

## Special Event on 'Simpson's Paradox in Civil Litigation'

Plan to attend a special dinner presentation the evening of Tuesday, June 12th at the East Bank Club. Our speakers, Dr. Paul Meier and Mr. Lawrence Dinardo, will give a joint discussion entitled "Simpson's Paradox in Civil Litigation." Hear two points of view: the statistician's and the lawyer's. How does the statistician stay honest when there is no probability-based model or experimental model to support his/her results? When the level of aggregation is difficult to discern and is highly influential on the results? How does a lawyer deal with an independent-minded expert witness? What is the proper role of statistics in employment discrimination litigation?

The speakers will discuss an actual case of alleged age discrimination, *Grubb and Julow vs. Allied Signal Corp.*, which they won. A key factor in winning the case was the identification by Dr. Meier of Simpson's paradox. Our speakers worked together frequently in the past eight years, and have often found that Simpson's paradox is present, but not recognized by the plaintiff. Learn how to recognize its application while attending this lively, interesting and informative presentation.

Dr. Paul Meier has been a Professor of Statistics at the University of Chicago for over 30 years. He is the Ralph and Mary Otis Isham Distinguished Service Professor and was named the 1985-86 Chicago Chapter Outstanding Statistician of the Year. He is interested in the application of statistics in clinical research and in law. Recently, he has consulted on a number of race and gender discrimination cases.

Mr. Lawrence Dinardo is a partner with Seyfarth Shaw Fairweather & Geraldson. He specializes in the defense of employment discrimination cases brought against employers. During the 1987-88 academic year, on a leave of absence from the practice of law, he was a visiting associate professor at his alma mater, the University of Notre Dame Law School.

The dinner will be held at the East Bank Club, which was rated by *Time* magazine as the finest health club in the U.S. Come see for yourself; bring your husband, wife, date, friends or attorney. There is limited seating and we expect a sell-out, so please make your paid reservations early. The evening will start at 5 p.m. with hors d'oeuvres and a cash bar in the River Lounge. Dinner will begin at 6 p.m., followed by the featured presentation. The cost is \$27 for members, \$30 for non-members. To make your reservation, send a check payable to "Chicago Chapter ASA" to Kathy Morrissey, CNA Insurance Companies, CNA Plaza — 25-S, Chicago, IL 60685. Paid reservations must be received by June 6th. For more information, call Kathy at (312)

822-3935. The East Bank Club is located near the Merchandise Mart at 500 N. Kingsbury in Chicago. It is one block west of Orleans between Hubbard and Kinzie. Parking is available downstairs and across the street.

### What is Simpson's Paradox?

The paradox is exhibited strikingly by the following example, taken from Bishop, Fienberg and Holland's "jolly green giant," aka *Discrete Multivariate Analysis*. On aggregating survival data of infants from two clinics, one obtains the following table:

|                            |      | INFANT SURVIVAL |          |        |
|----------------------------|------|-----------------|----------|--------|
|                            |      | Died            | Survived | % Died |
| AMOUNT OF<br>PRENATAL CARE | Less | 20              | 373      | 5.09%  |
|                            | More | 6               | 316      | 1.86%  |

Thus, we are led to infer that more prenatal care is better for survival of infants. But if we look at the individual clinic data, we see the following:

|                            |      | CLINIC A<br>INFANT SURVIVAL |          |        |
|----------------------------|------|-----------------------------|----------|--------|
|                            |      | Died                        | Survived | % Died |
| AMOUNT OF<br>PRENATAL CARE | Less | 3                           | 176      | 1.68%  |
|                            | More | 4                           | 293      | 1.35%  |

|                            |      | CLINIC B<br>INFANT SURVIVAL |          |        |
|----------------------------|------|-----------------------------|----------|--------|
|                            |      | Died                        | Survived | % Died |
| AMOUNT OF<br>PRENATAL CARE | Less | 17                          | 197      | 7.94%  |
|                            | More | 2                           | 25       | 8.00%  |

