

THE STATISTICAL CONSULTANT

Section on Statistical Consulting
Murray K. Clayton, Editor
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American Statistical Association

Announcement of Travel Award Competition

The Section on Statistical Consulting is soliciting ideas for Special Contributed Paper Sessions for the 1998 Joint Statistical Meetings to be held in Dallas, Texas, August 9–13, 1998. A \$500 travel award will be given for the winning proposal. The proposer will be responsible for organizing the session and lining up the speakers and abstracts in the Fall of 1997.

To submit a proposal, prepare a short (not more than one page) description of the Special Contributed Session. This should include a description of the theme of the session, the types of papers or discussions to be included, and the intended audience.

Proposal submission deadline: September 1, 1997.

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Statistical Consulting at a Contract Research Organization

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There is a growing trend for many statistical consulting jobs to be offered via contract research organizations (CROs), especially in the pharmaceutical industry. As reported by the Wall Street Journal, October 8, 1996, “Pharmaceutical giants increasingly are turning to outside contractors to speed the late stages of clinical development — and provide added clout for the marketing blitz immediately following the launch of a new drug Keeping a sufficient full-time staff to cope with peak periods before and after a major launch is simply too expensive even for the biggest companies in an era of slowing growth and intense price pressure, [according to] industry analysts . . .” CRO employment can provide intensive and varied work experience for the statistician beginning a career, as well as, for the experienced statistician, a chance for quicker advancement into upper management levels than the traditional corporate career track.

The major pharmaceutical companies want to concentrate on drug development activities. Their patents on high profit “milk cow” drugs are running out and replacements are needed, either new drugs or new combinations of current products. At the same time, research and technical personnel have been reduced in numbers due to mergers and downsizing. Hence the effort to contract out as much of the report and regulatory phase as possible. CROs have responded with a full service menu of activities that span just about anything that has traditionally been part of the complex process leading to New Drug Application (NDA) presentation to the FDA.

Some of the services offered by CROs and CRO statisticians include: clinical trial design and protocol development, data validation/management, programming (database, SAS, S-Plus, etc.), project management,

quality assurance/control, statistical analyses, statistical tables validation, pharmacokinetic/pharmacodynamic modeling, New Drug Application (NDA) preparation, FDA strategy and client representation, and manuscript preparation. As CROs seek to diversify their offerings, new areas of growth are pharmacoeconomics, pharmacoepidemiology studies, and Rx to OTC (prescription to over-the-counter) switch. Integrated Summary Reports may require global database creation and meta-analysis techniques. Pharmaceutical marketing programs are supported through such methods as cost-effectiveness analysis and outcomes research. CROs can offer services worldwide through branch offices and strategic alliances with international affiliates.

CROs like Quintiles, Clintrials, PPD and PAREXEL take projects from client companies and then hire biostatisticians and SAS programmers to work at the CRO site on those projects, under supervision by CRO management personnel. Professional services organizations such as Trilogy Consulting Corporation and ASG, Inc. place the statistician/SAS programmer either on- or off-site according to client preference. In this situation, the consultant/contractor takes direction from a statistician supervisor who is a employee of the client pharmaceutical company. Sometimes it is possible to work from a home office, usually after several years experience has been obtained at client or CRO locations. The statistical contractor’s analytical and programming skills are vital in any of these venues, but communication and people skills will also be of great value since the CRO contractor works as part of a team of both CRO and company personnel dedicated to the success of the pharmaceutical company project.

Why Work at a CRO?

The CRO environment is fast paced and offers the novice statistician/programmer the oppor-

tunity for acquiring pharmaceutical experience in different therapeutic areas. It has been said that one year of experience at a CRO is equivalent to seven years in a regular company. A contractor who shows talent, motivation, and productivity in this arena will have a strong basis to continue a consulting career in either CRO or company employment.

CRO contract work can be more flexible in format and scheduling than work at the corporate office. Some CROs offer flextime, e.g. core office hours from 9-3, and other family-friendly policies. Often the contractor is not required to attend the project meetings and can avoid corporate politics to a great extent. For those who prefer a technical career track, CROs may provide greater advancement potential than the traditional corporation, since technical services are more the focus of the CRO.

