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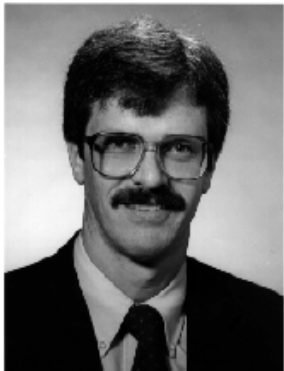
# NEWS

Department of Statistics

Penn State

1997 - Vol. 1

## A Note From Dr. Rosenberger



Welcome to the first issue of Statnews. There have been many exciting developments in the department during the past year that we would like to share. Although I was on sabbatical leave for the first six months of 1996, **Bruce Lindsay** did an outstanding job as interim head and the department moved forward. The past year has been busy and productive, with

the department hosting two international conferences: in June, the second conference on "Statistical Challenges in Modern Astronomy" and in September, "Statistics and Social Science: A Conference in Honor of the Late Clifford C. Clogg." We attracted three new and outstanding faculty members: **Mark Handcock**, **Zhen Luo** and **Martina Morris** and appointed **Dennis Lin** joint with Management Science and Information Systems. Items about these new appointments appear later in the newsletter. The department's research activity continues to grow, and the job market for our graduates remains strong (as you can see elsewhere in this newsletter). We admitted another outstanding group of beginning graduate students. This past fall, 2,981 students enrolled in classes taught by the department.

One year ago, the department underwent an external review and received a highly favorable report. Also released last year was the National Research Council report ranking graduate programs, which showed our department moving from rank 32 in 1980 to rank 19 last year. This official recognition reflects what we have been hearing from many quarters: our graduates, faculty peers, and employers.

The colloquium schedule was full of exciting talks and we hope to continue the successful effort of bringing in quality speakers during this next year. We have had many visitors to the department during the past year, which provides mutual exchange with our faculty and students, sharing their knowledge and expertise. I would like to thank everyone in the department for their dedication and tremendous accomplishments. It is a joy to head a department with the range of research activity and

instructional innovation reflected in our faculty. Funded support has grown by 15% during the past year, to \$500,000, just one measure of the vitality.

We hope you enjoy this inaugural issue and we look forward to any comments and feedback you may have.

## New Faculty

**Mark Handcock**, associate professor of statistics and social science, received his B.Sc. from the University of Western Australia in 1982 and his Ph.D. from the University of Chicago in 1989. He was assistant professor of statistics at the Stern School of Business from 1990 to 1995 and associate professor until 1996. His research interests are stochastic processes and spatial statistics.

**Dennis K.J. Lin**, associate professor of management science and information systems and statistics, received his Ph.D. in statistics from the University of Wisconsin-Madison in 1988. Prior to joining Penn State in 1995, he was associate professor at the University of Tennessee at Knoxville. Dr. Lin is an active researcher in the design of experiments and has expertise in the application of Continuous Quality Improvement and Total Quality Management.

**Zhen Luo**, assistant professor of statistics joined our faculty in August 1996 after receiving his Ph.D. in statistics from the University of Wisconsin-Madison. He received his M.S. in mathematical statistics in 1988 from Nankai Institute of Mathematics and a B.S. in applied mathematics from Beijing University, Beijing, China in 1985. Dr. Luo has done research in multivariate nonparametric modeling, multivariate analysis and regression diagnostics. He has data analysis experience on a wide range of statistical problems in bioscience, medicine, meteorology and environmental studies.

**Martina Morris**, associate professor of sociology and statistics received her MA in statistics from the University of Chicago in 1986 and a Ph.D. in sociology in 1989. She was associate professor of sociology at Columbia University from 1994 - 1996. Dr. Morris's research is in social network models, epidemic models for AIDS, and social science methodology.

We extend a warm welcome to all of them!

## Congratulations

The Board of Trustees approved **Susan Murphy's** promotion to the rank of associate professor of statistics with tenure at its meeting in June.

Congratulations on a well-deserved promotion.

## Retirement

Although we saw him around the halls of the Thomas Building this Fall, Dr. **Robert Hultquist** retired in July after thirty years of service to the University. Dr. Hultquist began his long career at Penn State as associate professor of statistics in June 1966. Prior to that, he was associate professor of statistics at Oklahoma State University, where he received his Ph.D. in 1959. He served as a mathematician in Combat Development for the U.S. Army for two years and was a consultant for Kodak, Westinghouse, and IBM. Since joining our faculty, Dr. Hultquist has been an outstanding teacher whom his students will miss. We hope that he and his wife, Lynn, will enjoy the many years that they have ahead -- at the moment traveling the country to visit family and friends. We will certainly miss Bob Hultquist's expertise in the classroom and the cheer he has brought to all of us.

