

# TEACHING of STATISTICS in the HEALTH SCIENCES

**Cynthia R. Long**

**From the Section Chair**



It's been an honor to serve as Section chair this year. The Section officers are a great group to work with and I encourage those of you interested in

leadership opportunities at ASA to consider getting involved with the TSHS Section.

JSM 2006 was a success; I hear that there was record attendance in Seattle. The TSHS-sponsored sessions were excellent and well attended. See program chair Janet Tooze's column to see who won the Best Paper awards.

The TSHS executive committee had productive meetings at JSM. There was much discussion regarding how to best serve the TSHS membership. One outcome was the establishment of a new section award (see below). We also discussed sponsoring multiple CE courses targeted at our membership needs at future JSMs. If you have ideas for courses, please contact any of the Section officers. Although CE courses have already been submitted for the JSM 2007, Scott Evans (2008 chair) will be organizing CE courses to be offered the next year. There was also discussion around supporting additional activities for TSHS members beyond those at the JSM and I expect you'll see some of these coming your way.

Thanks to Bob Oster who stepped up to fill the open position of Publications Officer. Bob has contributed to this Section through many roles over the years and we welcome him back to the executive committee. Thanks also to outgoing officers Walter Ambrosius and Lynn Ackerson. Both have contributed many

years of valuable service to the benefit of the TSHS Section.

## New Section Award Established

In an effort to attract more abstract submissions from individuals early in their careers and recognize those representing exemplary contributions to statistics education in the health sciences, the Section has established annual Young Investigator Awards. Beginning in 2007, up to 3 awards, each consisting of a plaque and \$500 cash award, will be given. Recipients will be honored at the JSM. Information regarding eligibility criteria, application materials, timeline and other details can be found in the guidelines.

Please encourage your young colleagues or students who are effective statistical educators to consider applying for the TSHS Young Investigator Award.

## Roundtable leader request!

The section plans to hold several coffee roundtables at JSM 2007. These were very successful, more consistently so than the luncheons. Additional presenter/leaders are hereby requested!

Do you have a topic on which you can lead a session? You don't need a slide show or formal presentation. Your role is to lead the discussion in an area in which you have experience and expertise.

These roundtables are good for both visibility and fundraising for the TSHS section. If you have an idea, contact Jodi Lapidus at either (503) 494-1167 or by e-mail at [lapidusj@ohsu.edu](mailto:lapidusj@ohsu.edu).

## BOOK REVIEW



**Review by Daniel W. Byrne, Department of Biostatistics, Vanderbilt University Medical Center. (Pictured)**

**Title:** "Study Design and Statistical Analysis - A Practical Guide for Clinicians."

**Author:** Mitchell H. Katz.

**Publisher:** Cambridge University Press.

**Year of Publication:** 2006.

**Number of Pages:** 188 pages + xii.

First edition; ISBN 0-521-82675-6 (\$95.00, hardcover); ISBN 0-521-53407-0 (\$39.99, paperback).

[www.cambridge.org/catalogue/catalogue.asp?isbn=0521826756](http://www.cambridge.org/catalogue/catalogue.asp?isbn=0521826756)

Mitchell Katz's new book "Study Design and Statistical Analysis" is intended to be an overview for clinicians; however, those who teach statistics in the health sciences may find it useful for workshops and short courses on this topic. Although this book would probably not be suitable for a graduate-level course in biostatistics, it would be appropriate for our clinical colleagues who are looking for a practical statistical guidebook.

Mitchell Katz, Clinical Professor of Medicine, Epidemiology, and Biostatistics at UCSF, and Director of the San Francisco Department of Public Health, is also the author of the book "Multivariable Analysis", which uses the same subtitle (and is referenced at least a dozen times). In many ways, this new book can be considered Part I and "Multivariable Analysis," Part II.

"Study Design and Statistical Analysis" is divided into 12 chapters, which lead the reader through the research process from designing a study, data management, analysis, sample size, to publishing a paper. The table of contents is a list of questions, such as: "How many subjects will I need for my

study? How will I enter my data? How do I write my study up for publication?" While this is a reasonable presentation, a clear description of the steps of the scientific method would help the reader understand the logic of this process.

Most pages include a diagram, simple table, or a small box with a tip or definition. These do improve the readability of the material and are often excellent modern examples, which instructors could use to communicate these concepts in a classroom. Some of the tips in shaded boxes are a bit too simplistic: "Tip – The percentage is the proportion multiplied by 100."

Although experienced professional statisticians may be bothered by lack of detail and the oversimplifications, Katz is skillful at communicating this subject and he includes a good deal of useful advice. Obviously, his interactions with students in the classroom have helped him learn what they need to know, and also what works in teaching this information.

Ideally, physician-scientists should have rigorous training in study design and statistical analysis; however, since most do not, there is a need for this type of book. Professional biostatisticians may find it useful to recommend this book to the clinicians whom they collaborate with so that they can at least speak a common language. This book will not eliminate the need to consult with a statistician. It will make the consulting process much more efficient.