Who are CRO Workers?

CROs offer opportunities to a diverse group of potential employees. The fresh graduate with only academic background may receive relatively low pay but gain invaluable pharmaceutical experience. The person with statistical/programming skills whose academic degree is in a non-statistical discipline, or whose area of expertise is in a non-pharmaceutical application field, can be validated through a CRO job.

Middle managers who foresee an uncertain future at the traditional corporation in an era of downsizing and rightsizing may choose the CRO for higher salary and better promotion potential. Women and minorities discouraged by the “glass ceiling” limitations at many corporations may be able to follow their ambitions to a higher level at the CRO, becoming CEO or President, or perhaps even founding their own contract services venture. Some CROs are operated by a husband-wife, or brother-sister team, or as another type of family business structure. Such a family atmosphere may appeal to workers who are find-

ing the environment at regular companies not as pleasant as in the past. In fact, the large pharmaceutical company is run “more like a CRO” nowadays, with technical tasks frequently outsourced now, and employees often effectively treated as contractors. For example, in some companies employees are required to bill within the company for services rendered. The “family atmosphere” formerly found at the large corporation has evaporated with layoffs and forced early retirement of middle-aged workers.

Globalization is an important trend in the modern pharmaceutical industry, with U.S. companies wishing to gain regulatory approval for sale of their products in other countries. Since regulations differ internationally, once a drug has been approved in Europe, it may still require a new drug application to be marketed in the U.S. CROs with offices abroad are well-positioned to further the global aspirations of the major pharmaceutical players.

Academic Degrees in CRO Consulting

The flat management structure of the typical CRO does not call for a great supply of Ph.D. personnel. Even though the U.S. corporation is aiming for flat structure, there are still more management levels than at a CRO. With the small proportion of Ph.D. CRO management jobs available, a Ph.D. may take many years to pay off. However, Ph.D.s may be valued for making a good presentation to clients. Commonly, a CRO sends a team of department heads along with M.D.s and Ph.D.s to meet with a pharmaceutical client when bidding for a project. Ph.D.s may also serve as liaisons between a pharmaceutical company and the FDA regulatory agency.

Ph.D.s on a project reassure the client that design and planning will be competently performed. However, implementation of most project tasks can be performed by personnel with lower academic credentials and even non-statistics degrees. There are not many B.S. degrees awarded in statistics, so CROs may

have organizational and programming tasks assigned to contractors with degrees in psychology, biology, mathematics, or education. Both B.S. and M.S. personnel may be used as SAS (or other) programmers. The M.S. statistician may find a brighter future in CRO than at a corporation, enjoying more visibility and the possibility of project management in 3-4 years rather than perhaps 8-10 years at the corporation.

The CRO Statistician On-Site, Off-Site, or at a Home Office: Pluses and Minuses

Working on site (at the client's location) gives the consultant opportunity to make contacts with client personnel even if not in a high job category at the CRO. These contacts can be valuable subsequently in obtaining future assignments, or possibly in going "temp-to-perm" (being hired by the client firm after a stint as a contractor). The client location facilitates teamwork with company personnel and other onsite contractors. Client equipment and supplies are available for all work tasks. The contractor may be paid for hours attended even if no specific product is obtained. On the negative side, the contractor may be under close scrutiny by the client supervisor, perhaps feeling pressure to "keep typing." There may be little training or professional educational opportunities other than on-the-job learning. There may be no way to advance within the contractor job description. Sometimes the contractor's office assignment is substandard in terms of computer equipment quality or office furniture ergonomics.

Working at the CRO site, the consultant has equipment and supplies provided. Benefits may include flextime scheduling, casual dress, and perhaps some telecommuting. Camaraderie is enjoyed with other contractor personnel and workers are generally paid for time attended. A disadvantage may be less opportunity to network with client personnel and the CRO site may suffer from a "factory" at-

mosphere. Equipment and office furniture may be substandard; ergonomics poor.