## ATTENTION

### CLASSROOM BUILDING RENAMED

On Thursday, September 5, 1996, the Classroom Building was renamed the Joab L. Thomas Building. Dr. Thomas served as Penn State's fifteenth President from 1990-1995. The building was constructed in 1990-91 and houses state-of-the-art technology-equipped classrooms and administrative offices for the Eberly College of Science, including the Statistics Department. After the ceremony renaming the building there was an open house with technology classroom demonstrations and an outside reception.

## Special Honors

Last year marked the 25th anniversary of **Bob Heckard's** employment with Penn State. He was presented with his 25-year chair at the statistics pizza party on August 27th and he received a plaque at the Annual Faculty Awards Reception on October 4, 1996. Congratulations on a well-deserved honor!

**Bruce Lindsay**, distinguished professor of statistics, was selected as a Guggenheim Fellow by the John Simon Guggenheim Memorial Foundation. Dr. Lindsay was

among 158 scientists, scholars, and artists selected to receive the award in 1996 out of nearly 3,000 candidates. The Guggenheim Fellowship will help to support Dr. Lindsay's efforts to develop a nonparametric approach to parametric statistics. He will conduct research, which could expand the understanding of robust statistical methods, during a sabbatical year at the University of Victoria. Congrats, Bruce!!!

**G.P. Patil**, distinguished professor of mathematical statistics and director of the Center for Statistical Ecology and Environmental Statistics was invited to be the master of ceremonies at the International Ecological Congress of the International Association for Ecology Awards Ceremony of the Distinguished Statistical Ecology Awards at the Silver Jubilee of Statistical Ecology, in which Sir Robert May and Sir Richard Southwood were among the award recipients in Manchester, UK.

**James L. Rosenberger**, professor and head of the department, was named a fellow of the American Statistical Association. The designation "fellow" is a singular honor in the association and signifies an individual's outstanding professional contribution and leadership in the field of statistical science.

**C.R. Rao**, Holder of the Eberly Family Chair in Statistics, received the P.C. Mahalanobis Birth Centenary Award.

## Sabbatical

**Janice Derr**, director of the Statistical Consulting Center, was able to visit the Department of Econometrics at Monash University in Melbourne, Australia, during January and February, 1996. She visited the consulting units at Monash and at the University of Melbourne, and gave two talks and a workshop on non-statistical consulting skills.

**J. Keith Ord**, David H. McKinley professor of public administration and professor of statistics, took a sabbatical leave Spring semester 1996. He visited the Department of Econometrics at Monash University in Australia, where he conducted research on non-linear time series and revised Volume Two of Kendall's Advanced Theory of Statistics. During this time, he also gave numerous presentations and attended several conferences.

**James L. Rosenberger**, professor and head of the department, took a sabbatical leave from January through June 1996, to pursue research in the design of experiments and explore the use of computer technology in teaching. He was in residence at the University of Leeds, England, during the spring semester, and also visited other universities to discuss their use and production of teaching technology. Dr. Rosenberger gave

talks at the Universities of Leeds, Sheffield, Aberdeen, Marburg, and Goettingen.

## Statistical Centers

### Statistical Consulting Center

The Statistical Consulting Center is a team of faculty, staff, graduate, and undergraduate students in the Department of Statistics with expertise in statistical methodology and applications.

Their three-part mission is to improve the quality of research at Penn State by providing statistical advice to faculty, staff, graduate students and administrators; to train statisticians to interact effectively with investigators from other disciplines; and to encourage collaborative research between statisticians and investigators from other disciplines. A survey taken during the 1995-96 academic year showed the level of client satisfaction with short-term consulting increased. Statistics 580 practicum students consulted with 100 clients at Penn State. The SCC sponsored training and support for research data management, with graduate students gaining experience in research collaboration and in supervision. Statistical advice was provided to over 150 Penn State research faculty, staff, administrators, and graduate students.

The video tapes produced several years ago to improve communication skills in statistical consulting are still being requested and are available to rent or purchase. They provide four half hour sessions of material for training consultants.

### Center for Statistical Ecology & Environmental Statistics

The Center for Statistical Ecology and Environmental Statistics was initiated under a cooperative agreement between the National Oceanic and Atmospheric Administration and Penn State. The center is the first of its kind and enjoys an international reputation.