This book has several weak points (or a least points that the author might consider strengthening in a second edition). Some of the more modern and stronger statistical approaches are not emphasized and since these would often require the help of a biostatistician, readers would benefit from clear guidance on when to consult with a biostatistician. Many biostatisticians would disagree with some of Katz's advice, such as "...it is best to avoid matching," "It is best to have your data double entered by two different data entry operators,"<sup>1</sup> "Survival analysis cannot incorporate matched observation."<sup>2</sup> and "...you lose about 10% of power if you analyze a parametric variable using a nonparametric statistic." Some argue that the loss is closer to 4%. Readers (especially clinicians) should be encouraged to use nonparametric methods as the first tool of choice. There are several minor errors: "Geham's test" rather than "Gehan" (p106), the description of a continuity correction (p133-134) is wrong.

In summary, this book is full of excellent practical advice, which most experienced biostatisticians have learned over many years but get tired of repeating to new fellows and junior investigators. I would recommend this book to anyone who teaches statistics in the health sciences. They will find it most useful.

References:

1. Day S, Fayers P, Harvey D. Double data entry: what value, what price? *Control Clin Trials*. 1998 Feb;19(1):15-24.
2. Fleming TR, Lin DY. Survival analysis in clinical trials: past developments and future directions. *Biometrics*. 2000 Dec;56(4):971-83.

## FROM THE PUBLICATIONS OFFICER

**Bob Oster**  
Fall 2006 Update



### New and outgoing publications officers:

During the 2006 JSM, the TSHS Executive Committee appointed me as the new section Publications Officer. I am completing the two-year term of Renee Stolove, who resigned from the position due to other numerous responsibilities, including that of being enrolled in a Ph.D. program. I would again like to thank Renee for a job well done during her two and a half years in the position, and wish her well in all of her future endeavors. I will do the best that I can in fulfilling the responsibilities of this position.

Many of you may remember me from previous positions that I have held in TSHS. I will not go into detail on those here, but my experience in those positions has certainly prepared me to fulfill the responsibilities of TSHS Publications Officer. I look forward to serving in this role.

### The publication officer's job:

The most recent version of our section charter (approved in 2005) details the responsibilities of the Publications Officer. In a nutshell, my job is to coordinate activities within TSHS related to publications sponsored by the section. Therefore, I will be responsible for ensuring that we have columns in *Amstat News* describing our section activities and award winners, for writing columns for

this newsletter, for overseeing our section website ([www.bio.ri.ccf.org/ASA\\_TSHS](http://www.bio.ri.ccf.org/ASA_TSHS)), for actively participating in discussions with the rest of the TSHS Executive Committee, and for actively participating in discussions with Publications Officers from other ASA sections.

### Today's topic: the web site

In this column, I would like to call your attention to our section website. Keeping the website up to date is critical for us since this has become the location where folks go to find out information about us and to download our newsletter.

Certain links on the website will be kept up to date by the section leadership. For example, our newsletter editor will make sure that all issues of the newsletter get posted on the website, and our Chair will make sure that section reports (e.g. executive committee meeting minutes and business meeting minutes) get posted.

However, we are open to any and all suggestions for updating and improving the website. These suggestions should be e-mailed directly to me, and I will make sure to get the appropriate information to the rest of the Executive Committee. For example, if you would like to see additional links to other websites, or if you find any broken or outdated links, please let me know. If there is any additional material that you would like us to post on the website, please let me know that as well.

## Highlights of JSM 2006

Janet Tooze



JSM 2006 was a successful meeting for TSHS! The TSHS section sponsored two sessions, one invited and one contributed, as well as co-sponsoring seven other sessions. We had a great turnout for both the invited and contributed sessions, with over 70 attendees in each session, and reached the maximum room capacity for the contributed session. We also sponsored two coffee roundtables, new to JSM this year, and had a very good turnout for these as well. Thanks to Cyndy Long and Dongseok Choi for chairing the sessions.

The winners of the awards for the best paper for the two sessions are:

### Invited Session – Best Paper Award

**Jodi Lapidus, Oregon Health & Science University**

*“Effective Teaching of Applied Biostatistics for Clinicians Enrolled in a Research Training Program”*

– and –

### Contributed Session – Best Paper Award

**John McGready, Johns Hopkins University**

*“Basic Biostats: Online Learning versus Onsite Learning”*

**Congratulations!**

## Invited Session Speakers

We had 4 fine invited session participants, including our award winner, Jodi Lapidus, on the right. The others are Edward Ip, Ralph O’Brien, and Stephen Looney, from left to right. Thanks to all of them!



## Young Investigator Award

### Purpose

The Section on Teaching Statistics in the Health Sciences (TSHS) gives annual Young Investigator Awards in recognition of an individual's contribution to statistics education in the health sciences.

Papers submitted should be related to the use of effective methods in statistics education in the health sciences. Papers on teaching in courses, consulting settings or mentoring sessions are eligible. Review criteria will include the organization and clarity of the paper, the use of innovative or creative methods to effectively teach statistical concepts and methods, and the potential utility by others teaching statistics in the health sciences.