Working at home can offer the advantages of fewer distractions, with no need to participate in office meetings, politics, or socializing. The home office location saves on commuting time and effort, and the consultant can work even in weather "emergencies" or with a minor illness. If this matches your work personality, you may be happier and more productive. Older workers may avoid age discrimination: productivity is all that counts, not appearances. The worker with young children may find improved ability to give quality time to both job and family. The home worker can keep up professional activities and continuing education. The pharmaceutical supervisor may be influenced to give more well-defined assignments. Communication by phone and email can result in better defined protocols and analyses than casual verbal exchange at the office.

Often home workers must supply their own equipment and supplies. They must facilitate communications with client personnel, which can be difficult if clients are not cooperative. Some client personnel regard communications tasks such as faxing as "clerical," and clerical assistance is not always available. Sometimes output must be printed at the client site; this can be difficult to accomplish from a remote site. Those who work at home can only charge for time which produced concrete product such as tables or listings. Moreover, remote workers might miss out on office "chat," and may feel isolated from their project team. Success of working at home is greatly dependent on the personality and attitudes of both the consultant and the pharmaceutical statistician supervisor.

The Contractor: Salaried Employee or Hourly Worker?

CROs commonly require their employees to work on a full-time salaried basis, providing benefits such as paid vacation and holidays as

well as sick leave, health insurance, and 401(k) retirement savings plan, usually at a somewhat reduced level compared to typical corporate employee benefits. However, the consultant must keep track of exact hours worked each day. A time sheet is submitted at the end of the week for the client's signature, and then turned in to the CRO office. Pay is then based on hours worked. Thus the contractor is effectively an hourly worker from the client standpoint, but a salaried worker with benefits in the view of the IRS. The point of this setup is to protect the client from losing tax-preferred status for their benefit programs, and to protect the IRS from potential loss of tax revenue since the CRO agency takes care of withholding income taxes from their employees. However, it is an expensive arrangement for the consultant, as the CRO often may keep up to 50 percent of revenue for each hour worked. Thus, consultants with several years "contracting" experience under their belt may choose to switch to "independent contractor" status, perhaps even becoming incorporated, and in effect become a small business owner whose product is their consulting skills.

The Future of Statistical Consulting: Jobs on the Internet

To find more about CRO Consulting, check out the Internet Web Pages for various CROs. Information about each company, client services, and job openings are typically described. Job fairs are also hosted by CROs at their offices or local hotels; these are advertised in the Classified Jobs Section of the local newspaper. Keep your electronic resume posted on the Web. At the same time, keep up your network of contacts with professional colleagues, friends, and family. This combination of strategies is the key to building a career in statistical consulting for the near future.

Note: The Statistical Consulting Section of the ASA is sponsoring an Invited Session, "Contract Research Consulting: Opportunities

for Statisticians" at the 1997 JSM, Anaheim, Wednesday, August 13, from 8:30 a.m. – 10:20 a.m.

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Activities at the 1997 Joint Statistical Meetings

Mixer and Business Meeting

At this year's annual meeting in Anaheim, the Consulting Section is sponsoring a mixer to immediately follow the business meeting. All members and prospective members are welcome at both the business meeting and the mixer. These activities will take place on Tuesday, August 12, from 6:00 p.m. to 7:30 p.m. in the Redondo Room.

Last year's mixer was very successful, giving us all a chance to meet other members of the section. We especially welcome the applied statisticians within ASA who are looking for a section that fits their particular needs. Please join us for food and drink and to meet fellow consultants and applied statisticians with similar interests. See you in Anaheim!

Consultants' Forum

The 1997 Consultants' Forum at the Joint Statistical Meetings will be a panel discussion on various practical aspects of survival analysis. The panelists are:

- Tim Morgan, Bowman Gray Medical School — introduction and examples
- Butch Tsiatis, NCSU and HSPH — sample size determinations
- Terry Therneau, Mayo Clinic — residuals for survival analysis.

We would like this to be useful to practitioners. We encourage you to send questions, comments, helpful hints, and other discussion on the topic of survival analysis to the Consulting Section electronic discussion group.

