THE AMERICAN STATISTICAL PRIZE COMPETITION

This new contest is the most recent in a series of competitions being organized to encourage students to work together on research projects and to enable them to see first hand how quantitative information influences our everyday lives. The idea for this competition was first conceived at the Woodrow Wilson Foundation Summer Institute in Statistics held at Princeton University in 1984. It was further developed and formalized following Anne Hawkins's presentation on the United Kingdom Statistics Competition at ICOTS II in August, 1986.

Each team of students entering the competition will select, plan, and conduct a research project in applied statistics. To enter the contest, the team must submit a report demonstrating how and why the particular topic was chosen, how the research was conducted, and what conclusions were reached. The project must include the collection and analysis of data along with a commentary regarding the strengths and weaknesses of the selected statistical methods.

The organizing committee wishes to emphasize that the competition has not been developed exclusively for advanced mathematics students. Rather, the goals of the committee in organizing the competition are to provide a vehicle for all interested students to work together as a team, to discover the scope and applicability of techniques with which they are familiar, to apply these methods in an unfamiliar context, and finally to develop a critical appreciation of the logical progression from the formulation of questions to the determination of final conclusions. One criteria which will be important in the judging will be the suitability of the research methods and data chosen by the team to the particular project which they selected.

One prize of $300.00 will be awarded in each of three categories. These include grades 4-6, grades 7-9, and grades 10-12. A special prize of $100.00 will be awarded to the team submitting the project making the best use of a computer. Each team may select its own project. Possible topics might include school subjects, personal interests, or items of local or regional concern. An entry fee of $5.00 payable to the American Statistical Association will be required of each team. Entry forms and a brochure describing the competition may be obtained by sending a stamped, self-addressed envelope to:

-Dwayne Cameron
 Old Rochester Regional School
 135 Marion Road
 Mattapoisett, MA 02739

QLP PARTICIPANTS IN THE NEWS

Quantitative Literacy is now in the third year of the developmental phase that has involved the training of almost 3000 teachers, supervisors, and administrators representing 41 states and Canada. A comprehensive evaluation of the project is being conducted by the QL staff with support and guidance of an elite evaluation committee. The committee includes Dr. Thomas Romberg of the University of Wisconsin-Madison.

Dr. Romberg has also been selected to chair The Commission on Standards for School Mathematics (CSSM) which has been established by NCTM to develop professional standards for curriculum and instruction in grades K-12 that will delineate more effective ways of teaching and learning mathematics.

A number of other educators who participated in the project have also been in the spotlight recently. Among them are Diane Bishop and Arlene Johnson, two participants who were selected to present topics to students on the videotape which the QL staff has produced to address Quantitative Literacy's philosophy and approach to the teaching of statistics in grades 6-12. Arlene teaches in Westport, Connecticut. Diane, who was teaching in Tucson, Arizona, when she attended the QL "training of trainers" workshop, has just been elected to the position of Superintendent of Public Instruction for the state of Arizona.

There are five QL participants who received Presidential Awards for Excellence in Teaching Mathematics in 1986. They are Sanderson Smith of Cate School in Carpinteria, California; Murray Siegel of Walton High School in Marietta, Georgia; Tim Kanold of Adlai E. Stevenson High School in Prairie View, Illinois; Margaret Butler of Bartlesville Mid-High School in Bartles- ville, Oklahoma; and Kenneth Sherrick of Berlin High School in Berlin, Connecticut. Ken has been appointed to serve a three year term on the ASA/NCTM Joint Committee on the Curriculum in Statistics and Probability. He is also coordinating a QL regional follow-up workshop in Connecticut which will be held in the Spring of 1987.

The first three units (as well as teachers manuals) of the Quantitative Literacy series have been published by Dale Seymour Publications. The last unit is scheduled for release in February. Regional follow-up workshops are being conducted to allow participants to share experiences and exchange ideas. Two inserts are included in this issue of the newsletter which provide information on the QL software and the videotape. -Ed.

CENTER FOR STATISTICAL EDUCATION

A Center for Statistical Education has been established by the American Statistical Association under the Management Committee of Richard Scheaffer (University of Florida), Gail Burrill (Whitnall High School, Greenfield, WI), Patrick Odell (University of Texas at Dallas), Jim Shymansky (University of Iowa), and Jim Swift (Nanaimo, B. C.). The goal of the CSE is to significantly raise the quantitative literacy of this and future generations of school children. This is to be achieved by enhancing the components of the mathematics, science, and social science curricula that involve handling and interpreting data.