In collaboration with interested agencies, institutions, and projects, the center has an ongoing program of research that integrates statistics, ecology, and the environment. The emphasis is on individual and collaborative research, training, and exposition on improving the quantification and communication of human impact on the environment.

Current research projects and activities include spatial statistics, geographic sampling and analysis, environmental monitoring and assessment, integration of environmental data and information, biodiversity measurement and comparison, and superfund site characterization and evaluation under cooperative research agreements with the

U.S. Environmental Protection Agency and National Science Foundation.

The center also serves as the headquarters of a novel cross-disciplinary journal, *Environmental and Ecological Statistics*, published by Chapman & Hall with Dr. Patil as its founding editor.

### Center for Likelihood Studies

The Center for Likelihood Studies, established in 1992, is led by Dr. **Bruce G. Lindsay**, distinguished professor of statistics. The main goal of the center is the fostering of a creative and interactive environment for students and faculty who share common interests in the area of likelihood theory and methods. This past year, Matilde Sanchez and Liwen Xi, both students of Dr. Lindsay, received their Ph.D. in statistics. In August, four students presented talks at the Annual ASA Meeting in Chicago: Brenda Gaydos, Yong Lin, Ramani Pilla, and Yunling Zuo.

## Colloquium

Under the direction of Dr. **Bing Li** (Spring 1996) and Dr. **Steve Thompson** (Fall 1996) the department once again enjoyed excellent speakers for our colloquium series throughout the year. Those presenting from outside Penn State included **Steen Anderson**, Indiana University; **Brian Junker**, Carnegie Mellon University; **Peter C.M. Molenaar**, University of Amsterdam; **Jun Teng**, Stanford University; **Richard Levine**, Cornell University; **George Casella**, Cornell University; **Paul Rosenbaum**, University of Pennsylvania, Wharton School; **Prakasa Rao**, Indian Statistical Institute; **Zhiliang Ying**, Rutgers University; **S.N. Lahiri**, Iowa State University; **Mark Low**, University of Pennsylvania, Wharton School; **C.J. Stone**, University of California-Berkeley; **Zehai Yang**, Beijing Indian University; **Sallie Keller-McNulty**, Kansas State University; **Erik Parner**, University of Aarhus; **Abram Kagan**, University of Maryland; **Robert Wardrop**, University of Wisconsin; **Alfred Stein**, Agricultural University, The Netherlands.

The following speakers were from Penn State: **Zhen Luo**, **Dennis Lin**, **William Harkness**, and **Mark Handcock**.

## Faculty Talks

**Dr. Thomas Hettmansperger**, professor of statistics, gave an invited talk at the Statistics Honor Society, Virginia Tech University, titled "Six Impossible Things Before Breakfast," in April 1996. While in Finland visiting Hannu Oja at the University of Oulu, he visited Lahti for the Nordic Statistics Conference and the University of Helsinki in August 1996, where he gave an invited short course titled: "Nonparametric Data Analysis," at The Finnish Society of

Biostatistics. He gave an invited paper titled "Invariant and Equivariant Rank Methods in Multivariate Location Problems," at the First NIU Symposium on Statistical Science at Northern Illinois University in September 1996.

**Dr. Susan Murphy**, associate professor of statistics, was invited to spend a month at Universite' de Paris-Sud to conduct research with Pascal Massart and Aad van der Vaart. While there, in May 1996, she gave an invited seminar on "Semiparametric Likelihood Ratio Inference." She also gave invited talks at Ludwig-Maximilians-University of Munich, Technical University of Munich, and University of Regensburg. In June 1996, Dr. Murphy gave a talk at the IMS Western Regional Meetings in Pullman, WA. In July 1996, she was an organizer of the Conference on Stochastic Inference, Monte Carlo and Empirical Methods, South Hadley, MA. She also gave an invited talk on "Semiparametric Likelihood Ratio Inference" at the meeting. In August, 1996, Susan gave a talk in the invited session: "Missing and Censored Data," at the Joint Statistical Meetings of the ASA, IMS, ENAR, and WNAR in Chicago, IL. She attended a meeting on High Dimensional Probability in Oberwolfach, Germany. While there she gave a talk on "Semiparametric Likelihood Ratio Inference." She gave an invited talk "Semiparametric Models," at the 4th World Congress of the Bernoulli Society in August 1996.