To subscribe to the electronic discussion group send mail to: `majordomo@stat.lsu.edu`, and in the body of the message (subject is ignored) put the command `subscribe asacnslt yournamehere <youreemailaddresshere>`. Substitute your

own name for "yournamehere." After subscribing, you can send mail to the list by mailing to: `asacnslt@stat.lsu.edu`.

See the program below for scheduling information about this forum.

The 1997 JSM Program

On the next several pages you will find listings of the sessions sponsored or co-sponsored by the ASA Section on Statistical Consulting. For most of the invited paper sessions, an abstract of the session has been included with the hope that it will be useful to you as you plan your meeting activities.

Please take special notice of the following four papers. These papers were originally slated to be included in a special contributed paper session proposed by Parni Dasu, who won a travel award from our Section for proposing the session. Due to complexities in setting up the program, these papers were ultimately split up into four different sessions, each co-sponsored by our Section. The sessions, times, and papers, are:

- Developments in Spatial Data Analysis Monday, August 11, 11:15. Another look at binning and graphics for multivariate satellite data. Daniel B. Carr, George Mason U, Anthony R. Olsen, US EPA, Jean-Yves P. Courbois, Oregon State U
- Dealing with Multivariate Responses for Quality Improvement Tuesday, August 12, 10:50. Simultaneous secondary limit cumulative sum charts with applications to monitoring surgical outcomes. Stefan H. Steiner, Richard Cook, U of Waterloo, Vern Farewell, U College

- Understanding Multivariate Data Tuesday, August 12, 8:50. Exploring multivariate data using minimum spanning trees and other graphs. Anthony Robinson, U of Bath
- Smoothing Splines, and Applications to

Biometry Monday, August 11, 2:05. Approximate smoothing spline methods for large data sets in the binary setting. Dong Xiang, SAS Institute, Grace Wahba, Ronald Klein, Barbara Klein, U of Wisconsin–Madison

Presentations Sponsored or Co-Sponsored by the Statistical Consulting Section

You can also find the following sponsored section by visiting the JSM program web address: <http://www.amstat.org/meetings/jsm/1997/program/> and clicking on CNSL as the sponsor.

Tutorial: DATA MINING

Sunday, August 10, 2:00 p.m. – 3:50 p.m.

Organizer: Daryl Pregibon

Chair: James L. Rosenberger

(2:05) Rana S. Fayyad, Parke-Davis, Daryl Pregibon, AT&T Bell Laboratories

(3:40) Floor Discussion

Invited Papers: ISSUES IN APPLYING GEE METHODOLOGY TO CONSULTING QUESTIONS

Sunday, August 10, 4:00 p.m. – 5:50 p.m.

Organizers: John M. Williamson and James J. Grady

Chair: John M. Williamson

Abstract: Statistical analyses involving the use of general estimating equation (GEE) methodology are becoming increasingly popular as applied statisticians realize their potential applications and software becomes more user-friendly. In a consulting setting, employing statistical approaches involving GEE methodology is complicated by (non-statistician) researchers and journal referees who are not aware of these new methods. Statisticians must find ways to incorporate these methods, and at the same time, educate non-statisticians of their potential uses. Presenters will share their successes and failures in these areas or compare traditional methods to GEE methods.

(4:05) Goodnes-of-fit tests for GEE modeling. Huiman X. Barnhard, Emory School of Public Health, John M. Williamson, CDC

(4:25) GEE methods in overdispersed prospective coital data. Emelita De Leon-Wong, Pai-lien Chen, Cynthia Visness, Linda Potter, and Deborah Oakley, Family Health International.

(4:45) Methods for longitudinal data with binary outcomes in psychology: weighted least squares and the generalized estimating equation approach.

James J. Grady, U of Texas Medical Branch, John M. Williamson, CDC

(5:05) Methods for analysis of paired continuous data with missing values.

Terry A. Cox, U of North Carolina, Paul W. Stewart, U of North Carolina

(5:25) Discussant: Stuart Lipsitz, Harvard School of Public health

(5:35) Floor Discussion

Invited Papers: THE PRACTICE OF CONSULTING

Monday, August 11, 10:30 a.m. – 12:20 p.m.