Early projects of the CSE will involve identifying and maintaining a list of resource teachers of statistics in both mathematics and science, annotating computer software appropriate for classroom use, establishing a national statistics prize competition, and building communication links with mathematics education faculty in colleges and universities. The hiring of a permanent director of the CSE is planned for late 1987. Watch for future announcements of CSE activities.

DON'T LET THIS PASS YOU BY...

...the January 1987 issue of DISCOVER magazine. "The Orderly Pursuit of Pure Disorder" is a non-technical article on randomness. The importance and also the illusiveness of randomness are discussed, and the uses of random numbers in such areas as banking, cryp- tology, and mathematics are explored. Of special interest is a schematic picturing the use of random digits to guarantee the privacy of transactions made by automatic bank teller machines.

...the November 4, 1985, issue of NEWSWEEK magazine. The article is a goldie oldie entitled "The Joy of Statistics". It is an essay by Robert Samuelson which is worth the time and effort to look up if you missed it. According to Samuelson, "In our society, loving dogs, cats, and goldfish is OK. Saying a kind word for numbers qualifies you as being a little mad."

NEW PROGRAMS

International Summer School
New Trends In School Statistics
July 20-31, 1987

This two week summer school is designed for teachers of students aged 9 to 19 who include, or who would like to include, statistics in their teaching. It is also suitable for those responsible for planning school courses with a statistical content. The school consists of lectures, workshops, and field trips for practical data collection. In addition to the academic program, there will be a full social program with the cost included in the registration fee. The social program includes visits to Chatsworth House, the city of York, museums, the theatre, and a special conference dinner.

The school will be conducted at the Centre for Statistical Education in Sheffield, England, on July 20-31, 1987. The Centre was set up in 1983 as a joint endeavor of the University of Sheffield and Sheffield City Polytechnic. It is recognized internationally for its role in influencing school statistics, curriculum development, and publications. Accommodation will be provided in one of the Sheffield City Polytechnic residence halls or at one of the local hotels. The registration fee includes lodging and all meals for the duration of the school.

Participants may bring spouses as accompanying persons. Registration fees for accompanying persons include full accommodation and all social activities, but they do not include the academic program.

The registration fee is ₤ 600 or US $950 or Canadian $1330. For accompanying persons, the registration fee is ₤ 350 or US $550 or Canadian $775. For additional information, please contact:

    -The Secretary
    The Centre for Statistical
      Education
    25, Broomgrove Road
    Sheffield, S10 2NA
    England, United Kingdom

LETTERS

PLEASE WRITE TO THE EDITOR IF YOU WOULD LIKE TO SHARE BOOKS, ARTICLES, IDEAS, OR LESSONS THAT HAVE BEEN SUCCESSFUL IN YOUR CLASSROOM.

The Model Curriculum Standards K-8 for the California Mathematics Framework include some of the newer graphing techniques for displaying student generated data. The review draft contains a model lesson on statistics which should be very helpful for elementary teachers who may be hesitant about teaching it.

Capture/Recapture can be done with colored beads or painted pennies. However, Pam Coffield of Columbus, Georgia, used a novel approach in her inservice session on the QL sampling unit which has great appeal for teachers and students alike. She substituted cheese and pretzel fish crackers. My high school class suggested using gummy creatures to predict the bear population when we studied direct variation in my first year algebra classes. Jim Swift's article in the NCTM Yearbook on Applications is an excellent resource for preparing to teach this topic.

Candy sales, a big source of fund raising on our campus, can also provide the basis for an informal lesson on probability. Conducting the experiment to predict the percent of orange candies in a package of M&M candy (described in the NCTM Student Bulletin) occupied only about 15 minutes of class time, and the students agreed that the lesson was a lot more interesting than the scheduled one on trinomial factoring.

Since statistics and probability form one of the strands in the new California Framework, there is increased interest in these topics throughout the state. A greater number of sessions are being dedicated to this area at state and local conferences and summer workshops. With the publication of the four QL units, materials appropriate for secondary students are now available.

    -Gretchen Davis
    Santa Monica High School
    601 Pico Blvd.
    Santa Monica, CA 90405

WE STILL HAVE A LONG WAY TO GO!

