

TEACHING of STATISTICS in the HEALTH SCIENCES

Patrick Arbogast

From the Section Chair



Newsletter Highlights

- Chair's Column (below)
- [Publications Officer column](#) p 2
- [Book review](#) p 4
- [TSHS Officers list](#) p 6

Greetings and salutations! I hope that all of you are having a safe and happy holiday season. This is coming later than in the past, but I cannot think of a better way to wrap up the year and the first decade of the 21st century than with a TSHS newsletter.

First off, I want to express my heartfelt gratitude to everyone who participated in this year's TSHS program at JSM in Washington, DC. Carol Bigelow organized an outstanding program including two invited sessions: one on translational research, and one on distance teaching in practice which included a live lecture from France. Mary Gray organized a successful coffee roundtable. I was absolutely delighted that all of our sessions were very well attended and very well received.

Mary Gray (2010 TSHS Program Chair) has organized a very interesting invited session for JSM 2010 in Vancouver, BC involving teaching to diversity. I strongly encourage everyone to put this session on their radar.

I want to express my heartfelt gratitude to everyone who participated in this year's TSHS program at JSM in Washington, DC. ... I am absolutely delighted and wish to welcome Jodi Lapidus as our 2010 TSHS Section Chair.

This year as your TSHS Chair would not have been the same without the outstanding TSHS leadership. I wish to thank Scott Evans (2008 Chair) and Bob Oster (Publications Officer) for their guidance, Carol Bigelow (2009 Program Chair) for all of her work for the 2009 JSM, Lynn Ackerson (Secretary/Treasurer) for keeping us organized, Mary Gray (2010 Program Chair) for our future program, and Bob Oster (Publications Officer) for his consistent dedication to our section. Lastly, I would be remiss not to thank Ed Gracely, our outstanding Newsletter Editor without whom our Section would not exist and the world would be plunged into eternal darkness and chaos.

I am absolutely delighted and wish to welcome Jodi Lapidus as our 2010 TSHS Section Chair. We will be in great hands with her leadership, plus she makes a mean clam dip. I also wish to welcome Constantine Daskalakis as our new Secretary/Treasurer, Cyndy Long as our new Section's Council of Sections Representative, and Robert Greevy as our new Book Review Editor. I look forward to seeing you in Vancouver for JSM 2010.

FROM THE PUBLICATIONS OFFICER

Robert A. Oster, Ph.D., University of Alabama at Birmingham

[Back to list](#)



The 2009 JSM was informative and also a lot of fun. I enjoyed seeing several of you there. I believe that TSHS made its presence known. The TSHS-sponsored sessions, posters, and coffee roundtables were first-rate. Attendance at the TSHS sessions was great – our sessions were standing room only. Several JSM participants who were not members of TSHS asked me a number of questions about TSHS. I was pleased at the level of interest in our section in general and in our section's activities in particular.

During our Executive Committee meeting, I was re-appointed as the section Publications Officer. This appointment is for a two-year term, so I will be serving as your Publications Officer through the end of 2011. I will do the best that I can in fulfilling the responsibilities of this position. This will be my third (and most likely my final) term in the position, so I will begin to look for a potential successor sometime next year.

Regarding section publications, we did have an article published in the July issue of *Amstat News*. This article, written by Cyndy Long, was about yours truly and focused on my being named as the recipient of this year's TSHS Distinguished Achievement Award. We received positive feedback on having the winner of this award featured in a standalone article, so we will likely take this approach to honor the next recipient of the TSHS Distinguished Achievement Award (the award will next be given in 2011).

The Executive Committee intended to have a separate article describing our 2009 JSM program published in the July issue of *Amstat News*. This article would also have honored our 2008 award winners since they had not yet been mentioned in *Amstat News*. Due to several miscommunications, the article did not get submitted on time. To hopefully make up for this, we will soon be submitting an article to *Amstat News* that will give a wrap-up of our 2009 JSM program, as well as honor our 2008 and 2009 award winners.

The Executive Committee has been working to keep the TSHS website as up to date as possible. ... Please feel free to send me ideas for content.

The Executive Committee has been working to keep the TSHS website (http://www.bio.ri.ccf.org/ASA_TSHS) as up to date as possible. A few new links and updated documents have been posted there. Please feel free to send me ideas for content that you would like to see included on the website as well as ideas for keeping the website up to date.

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By now, many of you have heard about the ASA Community (<http://communities.amstat.org>). If you have not yet checked out this new resource, please do so. The purpose of the ASA Community is to further foster member engagement and interaction with the ASA. It is possible to update and expand your biographical information and to see a complete list of all section members. The ASAGroups portion of the site is intended to replace section, chapter, and other special-interest

listservs. It is also possible for sections to upload their documents to a portion of the website that is reserved for sections.

There have been some discussions about sections voluntarily posting their documents to the ASA Community. There have been additional discussions about sections voluntarily moving their entire websites to the ASA Community. One reason for doing so is that ASA itself would then house the section websites (with each section determining what material gets posted), with the idea that each section would gain additional exposure and that the section's materials would be more readily accessible to its members. The TSHS Executive Committee will necessarily have future discussions on all of this.

I hope that all of you are enjoying the fall and that you will make preliminary plans to attend JSM 2010 in Vancouver. I am sure that the TSHS program will again be excellent.

That is all for this column. I will have another column for you in the spring 2010 issue of this newsletter!