Organizer: Deborah Babcock Buck

Chair: Dennis W. King

Abstract: This session is a collection of presentations given by well-established, successful consultants on the practical aspects of a consulting business. The papers will focus on those factors that are required for a successful consulting practice and on the skills, traits, and other factors that should be considered by those contemplating the possibility of a career as a consultant. Opportunity will be given for the audience to interact with the speakers during a panel discussion.

(10:35) Becoming a consultant.

Kirk Paul Lafler, Software Intelligence Corp

(10:55) The business of consulting.

Eric Brinsfield, Meridian Software Inc.

(11:15) The challenges are the opportunities.

Arthur Carpenter, CA Occidental Consultants

(11:35) Discussant: Deborah Babcock Buck, D. B. & P. Associates

(11:50) Floor Discussion

Contributed Papers: DEVELOPMENTS IN SPATIAL DATA ANALYSIS

Monday, August 11, 10:30 a.m. – 12:20 p.m.

Organizer: Dianne H. Cook

Chair: Jean-Yves P. Courbois

(10:35) A tour of spatial data analysis methodologies.

James G. Wendelberger, Urban Science Applications

(10:55) Spatial distribution, correlations, and projections of the labor force in metropolitan Mexico City, 1990.

James B. Pick, U of Redlands, Edgar W. Butler, U of California

(11:15) Another look at binning and graphics for multivariate satellite data.

Daniel B. Carr, George Mason U, Anthony R. Olsen, US EPA, Jean-Yves P. Courbois, Oregon State U

(11:35) A regression model for longitudinal, multivariate vectors of continuous responses.

Sterling C. Hilton, Brigham Young U, Scott Zeger, John Hopkins School of Public Health

(11:55) Estimation of multidimensional nonstationary spectral density functions.

Li Chao, U of Huston Victoria

(12:15) Floor Discussion

Special Contributed Session: PRACTICAL INFERENCES FOR DECISION MAKING IN INDUSTRIAL APPLICATIONS

Monday, August 11, 2:00 p.m. – 3:50 p.m.

Organizer: Ramanan Gopalan

Chair: Ramanan Gopalan

(2:05) Designing experiments for the one way random effects model.

Manoj K. Sharma, Lifescan

(2:25) Using statistical models to predict customer retention at a large financial institution: methodology vs. client satisfaction.

Andrew H. Karp, Sierra Information Services

(2:45) Analysis of repeated measures categorical data to determine shelf life of an in vitro diagnostic reagent test strip.

Sarita Khanna, Johnson and Johnson, Ramanan Gopalan, Data Infoworks

(3:05) Proceeding to phase III: a Bayesian decision analysis.

Scott Berry, Texas A&M University

(3:25) Discussant: Alyson G. Wilson, CPR Inc.

(3:40) Floor Discussion

Invited Papers: STATISTICAL ETHICS, SCIENCE, AND MISCONDUCT

Monday, August 11, 2:00 p.m. – 3:50 p.m. **Organizer:** John S. Gardenier

Chair: John S. Gardenier

(2:00) Misuse of statistics in scientific inquiry.

Chamont Wei-Hong Wang, Trenton State College

(2:25) Statistical problems in biomedical research.

John C. Bailar, U of Chicago

(2:45) Is peer review technologically obsolete?

David M. Levy, Susan Feigenbaum, George Mason U

(3:05) Discussant: Yvonne M. Bishop

(3:25) Floor Discussion

Contributed Papers: SMOOTHING SPLINES, AND APPLICATIONS TO BIOMETRY

Monday, August 11, 2:00 p.m. – 3:50 p.m.

Chair: Tzu-Cheg Kao

(2:05) Approximate smoothing spline methods for large data sets in the binary setting.

Dong Xiang, SAS Institute, Grace Wahba, Ronald Klein, Barbara Klein, U of Wisconsin-Madison

(2:20) Spline smoothing for bivariate data with applications to association between hormones.

Yuedong Wang, Wensheng Guo, Morton B. Brown, U of Michigan

(2:35) Estimation of the usual intake distribution for foods.

