical justification of these methods at an intuitive level.

## **Introduction to Measurement Error** *John Buonaccorsi, Professor Emeritus, University of Massachusetts-Amherst*

Measurement error is ubiquitous and it is well known that the inability to exactly measure either outcomes or predictors often leads to biased estimators and invalid inferences. This problem has received considerable attention of late across many areas, especially in epidemiology. This course will present an introductory and relatively applied look at measurement error with a focus on models used for measurement error, the impacts on naive analyses that ignore it, and an overview of techniques to correct for it. Emphasis is on misclassification in basic categorical models (estimating proportions and in two-way tables) and measurement error in predictors in linear and non-linear regression (including logistic regression). In the regression contexts we describe a variety of correction methods that are used with either replication or validation data. A number of illustrative examples from various disciplines will be presented and an overview of software options will be provided. While we present a little of the basic theory, the course focus is primarily applied so it is accessible to a broad audience and allows us to cover more topics in a limited amount of time. Students should have at least some prior exposure to basic categorical methods (single proportions and two-way tables) and linear and logistic regression and be familiar with seeing models and methods expressed in matrix-vector form.

No book is required although the lecture notes come mainly from Buonaccorsi (2010), *Measurement Error: Models, Methods and Applications*, Chapman & Hall.

Further details regarding registration, submission of abstracts, short courses, and the student paper competition will be forthcoming.



## 2014 Atlantic Causal Inference Conference



BROWN  
School of Public Health

### 2014 ATLANTIC CAUSAL INFERENCE CONFERENCE

Dear Colleagues:

Brown University is pleased to host the **2014 Atlantic Causal Inference Conference, May 14<sup>th</sup>-16<sup>th</sup>, 2014**. Check out the conference website: <https://sites.google.com/a/brown.edu/2014-atlantic-causal-inference-conference/home>

The Atlantic Causal Inference Conference is a gathering of statisticians, biostatisticians, epidemiologists, economists, social science and policy researchers to discuss methodologic issues with drawing causal inferences from experimental and non-experimental data. The inaugural meeting was held in 2005 with a small group of researchers at Columbia University and has since grown into an annual event with over 100 attendees. Recent meetings have been hosted by the University of Michigan, New York University, Johns Hopkins University, University of Pennsylvania and Harvard University. What began as a regional conference has grown in geographic reach, now attracting researchers from across the US and from abroad.

Registration and abstract submission period is scheduled to be open **beginning February 1st through May 7th, or until spaces are filled**. All researchers are invited to submit abstracts to be considered for an oral presentation in addition to a poster session (*submission period closes April 1<sup>st</sup>*). The conference registration fee (professionals \$125/Students \$75) covers attendance for the scientific program on May 15-16th, and includes the cost of conference materials, continental breakfast on May 15th and 16th, refreshments during break periods, and a box lunch on May 15th. The fee does not cover the cost of parking, the junior researcher dinner on May 14th, or the short course on May 14th. To attend the May 14th short course on Causal Mediation Analysis, a one-time fee of \$75 will be charged. Seats are limited, so register soon to guarantee your space!

Joe Hogan  
Kate Ellis

On behalf of the ACIC Organizing Committee

## **NEWS & ANNOUNCEMENTS**

### **Scott Evans Named Chance Executive Editor by the American Statistical Association**

Scott R. Evans, a senior research scientist at the Harvard School of Public Health and the director of the Statistical and Data Management Center for the Antibacterial Resistance Leadership Group, is the new executive editor of CHANCE magazine, announces American Statistical Association (ASA) Executive Director Ronald L. Wasserstein. His term began with the New Year and runs through 2016. More information is available at [http://www.amstat.org/newsroom/pressreleases/2014\\_EvansNamedChanceExecutiveEditor.pdf](http://www.amstat.org/newsroom/pressreleases/2014_EvansNamedChanceExecutiveEditor.pdf)

### **Congratulations to Mike Parzen and Joe Blitzstein**

Mike Parzen, a senior lecturer at Harvard, was selected as a recipient of the ABLConnect Learning Innovator Prize for this Globe Toss Icebreaker. It is an activity in which the instructor throws an inflatable globe of the world into his introductory statistics class to get it excited about learning future topics of experimentation, randomness, and estimation. ABLConnect is an easily searchable database that categorizes existing active learning efforts at Harvard and other higher education institutions. Parzen was recently named as one of the Class of 2014's favorite professors, along with Joe Blitzstein.

### **Nominations for Chapter Officers**

Several BCASA officer terms are up for election this year for terms starting on January 1, 2015. These are President, Program Chair, Webmaster, and Newsletter Editor (two-year terms).

We typically hold elections at the final event of the academic year. If you are interested in nominating yourself or anyone else for these positions, please contact current President Tom Lane ([tlane@alum.mit.edu](mailto:tlane@alum.mit.edu)) or Past President Dominique Haughton ([dhaughton@bentley.edu](mailto:dhaughton@bentley.edu)). New volunteers are always welcome and greatly needed.

### **The 12th Annual Connecticut Chapter Mini-Conference**

The 12th Annual Connecticut Chapter Mini-Conference: Statistics in Evidence Synthesis – Comparative Effectiveness Research and Personalized Medicine will be held Wednesday, March 26, 2014 on the Boehringer-Ingelheim, Ridgefield, CT. The invited speakers for the 2014 conference are Demissie Alemayehu, Pfizer Inc. and Columbia University, Jason Hsu, The Ohio State University, Eric Laber, North Carolina State University, Christopher Schmid, Brown University, and Lei Shen, Eli Lilly & Company. A contributed poster session will be held as part of the conference.

