



June 1987

WASHINGTON
STATISTICAL
SOCIETY

NEWSLETTER

June 9	Tuesday	The Power of the Mantel-Haenszel Test
June 17	Wednesday	On Relative Biological Effectiveness of Irradiation on Single Cells
June 23	Tuesday	Outcome in Pediatric Intensive Care: Multi-Institutional Validation and Applications

President's Report: 1986-1987

Daniel Kasprzyk
Washington Statistical Society - President

My year as President of the Washington Statistical Society is drawing to a close very quickly. It has been a rewarding year in that it reinforced my feelings about the Washington Statistical Society, its Board of Directors and members. The WSS is a truly outstanding organization whose members are involved in a wide variety of statistical applications and professional activities. Each President can observe this through the hard work of the Board members and the participation of the Society's members in its organized activities. This year was no different; the Society offered a large variety of seminars and several short courses. The occurrence of these events may appear effortless to the uninitiated; this is not so. The Program Committee Chairs and the Short Course Committee deserve our gratitude for another year of stimulating seminars.

The judging of the metropolitan D.C. area science fairs, a project initiated in 1986, was

repeated in 1987 under Susan Ellenberg's overall management. There is no doubt that WSS members got a lot out of participating in this event. Susan, in particular, deserves our thanks for initiating and following through on this work. During this year, the WSS also saw a change in the editorship of the monthly Newsletter and the preparation for a transfer of WSS secretarial responsibilities to a new secretary. Both David Judkins and Marie Argana learned quickly and have handled their new positions exceptionally well.

One reason for lamenting the quick passage of my tenure as President is that several projects, initiated when I took office, have not yet been completed. Last Fall in trying to improve membership benefits in the WSS, the WSS Board expressed an interest in developing a membership directory. Wendy Alvey has spent a good deal of time and effort trying to find a low cost way of developing and providing this

WASHINGTON STATISTICAL SOCIETY PROGRAM CHAIRS

Agriculture & Natural Resources Ron Bosecker 447-3895 Maurice Owens 734-4379	Public Health & Biostatistics Jai Choi 436-7047 Mary Foulkes 496-6818	Short Courses Virginia deWolf 366-5361 Terry Ireland 301-859-6104 Andrew A. White 436-7022 Glenn White 763-5248
Economics Lynda Carlson 252-1112	Social & Demographic Statistics Lee-Ann C. Hayek 357-1587 John Czajka 484-9220	Methodology Mary Mulry 763-7140 Bill Winkler 252-2140
Physical Sciences & Engineering Donald Gantz 425-3931	Statistical Computing Harry Foxwell 872-8058 Sally Howe 921-3395	Newsletter Editor David Judkins 251-1500
Employment Evelyn Kay 331-1153		

directory to WSS members. Unfortunately, the costs may be prohibitive. A decision by the Board on this matter will probably take place by summer.

In another area, I have been concerned about whether the WSS network of building representatives serves the purpose intended--namely to provide information about WSS seminars to a broad group of people, many of whom are not WSS members. Stephanie Shipp is conducting a census of our building representative network to determine whether this network is successful at informing the Washington Statistical Community of our activities. Even though all responses are not in yet, it appears that the building representative network does work successfully with seminar announcements posted or distributed in the building which the person represents. She is also soliciting names of individuals and agencies not covered by our building representative list.

A Committee, chaired by Nancy Kirkendall, was appointed to develop, among other things, a WSS invited paper session for the Sesquicentennial anniversary of the American Statistical Association at the 1989 annual meetings. The Committee has met several times during the past six months and expects the session to be organized and speakers invited by the end of this summer.

Mike Cohen becomes WSS Newsletter editor with the September 1987 issue. During the past year Mike undertook a review of the content, form, and composition of the Newsletter. His basic finding is that the members who expressed their opinions seem to be generally pleased with the Newsletter. The improvements which members

wanted seemed to be marginal improvements--more information about agency/company statistical activities and personnel changes. The WSS appreciates the work Mike has done, and you, the members of the WSS, will hear more about this in a future newsletter.