Kevin W. Dodd, Alicia L. Carriquiry, Wayne A. Fuller, Iowa State U

(2:50) Estimating bivariate usual intake distributions.

Juan Jose Goyeneche, Alicia L. Carriquiry, Wayne A. Fuller, Iowa State U

(3:05) Nonparametric extreme quantile interval estimation by data-driven smoothing.
Cheng Cheng, Johns Hopkins U

(3:20) Measurement error modeling in nutritional epidemiology.
Victor Kipnis, DCPC National Cancer Institute

(3:35) Floor Discussion

Contributed Papers: UNDERSTANDING MULTIVARIATE DATA

Tuesday, August 12, 8:30 a.m. — 10:20 p.m.

Chair: Sunhee Kwon

(8:35) An exploratory nonparametric algorithm for the estimation of modes in multidimensional data.
Marc N. Elloitt, RAND Corp

(8:50) Exploring multivariate data using minimum spanning trees and other graphs.
Anthony Robinson, U of Bath

(9:05) Clustering under geographic constraints.
James Georges III, Jin-Whan Jung, SAS Institute, Jidith N. Jayawickrama, North Carolina State U

(9:20) Localized projection pursuit classification.
Joerg Polzehl, Informationtechnik (ZIB)

(9:35) Statistical analysis of shape of objects based on landmark data.
Shailaja Suryawanshi, Merck & Company, C. R. Rao, Pennsylvania State U

(9:50) Selection criteria for subsets of landmarks in testing for global shape.
William S. Cooper, Penn State U, Colin R. Goodall, Health Process Management, John K. Ord, Penn State U

(10:05) Floor Discussion

Special Contributed Panel: SKILLS, QUALITIES AND BEHAVIORS NEEDED TO BE A SUCCESSFUL STATISTICIAN

Tuesday, August 12, 10:30 a.m. – 12:20 p.m.

Chair: Daniel W. Thorpe

Abstract: Statisticians representing four disciplines of work (The pharmaceutical industry, public policy, industrial, and external consulting) will discuss the qualities, skills and tools they have observed that are essential in being successful in consulting. These discussions will also highlight

the skills and tools not currently being addressed by academia, who the competition is for our services and where we stand relative to them. From this, recommendations will be given and challenges raised on what the statistical community will have to do for our profession to grow into the next decade.

Panel: Dennis Jennings, Tap Holdings
John Adams, The Rand Corporation
Dan Thorpe, W. L. Gore & Associates
Mike Sutherland, U of Mass.
Joseph N. Skwish, The Dupont Co.

Contributed Papers: DEALING WITH MULTIVARIATE RESPONSES FOR QUALITY IMPROVEMENT

Tuesday, August 12, 10:30 a.m. – 12:20 p.m.

Chair: J. L. Madrigal

(10:35) A generalized distance approach to multivariate capability indices.
Steven W. Ramsier, Management Resources International.

(10:50) Simultaneous secondary limit cumulative sum charts with applications to monitoring surgical outcomes.
Stefan H. Steiner, Richard Cook, U of Waterloo, Vern Farewell, U College

(11:05) On the economic design of the multivariate control charts.
Rassoul Noorossana, Iran U of Science and Technology

(11:20) Multivariate quality control charts for the t-distribution.
Jose-Luis Guerrero, Georgetown U

(11:35) A new method for assessing the latent dimensionality structure of tests.
Jinming Zhang, Educational Testing Service

(11:50) A class of stepwise robust alternatives to Hotelling's T-square tests.
Deo Kumar Srivastava, St. Jude Children's Research Hospital

(12:05) Floor Discussion

Invited Papers: SELLING STATISTICS TO THE ENVIRONMENTAL COMMUNITY

Tuesday, August 12, 2:00 p.m. – 3:50 p.m.

Organizers: Vicki A. Lancaster, Paul K. Black
Chair: Vicki A. Lancaster

Abstract: The session is a survey of some of the statistical consulting problems in the environmental sciences. We are interested in hearing a collection of different perspectives on these problems and the methods or adequacy of solutions to them. To this end, the session is comprised of statisticians from industry, a national laboratory, a government agency, and a small business.