**Dr. Michael Akritas**, professor of statistics, gave invited talks at the Universities of Goettingen, Marburg, and Limburgs, and at the Second World Congress of Nonlinear Analysts during the summer of 1996. In October, 1996, he gave a talk at the University of Illinois at Urbana-Champaign and in early November at the University of Indiana, Bloomington.

In August, 1996, **Dr. Joseph Schafer**, assistant professor of statistics, delivered a talk on "The NHANES III Multiple Imputation Project" at the Joint Statistical Meetings held in Chicago, IL. This talk was invited by the Survey Research Methods Section of the American Statistical Association. Following his presentation, formal discussion was delivered by three prominent survey researchers. Joe's paper summarized a three-year research project sponsored by the National Center for Health Statistics. The project will culminate this fall with the release of multiple imputed NHANES database to the public.

**Dr. G.P. Patil**, distinguished professor of mathematical statistics, was an invited speaker at the University of Rome Department of Statistics, Probability, and Applied Statistics. His talk was titled "Frontiers of Statistical Ecology and Environmental Statistics." He also spoke at the Eleventh Annual EPA Conference of Statistics in Williamsburg, VA. His talk was titled "Improved Environmental Statistics and Reporting with Innovative

Environmental Resource Sampling and Assessment." He gave the inaugural keynote address at the Conference on Challenges and Innovations in the Management of Hazardous Waste in Washington, DC. Dr. Patil gave two talks at the Conference on Assessment of Biodiversity for Improved Forest Planning, Monte Verita, Switzerland. He also gave two talks at the First Indian Ecology Congress, New Delhi, India. Dr. Patil was an invited plenary speaker at the First Biometric Society Italian Region Conference in Corona, Italy.

## Grant News

In May, 1996, The Center for the Study of Prevention through Innovative Methods was funded by NIDA (\$688,977 in FY 96-97) and began operations. **Dr. Joe Schafer** (\$71,757 in 96-97) and **Dr. Susan Murphy** (\$74,495 in 96-97) have RO1's under this center. The center is funded for 4 years and is headed by **Dr. Linda Collins** of human development and family studies. Graduate students Jennifer Bacik, Rose Brunner, Jerry Maples and Maren Olsen are involved in the interdisciplinary research in the center. All have research assistantships through the center.

During the summer of 1996, Penn State received three grant awards with **Dr. Joe Schafer** as principal investigator. The first one was listed above. "Statistical software for data with missing values," is a two-year award of \$81,402. This is a subcontract of a Small Business Innovation Research Grant (SBIR) awarded by NIH to StatSci, Division of Mathsoft Inc. This SBIR will support the development of new Splus functions and data structures for handling missing data. Joe, and graduate student, Recai Yucel, are working on new algorithms for missing continuous and categorical data in multilevel and repeated-measures settings.

"Models for the Nonresponsive Mechanism and Imputation." The National Agricultural Statistical Service and USDA, with major support from the Bureau of the Census, awarded a one-year cooperative agreement of \$58,500 to develop integrated systems for data editing and imputation in the next Decennial Census in the year 2000. Joe Schafer, along with graduate student Bonnie Ghosh-Dastidar, will also serve on a special USDA panel to provide guidance on edit and imputation procedures in the ongoing National Agricultural Census.

The Center for Statistical Ecology & Environmental Statistics has the following research grants with Dr. Patil as the principal investigator. Multi-scale statistical approach to critical-area analysis and modeling of watersheds and landscapes (10/1/95 - 9/30/98 through the NSF for \$400,000. The U.S. Environmental Protection Agency awarded \$625,000 (5/15/93-5/14/97) for Research and

outreach on observational economy, environmental sampling, and statistical decision making in statistical ecology and environmental statistics. They also awarded \$446,198 (10/1/93 - 9/30/97) for research and outreach on sampling design and status estimation for environmental monitoring and assessment program.

## Faculty News

During the week of June 17-21, Dr. **Joe Schafer** taught "Methods for Item Nonresponse." This one-credit graduate course was offered simultaneously by the University of Michigan's Survey Research Center and by the Joint Program in Survey Methodology at the University of Maryland, College Park. For three days, Joe lectured in Ann Arbor while students in College Park watched via teleconference link. Then Joe quickly boarded a plane for Washington and completed his lectures in Maryland while students in Michigan watched him on television. The course was attended by academic researchers in the University of Michigan Summer Scholars program, and by a number of statisticians from federal statistical agencies in the Washington area. Participants received theoretical background and hands-on experience with new missing-data techniques. By popular demand, Joe will offer a similar course next summer in Michigan and Maryland. He will also offer a two-day short course in February 1997, "Applications of Markov Chain Monte Carlo to the analysis of survey data," sponsored by the Washington Statistical Society. Also, look for another tutorial at next summer's Joint Meetings in Anaheim.