Finally, we in the Washington, D.C. area are fortunate not only to have very highly regarded statisticians among our membership but also to have prominent statisticians frequently visit the D.C. area. Oftentimes visitors to Washington are asked to speak at a WSS seminar. We try to take advantage of these opportunities whenever possible. This year the WSS Board tried something a little different; we invited a distinguished statistician to visit Washington and give a seminar on a topic of his choice. We called this special event the "WSS Distinguished Speaker Series." The event was cosponsored by the George Washington University Department of Statistics, Computer and Information Systems. Our speaker Leo Goodman, Professor of Statistics and Sociology at the University of Chicago and the University of California at Berkeley, gave an excellent seminar. A wine and cheese social followed his lecture. The seminar was successful in that over 70 people attended; we hope to continue the series as an annual WSS event. Cathy Dippo and Mary Mulry were instrumental in ensuring its success.

I thank the members of the WSS Board for their assistance and the members of the Society for the opportunity of working for you as President of the Washington Statistical Society this year. It has been a rewarding experience.

OTHER ANNOUNCEMENTS

New WSS News Editor

Beginning with the September 1987 issue, the newsletter will have a new editor: Michael Cohen. He received his Ph.D. from Stanford University in 1981. Currently, he is a professor of the School of Public Affairs at the University of Maryland. Previously, he has worked at the Energy Information Administration, the Department of Statistics at Princeton University, Applied Management Sciences, and the National Academy of Sciences. Next year he will hold an ASA/NSF/Census Research Fellowship.

He has been very active in ASA activities, serving as program chair for the WSS methodology section,

program chair for the section on Survey Research Methods for the Chicago meetings in 1986, and current Vice-Chair of the ASA Committee on Sections. His interests are broad and include robustness, regression, census adjustment, and general aspects of the federal statistical system.

Notices should be received by him at the University of Maryland, School of Public Affairs, Morrill Hall, College Park, Maryland 20742, no later than the first of the preceding month (i.e., by August 1 for inclusion in the September Newsletter). His phone number at the University is (301) 454-3397. Note that employment notices should still be sent to Evelyn Kay.

PROGRAM ABSTRACTS

TOPIC: The Power of the Mantel-Haenszel Test

SPEAKER: Janet Wittes, NHLBI

CHAIR: Eric Feuer, NCI

DISCUSSANT: Charles Brown, NCI

DATE & TIME: Tuesday, June 9, 1987; 1:30 to 3:30 p.m.

LOCATION: Landow Building, Conference Room A, 7910 Woodmont Avenue, Bethesda, Maryland
(Three blocks north of Bethesda Metro)

SPONSOR: WSS - Public Health and Biostatistics

ABSTRACT: The Mantel-Haenszel test is used in the analysis of a set of two-by-two tables in order to test the hypothesis of no partial association within the tables. Under various standard sampling designs, it is well known that the test has optimal properties when the odds ratios are the same in all tables and that the asymptotic power of the test is independent of the sampling design. This paper reports an investigation of the power of the Mantel-Haenszel test for small sample sizes. We present a new approximation to the power in that case, and use numerical approaches to assess its accuracy. The results concerning approximating power are relevant for alternatives with unequal odds ratio in the tables.

TOPIC: On Relative Biological Effectiveness of Irradiation on Single Cells

SPEAKER: Grace Yang, Department of Mathematics, University of Maryland, College Park

CHAIR: Andrew White, Office of Research and Methodology, NCHS

DISCUSSANT: Charles Swenberg, Armed Forces Radiobiology Research Institute, Bethesda, Maryland

DATE & TIME: Wednesday, June 17, 1987; 1:30 to 3:30 p.m.

LOCATION: NCHS, 3700 East West Highway, Hyattsville, Maryland, Room 1-39

SPONSOR: Office of Research and Methodology, NCHS and WSS

ABSTRACT: Current models for survival and transformation of living cells exposed to ionizing radiation are reviewed. Aspects of dose-response relationship are discussed in terms of types of radiation, and dose rate. Modified formulas are presented expressing the effectiveness of radiation on life shortening. Experimental data are included.

(continued)

PROGRAM ABSTRACTS (continued)

TOPIC: Outcome in Pediatric Intensive Care: Multi-Institutional Validation and Applications

SPEAKER: Murray Pollack, GWU School of Medicine and Childrens Hospital National Medical Center

CHAIR: Janet Greenblatt, Prospect Associates

DATE & TIME: Tuesday, June 23, 1987; 1:30 to 3:30 p.m.