Call for your tips and insights

Do you have a clever method you use to teach basic statistics? How about a method to make statistics more relevant to your health sciences students? Something else of interest to TSHS? Consider writing about it for the TSHS newsletter. A short (one page) description of what you do would be very welcome!

Certain types of articles appear in every issue: articles mainly about the section are the most frequent. Plus we always have a book review. But my personal favorite articles are interesting content and/or ideas about teaching. Remember Carol Bigelow's article last fall (2008) in which she described what she learned at one of the coffee tables about translational research? Or Scott Emerson's article that described the techniques he uses (and which helped him win the best contributed paper award)? I'd like more of those! If you have something to contribute... let's see it!

BOOK REVIEW

[Back to list](#)

Robert Alan Greevy, Jr, PhD
Assistant Professor of Biostatistics
Vanderbilt University School of Medicine



Title: R Through Excel: A Spreadsheet Interface for Statistics, Data Analysis, and Graphics (Use R) (Paperback)

Author: Richard M. Heiberger and Erich Neuwirth

Publisher: Springer

Year of Publication: 2009

Number of Pages: 343

ISBN-10: 1441900519

ISBN-13: 978-1441900517

Price: \$64.95 (USA list price)

My initial reaction to the title *R Through Excel* was pure opposition. The words “data collected and maintained in Microsoft Excel” give me flashbacks of spreadsheets structured to be unreadable by any statistical software, gender variables with eight different levels (“male”, “Male”, “m”, 1, ...), and a handful of accidental changes to the data that no one is even aware of. This is not to say I hate Excel. I think Excel and its equivalent in OpenOffice are excellent spreadsheet programs; good for the tasks for which spreadsheets are meant. But I balk at the thought of teaching my students to use Excel. There are better tools for data management and statistical analysis. I get the sense the authors anticipated my opposition by their choice of opening quote. Brian D. Ripley is quoted from the 2002 opening lecture of the Royal Statistical Society as saying, “Let’s not kid ourselves: The most widely used piece of software for statistics is Excel.” Indeed, though I do not teach it, all of my students come in already using Excel, and I suspect they leave continuing to use it. Very few come in already using R, and I fear many leave never using it again. While the idealist in me rebels

The book *R Through Excel* is a detailed, step-by-step guide to using the add on packages RExcel and Rcmdr (R commander). ... If you find yourself in favor of using these applications and the RExcel package, *R Through Excel* is a useful supplementary text that will teach how to use the RExcel package.

against welcoming Excel into my classroom, the pragmatist in me is excited about potentially making more lifelong R users through the package RExcel.

The book *R Through Excel* is a detailed, step-by-step guide to using the add on packages RExcel and Rcmdr (R commander). R commander adds a graphical user interface (GUI) to R. RExcel allows point and click transfer of data from Excel to R and from R to Excel, and it integrates all commands available in the customizable R commander menus into an Excel add on menu. It also allows use of R functions directly in Excel cell formulas. RExcel supports Excel 2002, 2003, and 2007 running on MS Windows. While the book focuses on Excel 2007 run in its native Microsoft platform, it also instructs readers on how to separately install R commander, which works on several platforms, and directs them to ROOo, R for OpenOffice, which has a beta version currently available. Appendix A in the text guides users through sufficiently detailed installation instructions, with one set for those who have never installed R and one set for current R users. The first three chapters are devoted to the

absolute basics: running RExcel within Excel, running R commander without Excel, how to use these packages, and getting data into and out of R. The detailed, screenshot driven instructions here are useful in helping students through the initial learning phase of using these programs. I have found the frustration during this beginning phase of learning to use R is what turns off many students from R for life. In this area, *R Through Excel* could be of great help. The remaining ten chapters focus on topics that an introductory statistics course is likely to cover: graphical summaries of data, the normal and t distributions, t-tests, ANOVA, simple linear regression, multiple regression, diagnostic plots, polynomial regression, and contingency tables. For the most part, the book focuses on how to use RExcel for these methods with the screenshot driven, detailed instructions seen in the first three chapters. A section will provide a brief summary of a method and then focus on its implementation.

This is appropriate for the book's stated goal of being a supplementary text to an introductory statistics course. I would have liked the text to have a section on the dangers of data management in Excel and steps to mitigate those dangers. Admittedly, I suspect discussions of data management are completely absent from most introductory statistics courses.

Naturally, your interest in using *R Through Excel* as a supplementary text for your class will depend heavily on your take regarding using R and Excel in your course. If you find yourself in favor of these applications and the RExcel package, *R Through Excel* is a useful supplementary text that will teach how to use the RExcel package. For more information on the RExcel package, see <http://rcom.univie.ac.at/>. The RExcel package is free, as is R.

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[Back to list](#)

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**FROM THE EDITOR**

Well, I'm not sure I endorse Patrick's comment about my work with the newsletter, "...Newsletter Editor without whom our Section would not exist and the world would be plunged into eternal darkness and chaos", but it's nice to be recognized! Thanks, Patrick... Please do send me your ideas, articles, tips, and so on. Wouldn't want the world to be plunged into chaos, now, would we? :-)

Ed

American Statistical Association

<http://www.amstat.org/>

Section on Teaching Statistics in the Health Sciences

Section web page: http://www.bio.ri.ccf.org/ASA_TSHS/html/index.html

Links to all newsletters: http://www.bio.ri.ccf.org/ASA_TSHS/html/newsletter.htm