In April, 1996, Dr. **Susan Murphy** became an Associate Editor of the *Annals of Statistics*.

## Welcome New Students

The department would like to welcome the following new students who were admitted into our graduate program this fall: **Marianna Dizik, Susan Emmerling, Martin Felix-Medina, Eric Good, Brenda Heinrick, Jobriath Kauffman, Ann Kupinski, Jerry Maples, Richard McGrath, Maria Mouyi, Asha Reaves, Virginia Recta, and Haritini Tsangari.**

## Awards

Congratulations to the following students who received funds for travel during this past year: **Ramani Pilla, Yanling Zuo, Bonnie Ghosh-Dastidar, Loredana DiConsiglio, Kate Meaker, Eleanor Tipa, Matilde Sanchez, Shailaja Suryawanshi, Liwen Xi, Yong Lin, and HenSiong Tan.**

Also, special congratulations to **Annie Qu** and **Suzanne Dubnicka** who received Vollmer-Kleckner awards for outstanding performances in their second year course work.

## Congratulations Students

### Doctorates

**Matilde Sanchez** (August) has taken a position at Merck, Inc. as a biometrician. Her thesis titled *Nonparametric Analysis of Repeated Measures* was conducted under the direction of Distinguished Professor of Statistics, Bruce Lindsay.

**Shailaja Suryawanshi** (August) is working as a Biometrician at Merck, Inc. Her thesis titled *Analysis of High-Dimensional Data In Problems of Regression and Discrimination With Applications To Size and Shape Analysis* was conducted under the direction of Eberly Professor C. R. Rao.

**Liwen Xi** (May) has taken a position as a Biometrician at Merck, Inc. Her thesis titled *Measuring Goodness-of-Fit In the Analysis of Contingency Tables With Mixture-Based Indices: Algorithms, Asymptotics and Inference* was conducted under the direction of Distinguished Professor Bruce G. Lindsay.

### Masters

**Sandy Balkin** (August) Pursuing a Ph.D. in Management Science.

**Scott Beattie** (May) pursuing a Ph.D. in Statistics.

**Daniel Campos** (August) has started working at Minitab.

**Madhumita Ghosh-Dastidar** (May) pursuing a Ph.D. in Statistics.

**Lynn Kirstein** (August).

**Samuel Lowe** (May)

**Lynn Malacane** (May) has started working for the EMMES Corporation.

**Barry Miller** (August) has started working for Rhone-Poulenc Rorer.

**Mustafa Nadar** (May) pursuing a Ph.D. in Statistics.

**Maren Olsen** (August) pursuing a Ph.D. in Statistics.

**Jo Orsin** (May).

**Rachel Williams** (August) has started working at Clemson University.

**Recai Yucel** (August) pursuing a Ph.D. in Statistics.

## Conference News

### STATISTICAL CHALLENGES IN MODERN ASTRONOMY II CONFERENCE

The second cross-disciplinary international conference on astrostatistics was held in June, 1996, at the Nittany Lion

Inn. The aim of the conference was to build upon the developments since the first conference at Penn State in 1991, exposing researchers and students of the two communities to issues of common interest. Issues not included in the 1991 meeting were discussed, invited new researchers from both fields described new astronomical problems and projects, and generally kept communication between the two communities alive and active. Workshops and conferences covering methodological issues in astronomy and astrophysics are regularly held in Europe. Yet, most of these papers and conferences make little reference to the academic statistical literature, or involve collaborations between statisticians and astronomers. Our conference was designed to help rectify this deficiency. The conference had several sessions spread over four days. The sessions began with invited lectures by statisticians describing important new developments. Applications of the methods, along with suggestions to tune the methods for the needs of the astronomy community were discussed by astronomers. In some sessions, astronomers took the lead and presented the statistical problems they encounter and statisticians commented on them. Particular data analysis problems and methods were addressed in numerous contributed presentations.

The two leading international organizations in statistics, the International Statistical Institute (ISI) and the Institute of Mathematical Statistics (IMS), and the International Astronomical Union (IAU) co-sponsored the conference. It was financially supported by two federal agencies, the National Science Foundation and the National Aeronautics & Space Administration; International Science Foundation (to finance travel for scientists from the former Soviet Union); Eberly College of Science, the Department of Statistics and Astronomy and Astrophysics, and the Program Development Fund of Continuing and Distance Education.