LOCATION: Landow Building, Conference Room E, 7910 Woodmont Avenue, Bethesda, Maryland
(Three blocks north of Bethesda Metro)

SPONSOR: WSS - Public Health and Biostatistics

ABSTRACT: The Physiologic Stability Index (PSI), an objective measure of pediatric intensive care mortality risk, and other population characteristics were measured prospectively in 2394 patients from 9 pediatric intensive care units. The observed numbers of survivors and nonsurvivors were compared with the predicted numbers of survivors and nonsurvivors calculated from a logistic function derived from data on 822 patients at one institution. Patient populations differed significantly with respect to population characteristics (e.g., age, chronic disease, emergency admissions). Most important, mortality rates of the ICUs also differed significantly (range 3.0% to 17.6%). The mathematical function based on the PSI and age reliably predicted the outcomes in all ICUs. Thus, mortality rate differences in these ICUs could be explained by the differences in severity of illness of the populations.

A modification of the PSI, the Dynamic Risk Index, is an acute (<24 hour) mortality risk predictor also validated in this population. The applications of both of these predictors to quality assurance and cost-containment will be illustrated.

OTHER ANNOUNCEMENTS

International Association of Survey Statisticians (IASS)

IASS is a subsection of the International Statistical Institute (ISI) although you do not have to be elected to membership of ISI to join IASS.

The basic objective is to foster worldwide interest in the use of surveys to obtain information. One basic aim is to raise the quality of survey work by drawing attention to methodological problems and encouraging continued research and development of sound methods. The IASS organizes a strong program as part of the biennial meetings of the ISI (Tokyo 1987, Paris 1989) and also joins with other organizations in sponsoring workshops and seminars around the world. It was associated with the recent conference on Panel Surveys held in Washington and will be a co-sponsor of the planned conference on Telephone Survey Methods. Other meetings are planned for Nairobi and Lomé or Abidjan.

The IASS publishes a biannual newsletter, The

Survey Statistician, which includes news of forthcoming meetings and other information. There is also a section of statistical abstracts drawing attention to papers which have been published in major journals and which are relevant for survey statisticians. There is also a question and answer section for problems sent in by members. In addition, members may subscribe to the journal published by Statistics Canada entitled "Survey Methodology" at a special reduced rate. Members may also attend the ISI conference at a reduced registration fee.

Subscriptions are as follows:

IASS Membership.....	FF130
Survey Methodology.....	FF 60
Two special issues on Missing Data in Surveys	FF60

Write for membership to: IASS Secretariate,
C/O INSEE, 18 Boulevard Pinard, 75675 Paris,
Cedex 14, France.

(continued)

OTHER ANNOUNCEMENTS (continued)

Science Fairs 1987

The Washington Statistical Society has completed its second year of participation in the Special Awards programs of six metropolitan area science fairs. Twenty-seven volunteer judges, nearly twice as many as last year, spent a Saturday morning reviewing science projects and providing statistical pointers to some of the area's top science and mathematics students. Eleven students were awarded books and certificates; an additional 21 students received certificates. Awards were given for excellence in investigation or application of statistical methods. Most of the award-winning projects were recognized for appropriate methods of statistical design and analysis of experiments in applied research areas.

We learned this year that a minimum of four judges per fair is a big improvement on the two to three we had last year. However, even with four judges things were somewhat rushed, so that we are hopeful of enlisting even more volunteers next year.

Winners of WSS special awards and their project titles are as follows:

FAIRFAX COUNTY, AREAS I AND IV

Book and Certificate:

Aaron Phillips, 7th grade, Rocky Run Intermediate School, *Is there a relationship between precipitation and temperature?*

JoAnna Goodey, 7th grade, Sandburg Intermediate School, *How accurate are five day weather forecasts?*

Certificate:

Cassie Najarian, 8th grade, Lanier Intermediate School, *How fast fabric burns*

Beth Mallory, 7th grade, Robinson Intermediate School, *Human response to color*

Carolyn Parish, 8th grade, Lake Braddock Intermediate School, *Do girls' career goals require less math than boys' goals?*

Jason Graser, 7th grade, Key Intermediate School, *How does television and the amount of sleep affect grades?*

FAIRFAX COUNTY, AREAS II AND III

Book and Certificate:

Kimberly Henderson, 8th grade, Longfellow Intermediate School, *Probability: the normal curve*

Constance Elliot, 9th grade, McLean High School, *Biology and economics*

Certificate:

Ben McCain, 8th grade, Longfellow Intermediate School, *Flicker perception*

Laura Scheirer, 7th grade, Glasgow Intermediate School, *Study of effect of biased questions on survey responses*

Mazen Saah, 11th grade, McLean High School, *Correlations between blood pressure and academic stress*

DISTRICT OF COLUMBIA

Book and Certificate:

Kate Davidson, 5th grade, Lafayette Elementary School, *Do boys get more attention in math?*

Joshua Samuel Greenberg, 8th grade, Alice Deal Jr. High School, *A tall story: what factors affect adolescent height?*

Certificate:

Patrick Ladd, 11th grade, Gonzaga College High School, *Male sterility: a mechanism for the production of hybrids in alfalfa*

Mark Rasevic, 12th grade, Gonzaga College High School, *Soybean genetics*

Donald A. Hempson, 9th grade, Gonzaga College High School, *The effects of a magnetic field on the growth and development of the mustard plant*

Matthew Blum, 8th grade, Maret School, *Chaotic dynamics*

ALEXANDRIA-ARLINGTON-FALLS CHURCH

Book and Certificate:

Ben Ziegler, 11th grade, Bishop O'Connell High School, *Traffic simulation on the computer*

Steven Vilpors, 8th grade, Williamsburg Intermediate School, *Can you be better than the weatherman?*

Certificate:

Jennifer Feller, 11th grade, T.C. Williams High School, *Short-term effects of cigarette smoking on the mouth flora of a smoker*

Pearl Tesler, 11th grade, Wakefield High School, *Surface tension*

Brian Bowman, 8th grade, Swanson Intermediate School, *When your stomach is upset, what should you send to the rescue?*

Amanda Krug, 9th grade, Wakefield High School, *Which facial treatment works best?*

(continued)

OTHER ANNOUNCEMENTS (continued)

PRINCE GEORGE'S COUNTY

Book and Certificate:

Max A. Pugh, Oxon Hill High School, *Edge analysis of the teapot effect*

Mahsa Modarres, Glenarden Woods Elementary School, *Correlation between sex, age and lung volume*

Certificate:

Michael Frucht, Oxon Hill High School, *Embryonic circadian rhythms*

Jennifer Lorian, Dwight D. Eisenhower Middle School, *Understanding drug and alcohol abuse*

Danielle Douthett, Calvert Middle School, *Statistical analysis of french fries*

Alan Kirk, Milton M. Somers Middle School, *Firefly flashing*

MONTGOMERY COUNTY

Book and Certificate:

Matthew Neimark, 8th grade, Takoma Park Intermediate School, *Formulas to find number of Euler paths in some networks*

Certificate:

Ellen Paik, 8th grade, White Oak Intermediate School, *Do you get what you pay for?*

W. Richard O'Connell, 8th grade, Takoma Park Intermediate School, *The effects of temperature on surface tension*

Recognition is also due the WSS volunteers who did the judging. They are: Bill Cleveland, Brenda Edwards, Marilyn McMillen, Linda Pickle, Sid Schwartz, John Schwemberger, Don Stablein, R. Chilakamarri, Paddy Cleary, Annie Hays, John Seliskar, Wylie Wilson, Chip Denman, Frank Dorsey, Gloria Gridley, Jeff Miller, Howard Hogan, Vince Matthews, Susan Ellenberg, Glenn White, Lee Abramson, Lisa Kammerman, Mary Foulkes, Dwight French, Mary Grace Kovar, and Bob O'Neill.

More Building Reps Wanted

WSS wants to expand their network so more people will be informed of seminars, short courses, and other WSS activities. Do you know of a company, agency, or other group that would be interested in receiving WSS flyers? Can you recommend a contact? Please call or send information to: Stephanie Shipp, 1000 Riva Ridge Drive, Great Falls, VA 22066, (202) 272-5060 (7:30 a.m. to 4:00 p.m.), (703) 759-4273 (after 5:00 p.m.).

Summary of ASA Board Meeting, April 3-4, 1987

1. ASA has completed negotiations for the new building which is located at 1429 Duke Street, Alexandria, Virginia. Occupancy is expected in June. The Building and Development fund now is over \$1 million dollars. The campaign for contributions continues since the more that is collected, the lower future mortgage payments will be.

