



The Statistics Department Newsletter

editor: Bill Notz

Letter from the Chair by Tom Santner

Welcome to the third edition of the Statistics Department Newsletter. You will notice many changes in the Department this year, the first of which is on the banner of the Newsletter--we have a new Editor, Bill Notz. Bill has taken over from Angela Dean as Vice Chair and Newsletter Editor. Secondly, Saul Blumenthal has become Graduate Studies Chair replacing Doug Wolfe. Everyone who entered the Department for the past 12 years had first contact with Doug as he helped many students make a smooth transition to Ohio State. Everyone who was a GTA for the past two years worked with Angela on their assignment as she marshalled the effort to staff over 100 courses each year. I would like to thank both of them for their service to the Department. We have also hired a new faculty member, Hani Doss, who joined us from Florida State University (see page 9).

We have had one other important administrative change with the hiring of a new Administrative Assistant, Susan Haught, who has been working hard to absorb and carry out the endless details of keeping everyone in a large department in the proper classrooms, paid and otherwise able to carry out their day-to-day tasks. Because of her efforts, we are in good shape on the administrative front.

Our physical facilities underwent several positive changes in the past year--we gained some much needed space. After innumerable years of occupying exactly the same set of offices in Cockins Hall, we had a chance to expand this past summer. We gained several suites of offices on the second and third floors of Cockins Hall

when the Department of Mathematics completed its move to the new Math Tower. These offices were renovated during the Summer quarter and then occupied in September. The extra offices have given us two new capabilities. We now have the majority of the graduate students housed in Cockins Hall and it is much easier for us to accommodate visitors. Things have changed dramatically from the days when 004 Cockins Hall was considered the premier graduate student location; it is now considered low end digs! There is a list of the 1994-1995 visitors given later in the newsletter and we anticipate that the number of visitors will grow over the next 4-5 years.

The last area of change that I want to note is that the Departmental research computer facilities underwent a substantial enhancement this past year as we completely switched UNIX computing hardware by going from DEC to HP machines. As those of you who compute with workstations know, there is a world of difference between them and the stand-alone, personal computers. Our system administrator, Brian Smith, did a super job of making a virtually seamless change to the new equipment.

We have had some contact with alumni during the past year, but please keep us informed of your changes of location, jobs, and personal news. On behalf of the Department faculty and staff, I wish you success in all your endeavors and ask that you please stop by when you are in Columbus.

The Information Superhighway now has an exit to the Statistics Department! For more on our World Wide Web page, see page 14.

WHAT IS HAPPENING IN RESEARCH

Experiments involving carry-over effects

by Angela Dean

Many experiments in the psychological, pharmaceutical, and human factors engineering fields involve taking observations on subjects over time under different experimental treatments (stimuli). There are two difficulties in analyzing such experiments. The first is that observations on the same subject are not independent and, even when a subject effect is included in the model, the error variables may continue to be correlated. The second difficulty is that the effect of the treatment may "carry-over" from one time period to the next. This is fairly evident in a drug trial where a drug may remain in the body for some time, but it also occurs in other types of experiment. For example, if a subject is asked to perform a series of tasks, one of which is particularly difficult, this difficult task may impair the ability of the subject to perform well on the task immediately following.

The carry-over difficulty has traditionally been handled by designing experiments in such a way that the estimates of the treatment effects are (almost) independent of the carry-over effects. In simple experiments, this can be accomplished by using Latin squares in which every ordered pair of treatments occurs once in the square. Each subject is then assigned the sequence of treatments as determined by a row of the square. The balance of the ordered pairs enables the treatment estimates to be estimated as efficiently as possible. Some balanced Latin squares have been known since the 1940's, but work continues today on construction methods of new squares with similar properties. (Isaac and Dean, 1994, OSU Technical Report No. 512).