### **Planning Committee Meeting**

The BCASA Planning Committee is open to all interested members. We meet approximately every six weeks to plan upcoming events of the chapter. Please join us and have an impact on chapter events and activities. Dinner is provided. For more information contact Chapter President Tom Lane, [tlane@alum.mit.edu](mailto:tlane@alum.mit.edu).

### **BCASA ASA 175<sup>th</sup> Anniversary Steering Committee**

Boston is the home city of the ASA ([http://magazine.amstat.org/blog/2013/04/01/175\\_4\\_2013/](http://magazine.amstat.org/blog/2013/04/01/175_4_2013/)). The American Statistical Association was founded on November 27, 1839 in Boston. The ASA Board of Directors has created the 175th Anniversary Steering Committee to plan for its dodransbicentennial. The Boston Chapter of the ASA has created a similar committee to "Celebrate Our Past" and "Energize Our Future", the themes of the 175th anniversary. It will consider local anniversary activities, including those associated with the 2014 Joint Statistical Meetings. Members interested in participating in the BCASA ASA 175th Anniversary Steering Committee should contact John McKenzie at [mckenzie@babson.edu](mailto:mckenzie@babson.edu).

## **Volunteers Needed for Statistical Poster Competition**

The Connecticut Chapter of ASA will sponsor the 2014 Annual Statistical Poster Competition for Grade K through 12. Volunteers are needed to help judge posters (April 12, 2014) and/or to help with the awards ceremony (May 3, 2014), both of which will be held at Bristol-Myers Squibb in Wallingford, CT. One teleconference in March will be scheduled to go through the criteria to be used in the judging. For more information, please go to:

[http://www.amstat.org/chapters/Connecticut/home/Poster/poster\\_index.htm](http://www.amstat.org/chapters/Connecticut/home/Poster/poster_index.htm)

Please send [valerie.pare@uconn.edu](mailto:valerie.pare@uconn.edu) or [jennifer.boyko@boehringer-ingelheim.com](mailto:jennifer.boyko@boehringer-ingelheim.com) a message with the day(s) you would like to volunteer or with any questions. Your involvement is greatly appreciated!

## ***Event Funding: Request For Proposals (RFPs)***

The Boston Chapter of ASA is accepting proposals for supplementary support funding to plan and conduct events with a statistical theme. Qualified events include short courses and other educational events but are not limited to these. The RFP is open until further notice.

Proposal requirements and additional information:

- Proposals should be no more than 3 pages in length with 2 pages being a description of the program, date and time, program sponsors, location and information on parking or public transportation, targeted audience/expected attendees, rationale for why the program is important and will be attractive to potential attendees, and people responsible for program planning and conduct. The last page is a budget plan.
- Funding for up to \$750 can be requested.
- The event must be open to all chapter members.
- The event must be advertised in the chapter newsletter.
- It is expected that the BCASA is not the only resource supporting the event (e.g., a department or other sponsor should be involved in organization or nominal fees to attendees should be charged).
- Any fees charged to attendees should be reasonable, with special discounts for students. The expectation is that the event will be affordable to statisticians.
- A report of the event must be submitted to BCASA upon completion of the event with possible publication of the event in the BCASA newsletter. The report should include an estimate on the number of attendees, attendee comments, an evaluation of the program, and a financial summary.
- Unused funds should be returned to the BCASA.
- Proposals will be reviewed by members of the Planning Committee of the BCASA. Applicants will be contacted shortly after the Planning Committee meeting that follows application submission.
- Questions should be directed to Scott Evans, Ph.D. ([evans@sdac.harvard.edu](mailto:evans@sdac.harvard.edu)).
- Proposals should be electronically submitted at least 6 weeks prior to the program to Scott Evans, Ph.D. ([evans@sdac.harvard.edu](mailto:evans@sdac.harvard.edu)).

## **TREASURER'S REPORT**

### **Income**

|                           |           |
|---------------------------|-----------|
| Membership dues and ASA:  | \$3486.00 |
| Short courses and Events: | \$1283.86 |
| <u>Total Income:</u>      | \$4769.86 |

### **Expenses**

|                            |           |
|----------------------------|-----------|
| Short Courses and Events:  | \$7212.41 |
| Planning Committee:        | \$979.57  |
| Misc:                      | \$125.00  |
| (Donation, Stamps, WT fee) |           |
| <u>Total Expenses:</u>     | \$8316.98 |

**2013 Net Gain/Loss:** -\$3547.12

### **Bank details as of March 5, 2014**

|                |             |
|----------------|-------------|
| Bank Accounts: | \$16,066.63 |
| CDs:           | \$23,154.08 |
| <u>Total:</u>  | \$39,220.71 |

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*The BCASA Newsletter is published four times during the academic year and is emailed to current BCASA members. Send comments or suggestions to any of the individuals listed below.*

| <b>BCASA OFFICERS</b>                       |  |
|---|--|
| President, 2013-14                          | Tom Lane, The MathWorks                    |
| Program Chair, 2013-14                      | John McKenzie, Babson College              |
| Program Vice-Chair, 2013-14                 | Robert Goldman, Simmons College            |
| Vice-President, 2014-15                     | Vanessa Xanthakis, Boston University       |
| Secretary, 2014-15                          | Eugenie Coakley, John Snow, Inc.           |
| Treasurer, 2014-15                          | Lisa Mukherjee, Consultant                 |
| Council of Chapters Representative, 2013-15 | James MacDougall, Consultant               |
| Past President                              | Dominique Haughton, Bentley University     |
| Webmaster, 2013-14                          | Ching-Ti Liu, Boston University            |
| Newsletter Editor, 2013-14                  | Ming Yang, Harvard School of Public Health |
| <b>BCASA COMMITTEE CHAIRPERSON</b>          |  |
| <i>Mu Sigma Rho</i>                         | Liam O'Brien, Colby College                |