### Applicant Eligibility Criteria

1. A "Young Investigator" defined as
  - received terminal degree no more than 5 years ago AND in position with rank below Associate Professor AND does not hold tenure (or equivalent classification)  
OR
  - current graduate student
2. First author of abstract submitted to the TSHS Section for the JSM 2007

### Application Materials for Young Investigator Award

- Cover letter certifying that applicant meets eligibility criteria and gives title and author(s) of abstract submitted to JSM
- Copy of abstract (include title, but not author(s))
- Philosophy of teaching (no more than 1 single-spaced page; do not include applicant's name)
- Copy of paper (4-8 single-spaced pages; include title, but not author(s))

### young Investigator Award Committee

Three TSHS Officers: Past-chair (chair of award committee), Chair, Chair-elect. In 2007 this will be Cyndy Long, Marlene Egger, and Scott Evans, respectively.

### Awards

- Up to 3 awards annually
- Plaque and cash (\$500) award

### Timeline

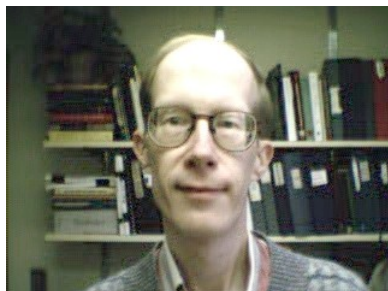
- April 1: e-mailed application due to Award Committee Chair ([cyndy.long@palmer.edu](mailto:cyndy.long@palmer.edu))
- April: Review of applications; award decisions made
- May 1: Recipients of award contacted and names submitted for inclusion in JSM Awards Program Booklet
- JSM: Recipients honored at TSHS business meeting and mixer

### Section Officers and Officers-Elect for TSHS

Chair	Cyndy Long	(563) 884-5157	<a href="mailto:LONG_C@palmer.edu">LONG_C@palmer.edu</a>
Chair-Elect 2006	Marlene Egger	(801) 587-3335	<a href="mailto:MEGGER@DFPM.UTAH.EDU">MEGGER@DFPM.UTAH.EDU</a>
Chair Elect 2007	Scott Evans	(617) 432-2998	<a href="mailto:evans@sdac.harvard.edu">evans@sdac.harvard.edu</a>
Past Chair	Walter Ambrosius	(336) 716-6281	<a href="mailto:wambrosi@wfubmc.edu">wambrosi@wfubmc.edu</a>
2006 Program Chair	Janet Tooze	(336) 716-3833	<a href="mailto:jtooze@wfubmc.edu">jtooze@wfubmc.edu</a>
2007 Program Chair	Patrick Tarwater	(915) 747-8277	<a href="mailto:Patrick.M.Tarwater@uth.tmc.edu">Patrick.M.Tarwater@uth.tmc.edu</a>
2008 Program Chair	Jodi Lapidus	(503) 494-1167	<a href="mailto:lapidusj@ohsu.edu">lapidusj@ohsu.edu</a>
2006 ENAR Pgm Chair	Todd Nick	(513) 636.0462	<a href="mailto:todd.nick@cchmc.org">todd.nick@cchmc.org</a>
Secretary-Treasurer	Gloria Caldito	(318) 675-6803	<a href="mailto:GCaldi@lsuhsc.edu">GCaldi@lsuhsc.edu</a>
Publications Officer	Bob Oster	(205) 934-3679	<a href="mailto:Robert.Oster@ccc.uab.edu">Robert.Oster@ccc.uab.edu</a>
Council of Sections Rep.	Lynn Ackerson	(510) 891-3556	<a href="mailto:lma@dor.kaiser.org">lma@dor.kaiser.org</a>
Council of Sections '07	Janine Janosky	(412) 383-1000	<a href="mailto:jej@pitt.edu">jej@pitt.edu</a>
Newsletter Editor	Ed Gracely	(215) 991-8466	<a href="mailto:egracely@drexelmed.edu">egracely@drexelmed.edu</a>
Book Review Editor	Daniel Byrne	(615) 322-4228	<a href="mailto:daniel.byrne@vanderbilt.edu">daniel.byrne@vanderbilt.edu</a>
ASA Staff Liaison	Monica Clark	(703) 684-1221	<a href="mailto:monica@amstat.org">monica@amstat.org</a>

American Statistical Association  
 TSHS Newsletter  
 Ed J. Gracely, Ph.D. Editor  
 Family, Community, and Preventive Medicine  
 Drexel College of Medicine  
 2900 Queen Lane  
 Philadelphia, PA 19129  
 215-991-8466 (phone)  
 215-843-6028 (fax)  
[egracely@drexelmed.edu](mailto:egracely@drexelmed.edu)

### FROM THE EDITOR



Start thinking now about winning an award next year at JSM. No, it won't let you retire early, but it's a nice feather in your cap!

Let any young investigators of your acquaintance know about the Young Investigator Award as well. A great way to introduce young statisticians to the work of the Section.

Enjoy this issue.

As always, if you have something to contribute, send it along!

*Ed*