

# The American Statistical Association

## San Francisco Bay Area Chapter

Since 1928

June, 2003

### Joint Biostatistics and General Applications Program

### Experimental Design for Estimating Integrals by Numerical Quadrature with Application to Pharmacokinetic Studies

Darryl Katz

**Abstract:** Many experimental situations, including bioavailability studies, require the estimation of integrals by numerical quadrature (usually the trapezoidal rule) applied to dependent variables observed with error. The "conventional" approach ignores the error and, as a result, often leads to poor results. A strategy is described for selecting values for the independent variable (e.g., time) at which to make the observations. The strategy minimizes the expectation of the square of the difference between the exact integral and the quadrature approximation.

This approach was implemented and applied to simulated pharmacokinetic data, including the estimation of bioavailability. Results indicate that the approach is potentially useful in reducing the variance of resulting estimates and that it appears to be robust with respect to prior assumptions about model parameter values. In one case, it leads to a very surprising result.

**Date:** June 26, 2003  
**Time:** 3:30 - 4:00 PM  
Refreshments  
4:00 - 5:00 PM  
Presentation, Q & A

**Place:** Conference Room 5R, Building 5, Genentech, 499 Point San Bruno Blvd., South San Francisco, CA.  
See next page for directions

#### Business Matters:

**Mailing List:** ASA will be sending us the latest membership list soon. If you don't want to miss out on the latest presentation and job opportunities, make sure you check the "Bay Area" chapter affiliation when you renew your ASA membership and keep our address record up-to-date.

#### **New Chapter Officers for 2002-2003:**

**President** – Jim Lenihan  
**President Elect** – Ann Kalinowski  
**Vice President (Biostatistics Program)** – David Mould  
**Vice President (General Application)** – Karuna Ramachandran  
**Treasurer** – Ying-Qing Chen  
**Secretary** – Tiffani Fordyce  
**Web Master** – Dean Fearn

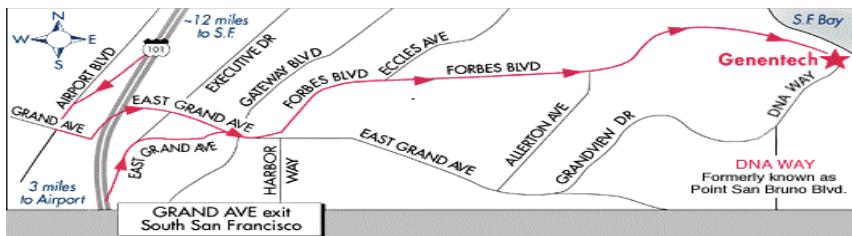
## Driving Directions to Genentech

### Genentech, Inc.

1 DNA Way  
South San Francisco, CA 94080  
(650) 225-1000

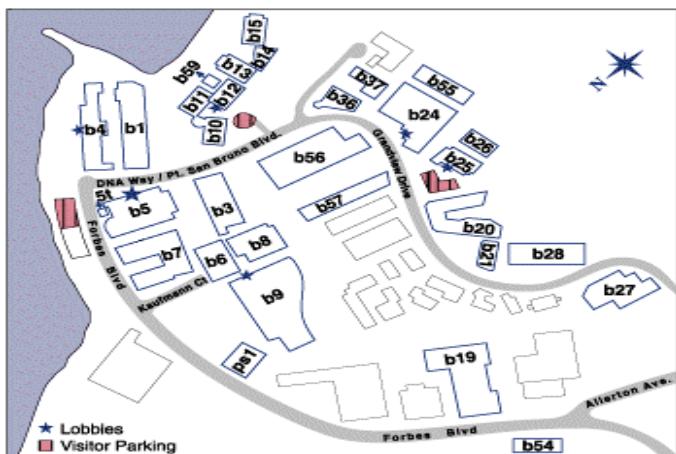
### Driving From the North:

- Take the 101 Freeway South
- Exit at Grand Ave./South San Francisco
- At the bottom of the exit ramp, turn left at the light onto Airport Blvd.
- At stoplight, turn left onto Grand Ave. and proceed under freeway to East Grand Ave.
- At the fourth stoplight, turn left onto FORBES BLVD.
- Continue on FORBES BLVD. for 1.3 miles until it terminates at DNA Way.
- Proceed to one of the three visitor parking lots and register at a lobby



### Driving From the South:

- Take the 101 Freeway North.
- Exit at Grand Ave./South San Francisco.
- At the bottom of the exit ramp, turn right onto East Grand Ave.
- At the first stoplight, turn right to continue on East Grand Ave.
- At the second stoplight, turn left onto FORBES BLVD.
- Continue on FORBES BLVD. for 1.3 miles until it terminates to DNA Way.
- Proceed to one of the three visitor parking lots and register at a lobby



## Other Matters of Interest:

### San Francisco Chapter

The San Francisco Chapter of the American Statistical Association maintains an active website (<http://www.sfasa.org>) and regular newsletter to its membership. Our goal is to encourage and promote professional interaction and networking among the statistical community in the Bay Area.

Please contact Ying-Qing Chen ([yqchen@stat.Berkeley.edu](mailto:yqchen@stat.Berkeley.edu)). if you are interested in joining (annual dues \$9).

San Francisco Bay Area Chapter  
**American Statistical Association**

149 Commonwealth Drive  
Menlo Park CA 94025

## Bay Area ASA Meeting Schedule

**Bay Area Survey Evaluators, researchers, statisticians (BASE) has a program scheduled as follows:**

"Highlights of Methodological Research Findings from AAPOR 2003": Victoria Albright (Field Research)

"Interviewers, Interviewing Strategies and Interviewer Effects": Lisel Blash (Public Research Institute, SFSU)

"A Deliberative Poll", luncheon keynote talk: Henry Brady (Director Survey Research Center, UC Berkeley)

"What's Nonresponse Got to Do With It (Quality)": Mike Dennis (Knowledge Networks)

"What's new on the web-based front?": Leora Lawton (Population Research Systems, LLC) & Dominic Lusinchi (Far West Research)

"Election Surveys: Sampling, Bias and Predictability": Amy Simon (Goodwin Simon Strategic Research)

**Thursday June 12, 2003, 10 AM to 4 PM  
Lawrence Hall of Science University of California, Berkeley campus, Hosted by the Survey Research Center, UC Berkeley**

Sponsored in part by the Pacific Chapter of the American Association for Public Opinion Research and the San Francisco Bay Area Chapter of the American Statistical Association

For further details on the program:

[srcweb.berkeley.edu/BASEatB03.html](http://srcweb.berkeley.edu/BASEatB03.html)

## Open Positions

### **Statistical Consultant/Analyst**

### **William E. Wecker Associates, Inc.**

William E. Wecker Associates, Inc. provides consulting services in applied mathematics and statistics. Areas of application range from consumer product performance to epidemiology, and to issues in accounting, finance and economics. Clients include Fortune 500 companies in the automobile, consumer products, banking, insurance and pharmaceuticals industries.

We invite inquiries for consulting positions at all levels. Desirable qualifications include:

- M.S. or Ph.D. in statistics, mathematics, operations research, economics or related field;
- Aptitude for quantitative problem-solving and experience in data analysis;
- Strong computer skills (we use SAS, S-Plus, Mathematica, and other business and scientific software on UNIX and Macintosh platforms);
- Strong communication skills;
- Ability to work in collaboration with others in an informal, collegial environment;
- Ability to work effectively under deadlines.

Compensation is competitive and commensurate with performance.

We are located in the city of Novato, Marin County, California, thirty minutes north of San Francisco.

Applicants should e-mail, fax or mail résumé, most recent university transcript and compensation history to the following address. No telephone calls please.