Neil Ullman found the following quote in a June 9, 1986, New York Times article, "Increased Schooling and Pay Accompany Return to Basics":

...and primary school students in Westfield, N. J., are now spending all their time on "basic" skills rather than probability, statistics, and more esoteric topics. "We tried to cut out all the extra junk," explained David J. Rock, the district director of instruction.

One wonders what this district's definition is for a "basic" skill.

-Ann Watkins
Los Angeles Pierce College
6201 Winnetka Avenue
Woodland Hills, CA 91371

NEW PUBLICATIONS AND PRODUCTS

Zeisel, Hans
SAY IT WITH FIGURES (Sixth Edition)
Harper and Row Publishers
10 East 53rd Street
New York, NY 10022
1985, Paperbound Text, $7.95

The first edition of Say It With Figures was published in 1947. Written in a clear, easy to read style that requires very little previous knowledge, it has become a standard in the field of social statistics. The first part of the book discusses how to present numbers in tables. Problems such as the following are considered:

If this table is to be converted to percents, how should it be done?

Annual Number of Men Arrested on a Felony Charge, by Age

(New York City, 1982)

Age Range	Arrested on a Felony Charge	No Such Arrest	Total
10–15	11,959	340,041	352,000
16–19	18,691	245,309	264,000
20–29	25,185	694,815	720,000
30–39	9,900	526,100	536,000
40–49	3,564	388,436	392,000
50+	2,059	1,029,941	1,032,000
Total	71,358	3,224,642	3,296,000

Like this?

Annual Number of Men Arrested on a Felony Charge, by Age

Age Range	Arrested on a Felony Charge %	No Such Arrest %
10–15	16.7	10.6
16–19	26.2	7.6
20–29	35.3	21.6
30–39	13.9	16.3
40–49	5.0	12.0
50+	2.9	31.9
Total percent	100.0	100.0
(Number)	(71,358)	(3,224,642)

Or like this?

Annual Number of Men Arrested on a Felony Charge, by Age

Age Range	Arrested on a Felony Charge %	No Such Arrest %	Total %	Number (thousands)
10–15	3.4	96.6	100	(352)
16–19	7.1	92.9	100	(264)
20–29	3.5	96.5	100	(720)
30–39	1.8	98.2	100	(536)
40–49	.9	99.1	100	(392)
50+	.2	99.8	100	(1,032)

Zeisel's answer is that the second table is the better choice because the proper procedure is to run the percents in the direction of the causal factor, i.e. age is the factor that causes the arrests.

Other sections review indices (What is the best way to measure the batting performance of baseball players?), how to handle "don't knows" in surveys, regression analysis, experimental evidence, and the panel (a group of individuals who serve as a continuous source of information).

This book is fun to read and is a good introduction to the kinds of statistical problems that social scientists deal with.

For an examination copy, send $1.50 to Harper and Row Publishers, Department 361, at the address above.

-Ann Watkins
Los Angeles Pierce College
6201 Winnetka Avenue
Woodland Hills, CA 91371

PROBABILITY AND STATISTICS
Arkansas Department of Education
4 State Capitol Mall
Little Rock, AR 72201-1021
1986, Paperbound Text

Since probability and statistics are relatively new topics for the elementary grades and some teachers need help, the Arkansas Department of Education has published this booklet for teachers of grades 4-6. The materials were prepared by teachers and supervisors, and the booklet contains background material and activities that can be photocopied for classroom use. To order, write to Charles Watson at the address above. -Ed.

STATISTICAL SCIENCE: THE PROFESSION
American Statistical Association
806 15th Street, N. W.
Washington, D. C. 20005
1986, Slide Presentation
Purchase: $65.00   Rental: $10.00

The ASA's Council of Chapters has developed this slide presentation which portrays statistics as a science and a profession. It is aimed primarily at senior high school students who possess good quantitative skills. However, the presentation is also appropriate for introductory statistics courses at the university level.

The slide project was designed by the council to introduce students to the field of statistics and to show the diversity of applications of statistics to problems in our technological society. The presentation is intended to be delivered as a fast-paced slide show lasting approximately 25 minutes. There are six modules in the package: an introduction, examples, educational requirements and job opportunities, applications, a summary, and a finale.

The package includes 80 professionally developed slides, an accompanying script, instructions, and an evaluation form. The materials are contained in a permanent binder. Future developments may include the production of an audiotape to accompany the slide presentation. The package may be ordered from Dr. Randall K. Spoeri, the Associate Director of ASA, at the address above.