### **SOCIAL SCIENCE & STATISTICS: A CONFERENCE IN HONOR OF THE LATE CLIFFORD C. CLOGG**

An interdisciplinary conference on social science and statistics was held September 26-28, 1996, at Penn State to honor the late Dr. **Clifford C. Clogg**, distinguished professor of sociology and professor of statistics.

The conference was co-chaired by Dr. **Mark Becker**, University of Michigan, and Dr. **Michael Sobel**, University of Arizona. Sponsors included the American Statistical Association Government Statistics & Social Statistics Section and the American Sociological Association Methodology Section with support by the National Science Foundation, Clifford C. Clogg Endowed Lectureship and the Pennsylvania State University.

A series of invited paper sessions organized around themes that symbolized the distinguished career of Dr. Clogg were held. The sessions were based on lectures by leading statisticians, demographers, and sociologists and included commentary and discussion from the general audience.

The keynote address was delivered by Professor Clogg's long time mentor, colleague, and friend, Dr. **Leo A. Goodman**, the Class of 1938 Professor of Statistics and Sociology, University of California - Berkeley. Among the most cited authors in the Social Science Citation Index, Dr. Goodman has had a major impact on research methods used in sociology and other areas of the social sciences. He has published more than 150 articles and three books, primarily on statistical methods in the social and behavioral sciences. His most recent research has focused on the further development of statistical methods that bring the same rigor to the analysis of qualitative variables that has characterized the analysis of quantitative data.

After the keynote lecture, a moving tribute to Dr. Clogg was when the statistics library was dedicated to his memory. The Clifford C. Clogg Memorial Library houses many of his textbooks that were donated by his wife, Judy and daughters, Katye, Edna, Roberta, and Edith.

Memorial funds for the Clifford C. Clogg Memorial Lectureship were contributed by friends and colleagues of Clifford C. Clogg and the Pennsylvania State University. The fund was endowed in 1996 (when \$10,000 was achieved) and the inaugural lecture was given at this conference, by Professor Goodman.

Additional contributions can be made to the Clifford C. Clogg Memorial Lectureship in Sociology and Statistics, and sent to The Pennsylvania State University, Office of Development and University Relations, One Old Main, University Park, PA 16802.

### **Personnel Notice**

**Jun Recta** has joined the Department as our computer assistant in charge of the machines in the Multimedia Statistical Education Laboratory and general maintenance of equipment and hardware. He is located in Room 424 and can help with all of those little quirks in the system.

**Laurie Salopek** is our new information technology associate who has responsibility for system administration of the Sun network and general unix support.

Welcome aboard!!!

**ALUMNI REPLY FORM**

Please complete and return this form for our alumni files. Include news (professional and/or personal) of your current activities, or suggestions for the next *Statnews*.

Name \_\_\_\_\_ Degree(s) & year(s) \_\_\_\_\_

Residence Address \_\_\_\_\_ Home Phone \_\_\_\_\_

City, State, Zip \_\_\_\_\_

Business Address \_\_\_\_\_ Business Phone \_\_\_\_\_

\_\_\_\_\_ Fax Number \_\_\_\_\_

City, State, Zip \_\_\_\_\_

Internet/Electronic Mail Address \_\_\_\_\_

Position \_\_\_\_\_

**Information About Yourself:**

(Unless you request otherwise, we will assume it may be mentioned in future Newsletters.)

I do not wish to have this information in Statnews or alumni directory.

**Employment Information:**

If you work for a company which may be interested in employing statisticians, either at the undergraduate or graduate level, please let us know. We will make this information available to our graduates.

**WE APPRECIATE YOUR SUPPORT**

In this time of decreasing support from the State of Pennsylvania and the extreme difficulty in obtaining enhancement funds, contributions to the department become increasingly more important in permitting us to pursue our departmental goals. I'm sure you are aware that if you make donations to the University you can direct them to whatever program you wish. If you would like to make a donation to the Department of Statistics, please direct it to our fund to enhance the department: Statistics Department Research Fund, Room 326 Thomas Building, University Park, PA 16802-2111

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**Editorial Advisor:** Dr. James L. Rosenberger  
**Editor:** Kathleen DiFlaviana  
**Editorial Assistant:** Laurie Roan

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