**Gary Harvey**

**William E. Wecker Associates, Inc.**

**505 San Marin Drive**

**Novato, California 94945**

**Fax: (415) 898-2260**

**[Employment@wecker.com](mailto:Employment@wecker.com)**

**<http://www.wecker.com>**

## **More Open Positions**

### **Manager of Research and Development**

#### **Description:**

We are seeking an individual to develop new and improve existing marketing information and competitive intelligence products for the wireless industry. The successful candidate will employ creative quantitative/statistical problem solving skills to provide innovative solutions to business problems. Primary areas of interest include statistical models pertaining to the purchase and use of wireless telephony and measurement of network performance for both voice and wireless data traffic. This work combines data from multiple sources to generate innovative solutions for predicting and monitoring the industry. Manage such projects from inception to delivery of a prototype, support production implementation and communications to clients. The successful candidate will lead a small team of one or two direct reports, independently developing solutions.

#### **Qualifications:**

##### **Requirements:**

- Advanced degree in Statistics, quantitative social science with a concentration in statistical methods, statistical Operations Research, or other quantitative discipline with an emphasis in statistics.
- Demonstrated ability to independently manage quantitative investigations and development projects to successful and timely completion.
- Experience working with both large and small datasets, often simultaneously to drive maximal inference.
- Extensive knowledge of SAS (especially the Stat module) in a PC environment.
- Base proficiency in SQL, higher skill a plus.
- Excellent written and oral communication skills with ability to clearly communicate ideas and results to non-technical business people
- Collegial team player with excellent people skills and comfortable under tight deadlines.
- Strong interest in and ability to engage in quantitative problem solving and analysis on data.

- Ability to work on multiple projects and set priorities.
- Experience managing a small team and developing junior analysts.

##### **Desired experience:**

- Five or more years work experience in quantitative market research or other statistical business modeling (e.g., credit scoring).
- Masters (or higher) degree in econometrics, statistics, or a statistical discipline.
- Experience applying statistical inference to craft new solutions for business purposes.
- Experience building quantitative models for the telecom (especially wireless) industry.

#### **Responsibilities:**

- Independent managing of product development projects (models and data investigations) including presentation of results to senior management and product teams.
- Manage a team of analysts, including development and evaluation of direct reports.
- Provide quantitative support and advise to Product Management.
- Contribute ideas and insights for creating new market intelligence products from both existing and new data streams

### **Telephia, Inc., San Francisco, CA**

#### **Company Location:**

**101 Green Street**

**San Francisco, CA**

**<http://www.telephia.com>**

## **More Open Positions**

### **Analytical Services Manager**

## **Description:**

Individual will lead and participate in analysis-driven client engagements - structuring, executing, and delivering quantitative project work on consumers' purchase and use of wireless products and services. Work directly with multiple data sources (satisfaction, response to offers, attrition, market share, etc.), basic database and statistical tools, and group statisticians to understand inputs, process, and outputs of quantitative techniques (regression, cluster analysis, factor models, etc.) and how they drive business conclusions. Direct client consulting engagements, manage timelines and workflows, create and deliver results to clients.

## **Qualifications:**

### Requirements:

- Excellent applied problem-solving ability and experience in a business setting
- Substantial quantitative ability and experience with statistical techniques
- Working knowledge of basic database and statistical tools (SQL, SAS, SPSS)
- Demonstrate a proven practice of project management discipline, project management skills
- Excellent written and oral communication skills with ability to construct and deliver client presentations, clearly communicate ideas and results to non-technical business people
- Degree in Econometrics, Operations Research, Statistics, or quantitative discipline with an emphasis in statistics, advanced degree a plus
- Strong aptitude, ability, motivation and interest in placing quantitative analysis in the context of marketing and business economics
- Ability to derive insight from large amounts of data from diverse sources
- Ability to work on multiple projects and set priorities
- Collegial team player on a cross-functional team with excellent people skills

## **Dear fellow chapter members:**

Since my term of president begins after the June meeting, I would like to take this opportunity to summarize the chapter's activities, and survey you, its members, to see how the chapter can better serve your professional needs.