2. The Strategic Plan as finally revised was adopted. The plan proposes changes in the size and structure of the Association, the Board of Directors and the functions of various ASA organizational units. A constitutional revision committee will be appointed by President Bailar to fill in the details of the plan and propose the necessary revisions for carrying it out. The strategic plan will influence the course of ASA and the statistics profession for some years to come and should be thoroughly discussed as the details become available. A preliminary report is to be made to the Board at its December 1987 meeting.

3. The 1987 budget was presented and approved. The proposed budget is in balance but does not leave much leeway for additional expenditures. 1986 was in deficit but for a capital gain.

4. A search committee has been appointed to recommend a new executive director of ASA. Fred Leone is retiring at the end of 1987 and will become "Director Emeritus" through 1989, ASA's sesquicentennial year.

5. Plan for sesquicentennial year activities are proceeding. A new logo for ASA will be selected to replace the present eagle and snakes. Suggestions should be addressed to Robert V. Hogg, Jr., University of Iowa, Iowa City, IA 52242.

6. Establishment of a magazine directed to students was approved. The magazine is to be addressed to undergraduates and graduate students and will consist of two issues per year.

7. A committee has been appointed to set priorities for the proposed Office of Scientific and Public Affairs. A small sum of money was appropriated for this activity. The establishment of such an office, which will require considerable funding, was deferred. See President Bailar's article in the March issue of Amstat News in which she describes the proposed office and requests comments, particularly responses to the questions at the end of the article. It is important that members convey their opinions.

(continued)

OTHER ANNOUNCEMENTS (continued)

8. Future meetings:

1987 San Francisco
1988 New Orleans
1989 Washington, D.C.

1990 Anaheim (being negotiated)
1991 Atlanta

If you have any questions or comments on these
or other issues please call Eva E. Jacobs at 272-5156.

EMPLOYMENT COLUMN

Deadline for inserting notices is 5 weeks before the publication date. Send notices and requests to: Evelyn R. Kay, 520 - 22nd Street, N.W., Washington, D.C. 20037, (202) 331-1153.

SENIOR MATHEMATICAL STATISTICIAN -- The Statistical Design Branch of the United States Postal Service is recruiting for a position at the Senior Mathematical Statistician level. The incumbent will participate in the development of statistical systems for a broad area of postal operations. Activities include design of sampling plans, estimation procedures and measures of precision. Professionals with graduate training in mathematical statistics, experience in sampling, experimental design and methods of statistical estimation are invited to apply. Working knowledge of SAS and experience with an IBM operating system environment are advantageous. Salary \$35,448 to \$47,951 plus \$957 cost of living adjustment, depending on qualifications and experience. To apply, forward resume with salary history to: General Manager, Headquarters Personnel Division, VA: Senior Mathematical Statistician, 475 L'Enfant Plaza West, S.W., Room 1707, Washington, D.C. 20260-4261.

Westat is an employee-owned corporation headquartered in Rockville, Maryland. We provide statistical consulting and survey research to the agencies of the U.S. Government and to a broad range of business and institutional clients. Several positions are currently available which require a graduate degree in statistics:

Environmental Statistics: Experience with environmental or energy problems essential. Skills in sample design, analysis, survey operations, and project direction helpful. (Position JRM)

Survey Sampling: Experience required in survey operations, design, frames development, weighting, and variance estimation. (Position JW)

Industrial Consulting. Teach statistical process control and consult with clients in industry. Must have consulting and teaching experience, willingness to travel. (Position DM)

In order to be considered, interested applicants must identify the position and send resume with current salary to: Personnel Director, Westat Inc., 1650 Research Boulevard, Rockville, Maryland 20850. EEO M/F/V/H.

(continued)

EMPLOYMENT COLUMN (continued)

MATHEMATICAL STATISTICIAN 1529 - GS-13/14 — Position for a sample survey statistician at the M.S. or Ph.D. level with experience in sample design, survey methods, and analysis of data from complex sample surveys. Statistical computing skills also required. Position offers opportunities as a survey researcher and a technical consultant to program planners and data analysts. Send resume/SF-71 to Dr. James T. Massey, Office of Research and Methodology, National Center for Health Statistics, 3700 East-West Highway, Room 2-12, Hyattsville, MD 20782, (301) 436-7022.



P.O. Box 23502
Washington, D.C. 20026

NON-PROFIT ORG.
U. S. POSTAGE
PAID
FALLS CHURCH, VA.
PERMIT NO. 188

6-3