THIS SECTION OF THE NEWSLETTER IS FOR YOUR QUESTIONS. SEND YOUR REQUESTS TO THE EDITOR. IF YOU HELP ANYONE SOLVE A PROBLEM, PLEASE MAIL A COPY OF YOUR LETTER TO THE EDITOR SO THAT OTHERS MAY BENEFIT FROM YOUR REPLY.

I am hoping to convene an ISI Round Table Conference, "Training Teachers to Teach Statistics", to take place in Budapest (July 23-27, 1988) immediately prior to ICME 6. Invited participants will consider some or all of the following topics: initial and inservice training of teachers in matters related to the changing nature of statistics, student assessment, evaluation of teaching materials and methods, technological innovations, pedagogy and curriculum content for teachers of mathematics and "user" disciplines, supply and demand for teachers of statistics, research into teaching statistics, and future trends.

In planning the conference, I have been contacting people interested in statistical education from all over the world. I hope the responses that I receive will form the basis of an international correspondence network which could be an important precursor of the ICOTS III in New Zealand in 1990. If anyone is interested in joining in this network, please contact me.

-Anne S. Hawkins
Centre for Statistical Education
U of London Institute of Education
20 Bedford Way
London WC1H 0AL, U. K.

FOR IMMEDIATE RELEASE

Statistics education was among the many topics discussed at the 1986 Joint Statistical Meeting in Chicago last August. Over two thousand statisticians attended the meeting which was sponsored by the ASA, the Biometrics Society, and the IMS. More than 200 sessions covered a huge variety of current topics, from the theoretical, "Percolation and First Passage Percolation" (which has nothing to do with your morning coffee), to application oriented tutorials, "Fundamentals of Clinical Trials".

One educational topic addressed at this conference which concerns statisticians and educators today is the emergence of new cooperative programs which involve a combination of industry, government, and universities to train statisticians. Speakers from DuPont, the University of Rochester, and the United States Bureau of the Census described recently developed programs which combine academic training with experience solving "real world" problems during an internship. Other sessions discussed using consulting centers on university campuses to train statisticians. In general, there seems to be a renewed recognition that more than knowledge of textbook mathematical statistics is needed to handle applied statistical problems.

Other topics concerned statistical education for students in other fields; techniques for presenting statistics to top management; teaching regression with a data set obtained on 327 runners prior to a marathon to predict their finishing times in the race; a project of the Delaware Chapter of ASA to design and conduct a poll for state-wide elections by 750 secondary students who were taught a unit on survey sampling; and even using descriptive statistics to analyze the musical scales on a Renaissance lute.

There was very little discussion of innovative teaching of statistics and probability at the precollege level since most of those attending the meeting do not teach at that level. Many of these statisticians, however, would be interested in learning about such activities. Thus, The Statistics Teacher Network would like to encourage some of its readers to discuss their experiences and ideas on teaching precollege statistics and probability at the 1987 Joint Statistical Meeting, which will be held in San Francisco August 17-20th. If you would like to give a 15 minute talk and can attend this conference, please contact the editor of the newsletter by March 1st so that we can arrange a session on precollege statistics.

-Jim Landwehr
Summit, NJ

CALENDAR

NCTM 65th Annual Meeting

The NCTM Annual Meeting will be held in Anaheim, California, on April 8-11, 1987. There will be a number of sessions involving probability and/or statistics. Check your program booklet for section numbers. As usual, the joint committee will have a booth in the commercial exhibits hall where you can obtain information about the Quantitative Literacy Project and demonstrations of the QL software. Come by and meet other teachers interested in improving statistical education, share your ideas with committee members, and let us know how we can help you.

Sixth International Congress on
Mathematical Education

Four topic sessions on teaching probability and statistics are being included in the ICME 6 program to be held in Budapest July 27-August 3, 1988. They will include:

Session 1 - Ideas for Teaching Probability at the School Level

Session 2 - Exploratory Data Analysis at the School Level

Sessions 3 & 4 - Recommendations on the Content of the Curriculum in Probability & Statistics at the School Level

Further information can be obtained from Ken Travers, 341 Armory, University of Illinois, Champaign, Illinois 61820.

WHERE TO WRITE

Address all letters, announcements, questions, articles being submitted for publication, and requests to get on of off of the mailing list to the editor:

-Beth Bryan
Department of Math & CSC
Augusta College
Augusta, Georgia 30910

Please share this newsletter with other teachers interested in statistics. You may photocopy anything in it.