### Desired experience:

- Minimum of 5 years work experience in Quantitative market research or risk modeling
- Masters or PhD degree in econometrics, statistics, or quantitative discipline
- Experience in a market research company

## **Responsibilities:**

- Lead and participate in custom analysis, data modeling and consulting engagements for carrier customers that drive improved performance from Telephia information
- Hands-on, data-driven investigation of wireless industry business issues
- Independent handling of key internal and client projects (models and data investigations)
- Direct and lead selected client engagements, manage teams to create deliverables and meet deadlines
- Capable of creatively solving "non-standard" problems

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For most of its history the chapter has had (almost) monthly meetings during the academic year (September – June) with speakers on various statistical topics. We have conscientiously tried to vary the location so that meetings are scattered throughout the Bay Area. The meeting times have traditionally been academic seminar time: cookies and coffee at 3:30 pm and talk from 4-5pm. The dates have been set for the convenience of the speaker, rather than being a specific day each month (e.g., second Thursday each month). The chapter publishes its newsletters to announce the talk, to give directions, and to list current job openings.

During the last few years, we have also added an annual short course (this year's to be on microarray analysis, given by Sandrine Dudoit of the Biostatistics Department at UC Berkeley in late June or early July), and a scholarship for a chapter student member to present a talk at the JSM. The chapter was also one of the earliest to have its own web page: [www.sfasa.org](http://www.sfasa.org), which is essentially an on-line newsletter, with links to other web sites of interest to statisticians.

I would appreciate your taking the time to fill out the survey below, so that the chapter's new administration can take steps to make the chapter's activities more responsive to your needs. The questions are divided by topic, and many of the questions are open-ended. Please mail your survey answers to:

Tiffani Fordyce  
149 Commonwealth  
Menlo Park, CA 94025

***Thank you,***

***Ann Kalinowski***

## **Talks**

How many chapter talks have you attended this year?

How many chapter talks have you ever attended?

Are the times of the talks convenient to you?

If not, what times would you consider convenient for you?

Have you found the topics of the talks interesting to you?

What topics would you like to see in the future?

Please provide us with names and affiliations of speakers for these topics, if possible.

Would you be willing to give a talk at a chapter meeting?

Have there been at least some locations of talks that have been convenient for you?

If not, can you suggest venues where they might be located so that they are convenient for you?

What are your main reasons for attending chapter talks? (Please put in order of importance to you.)

What are your main reasons for not attending chapter talks? (Please put in order of importance to you.)

## **Newsletter**

Do you read through the newsletter?

The chapter will be eliminating mailed newsletters in favor of emailed newsletters. Is that a problem for you? If so, why?

Is the newsletter timely?

Is the newsletter helpful?

Is there anything more you would like to see in the newsletter?

## **Short Courses**

Have you attended one of our short courses?

If you have not attended one, please list, in order of importance to you, why not? (e.g., price, location, date, topic, etc.) Detail in your answer is preferred.

If you have attended one, please list, in order of importance to you, why? (e.g., price, location, date, topic, etc.) Detail in your answer is preferred.

What topics would you like to see for future short courses?

Would you provide names of persons and affiliations to teach such courses?

## **Officers**

Would you be willing to be a chapter officer? The duties for each position are listed below.

**Vice presidents** find speakers, and set up the talks: location, dates, snacks and coffee, etc.

**Treasurer** keeps the master list of chapter members, keeps track of the finances, writes the checks (which must be countersigned by a second officer), fills out annual financial report for chapter.

**Secretary** types up the newsletter, keeps track of billing for employment ads, ensures that the newsletter is published and mailed out. Our hope is to reduce the onerous work of Xeroxing, folding, stapling, and affixing stamps and labels by emailing the newsletter.

**President-elect** has traditionally been in charge of helping to set up the short course, and does other chapter odds and ends as needed. However, since this position takes over as the executive officer, only persons experienced with chapter workings are elected to this office.

**President** oversees that the chapter is running smoothly: reminds officers of deadlines, helps keep in contact with national organization, delegates other chapter work among the officers, and steps in to perform duty of other officers if they are temporarily indisposed, and sets chapter agenda for the year.

**Chapter representative** is the main liaison with the national organization (American Statistical Association). This is a 3-year elected term. All other positions are 1 year.