This appears to tell us that survival is unrelated to amount of prenatal care. Indeed, paradoxically it could even have happened that the inference from the composite table (that *more* prenatal care is better for survival of infants) would directly be contradicted by the inference from the separate tables (i.e., that the separate tables would show that *less* prenatal care is better for survival of infants). More generally, Simpson's paradox exemplifies the fact that even though both inequalities

$$\Pr\{A|B \text{ and } C\} \geq \Pr\{A | (\text{not } B) \text{ and } C\}$$

$\Pr\{A|B \text{ and } (\text{not } C)\} \geq \Pr\{A | (\text{not } B) \text{ and } (\text{not } C)\}$  are true, it can happen that

$$\Pr\{A|B\} < \Pr\{A | (\text{not } B)\}$$

when B and C are not independent.

## Announcement

Given the increased use of and interest in statistics in litigation, the Board has been planning both a conference and a series of workshops on "Statistics and the Law." The June meeting was designed both as a kickoff for next year's program and a means of sampling membership interest in this area. The Board is interested in your suggestions as to the topics and direction next year's conference and/or workshops should take with respect to the central theme of "Statistics and the Law." Please address your comments to our Vice President, Conferences, Richard A. Smiley, Amoco Corporation, 200 E. Randolph, Mail Code 1801, Chicago, IL 60601.

## Position Available

**Project Scientist/Research Scientist** — Assist a multi-disciplinary team of scientists by providing statistical analysis and sampling design for environmental research programs, especially nationwide surface water monitoring programs. Minimum requirements include an M.S. in statistics plus six years of experience or a Ph.D. plus three years; a working knowledge of SAS, applied statistical procedures, survey sampling and design, general linear models, time series analysis, multivariate analysis and statistical graphics. Preference given for formal training/experience in an environmental science and a minimum of one year experience working in or consulting for an environmental science research program. Submit a cover letter specifically relating to this position, resume, unofficial transcripts, and the names and telephone numbers of three professional references. Send application materials to:

**Ms. Susan Carey**

**NSI Technology Services Corporation  
1600 SW Western Blvd.  
Corvallis, Or 97333**

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## Officer Slate for 1990-1991

Our Constitution calls for an announcement of the Nominating Committee's proposed slate of officers and directors at the April general meeting of the Chapter, and, if uncontested, that the officers be elected and installed at the May meeting. Since the Nominating Committee was late in developing its list of nominees, we are using the *Parameter* to disseminate the proposed slate of officers and directors. We will call for the election and installation of these officers at our June meeting.

|  |  |
|--|--|
| President .....                        | Albert Madansky<br>University of Chicago               |
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### Directors At Large

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| Linda Clark .....       | LMC Consulting Corporation      |
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| Vincent Hodgson .....   | Amoco Corporation               |
| James N. Kennedy .....  | James N. Kennedy & Associates   |
| Lois Orr .....          | U.S. Bureau of Labor Statistics |
| Bruce D. Spenser .....  | Northwestern University         |

## Janet Norwood Receives Statistician of the Year Award

Janet Norwood, Commissioner for the Bureau of Labor Statistics, received the Statistician of the Year Award at the May luncheon. The award was presented by Chapter President Paul Levy.

Commissioner Norwood gave a very interesting talk before a capacity crowd. Her remarks centered on two subjects. The first was the recent 0.2% increase in the national unemployment rate. She discussed the reaction of the financial markets and expressed her belief that it was not an important change in unemployment levels. Her discussion provided an insight into real life problems of statisticians.

The second topic was an account of her recent visit to the Soviet Union. She described the problems of the Soviet officials in their attempts to move toward a market economy. She said that they faced many difficulties, and she felt it would be some time before their goal would be reached.

She also said that the Soviets were very interested in starting a national statistical association similar to the ASA and that her role as Past President of the ASA generated many questions about how our association functions.

**Editor: Brian Wesbury**

**(312) 606-1448**

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*Parameter* offers a free placement service for ASA Chicago Chapter members. Job applicants should send a draft of their advertisement and a resume to the editor at the above address. Applicant names will remain confidential if requested.