- (2:05) The pitfalls of site characterization.
Paul Black, Neptune & Co.
- (2:30) A random sample of knotty problems in applied environmental statistics.
David E. Coleman, Alcoa Tech Center
- (2:55) Winning the uphill battle for environmental statistics.
Brent A. Pulsipher, Richard Gilbert, and Dennis R. Weier, Pacific NW National Labs
- (3:20) Improving statistical practices through quality assurance.
John Warren, US Environmental Protection Agency
- (3:45) Floor Discussion

Invited Papers: CONTRACT RESEARCH CONSULTING: OPPORTUNITIES FOR STATISTICIANS

Wednesday, August 13, 8:30 a.m. – 10:20 a.m.

Organizer: Sarah J. H. Kogut

Chair: Lora H. Schwab

Abstract: (Please see the article by Sarah Kogut which appears in this newsletter for a comprehensive discussion of this topic.)

- (8:35) Training the CRO statistician.
Randy L. Anderson, Quintiles Inc.
- (9:00) Statistical consulting for government and industry in a CRO.
Richard Daniel Cohn, Analytical Sci Inc.
- (9:25) The statistician as freelance contractor.
Sarah J. H. Kogut, U of North Carolina–Chapell Hill
- (9:50) Discussant: Tad Archambault, Virtu Stat Ltd.
- (10:10) Floor Discussion

Special Contributed Panel: CONSULTANTS' FORUM: SURVIVAL ANALYSIS

Wednesday, August 13, 10:30 a.m. – 12:20 p.m.

Chair: Luis A. Escobar

Abstract: This will be an informal expository session on survival analysis. Panelists will first give an introduction to use of survival analysis in practice, with examples. This will be followed by information on sample size determination for survival analysis, and an overview of various types of residuals (martingale, deviance, Schoenfeld, and dfbetas) for checking Cox models. These residuals can be used for checking the functional form for covariates, proportional hazards, leverage and influence of observations, and robust variance estimation. SAS and Splus examples will be shown. This forum is aimed at applied statisticians and consultants, and the discussion will focus on questions that arise in actual practice.

Panel: Timothy M. Morgan, Bowman Gray Medical School
Anastasios Tsiatis, North Carolina State University
Terry M. Therneau, Mayo Clinic
Marcia Gumpertz, North Carolina State University

POSTER SESSION

Wednesday, August 13, 12:00 p.m. – 2:00 p.m.

- The academic biostatistician as a resource for health care quality management.
Martin L. Lesser and Nina E. Kohn.
- Scattergrams of bivariate normal correlated data.
David E. Miles and L. Jane Goldsmith.
- A goodness of fit measure for repeated measures random effects models.
Honghu Liu, Robert E. Weiss, and Neil Wenger.
- Diagnosing sinusitis: a case study.
Barbara L. Mann and David R. Little.

Roundtable Discussion Group: TRAINING STATISTICIANS FOR COLLABORATIVE CONSULTING

Wednesday, August 13, 2:00 p.m. – 3:50 p.m.

Panel: Randy L. Anderson, Quintiles Inc.
Daijin Ko, Virginia Commonwealth U.

Notes from the Editor

Your input please:

- How do you go about keeping up? When you seek background on a new statistical technique or finding, where do you turn? *The Current Index to Statistics*? *The Encyclopedia of Statistical Sciences*? Journals? Recent books? Colleagues down the hall? Short courses at the JSM (or elsewhere)?

Or, in perhaps the opposite direction, do you worry about keeping up? Some argue that, while many new methods are being developed in statistics, until they find their way into reliable and accessible software, they are of little use to consultants and clients. Maybe, then, the best way to deal with the flood of new information is to sit and wait patiently to see how it will eventually sort itself out. What are your views on this?

- Since the joint statistics meetings are coming up, would anyone care to offer advice, for a beginning consulting statistician, on how to make the best use of the meetings? What strategies do *you* employ?
- Is there an article or topic that you would like to see covered in *The Statistical Consultant*? I'm always interested in suggestions and comments for future issues of the newsletter, so please don't hesitate to write.

As always, you can reach me via e-mail at:

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