A related problem occurs when the treatments are combinations of levels of several factors. A particular example is a taste testing experiment where several ingredients are varied. Not only are the effects of the factors and their interactions of interest (so should be independently estimated, if possible), but also there are generally fewer judges than treatments. Latin squares are no longer feasible designs. Work in progress with Ken Russell of the University of Wollongong in Australia, is attempting to identify simple construction methods of efficient designs for this problem.

Work with Susan Lewis (University of Southampton, England) and Jane Chang (Idaho State University) deals with another variation of the carry-over effect problem. Subjects may be asked to perform a series of tasks under one set of experimental conditions in one session, and then return at a later date to perform the same tasks under a different set of experimental conditions. This, too, has a factorial nature since the tasks and the experimental conditions (and perhaps their interaction) are to be compared. Suitable designs have a split-plot structure since the tasks are observed in smaller time intervals than the experimental conditions. In a recently submitted paper, we identified several classes of optimal designs for this problem. We also addressed the issue of a correlated error structure. In practice, the error structure may be unknown and many experimenters would analyze the data as though the errors were independent. We investigated the robustness of some of the optimal designs to non-independent errors and found that as long as the correlation was reasonably small, the variances calculated with independent errors differed from the correct variances by only a small amount.

WHAT IS HAPPENING IN BIOSTATISTICS

HIV Sequence Variation Conference by Dennis Pearl

The International Conference on HIV Sequence Variation and Statistical Methods was held at The Holiday Inn on the Lane in Columbus, Ohio, on March 5th and 6th, 1994. The conference provided a significant interdisciplinary interaction between specialists in HIV infection, Molecular Genetics, Statistics, and Mathematical Biology.

Studies of HIV sequence variation range from the macro to the micro: from global geographic variation to local variation across individuals, to the variation of the transmitted virus between sexual partners, to the variability of the quasi-species within an infected individual, to the covariation of different sites along the virus. Each of these levels of investigation must be related to the clinical progress of the disease and to the behavior of the virus in the laboratory.

Current methods for analyzing the available information are only partially suited to these studies, and many of their statistical properties are not fully understood. Examples of methodological issues discussed at the conference include understanding the sampling variation of features of HIV sequences, assessing the degree of statistical confidence in a constructed phylogeny, and developing ways to investigate the relationship between sequence data and laboratory or clinical covariates.

The conference received external funding from the National Institutes of Health, The Sloan Foundation, and Roche Diagnostic Systems. In a strong show of local support, matching contributions were also received from nine different academic units of The Ohio State University. The conference was very successful, attracting more than a 100 participants (about one-third from outside the U.S.) and precipitating plans for a second international conference to be held this year at Rutgers University. The local organizers were: Doug Critchlow (Statistics), Paul Fuerst (Molecular Genetics), Mike Para (Infectious Diseases), Dennis Pearl (Statistics - conference coordinator), and Joe Verducci (Statistics).

Proposed Biostatistics Center

The opening of the proposed Biostatistics Center continues to draw closer thanks to contributions from The College of Medicine, The College of Mathematical and Physical Sciences, The OSU Cancer Center, and the office of the Vice President for Research. However, the planned Center which seeks to focus the efforts at OSU in Biostatistical Consulting, Methodological Research, and Graduate Training needs a new name - at least until all of the requirements are met for the University's official "Center" status.

VISITORS AND SEMINARS

Valery Nevzorov, a Professor in the Department of Mathematics and Mechanics from St. Petersburg University, Russia, visited our department during Winter and Spring, 1994. In the Spring quarter he taught a special topics course on record statistics which covered the study of various

distributional properties of record values and record times when the observations come from continuous as well as discrete distributions. Nevzorov collaborated with H. N. Nagaraja in the investigation of properties of record values and characterizations associated with them. The

research has been summarized in two technical reports and in a talk Nevzorov gave at the 3rd World Congress of the Bernoulli Society in Chapel Hill, NC, in June 1994. These reports have also been submitted for publication.

Kevin Donegan from the University of Western Sydney-Macarthur visited in Spring 1994. While here he worked on some joint projects with Prem Goel and gave an interesting talk on "How to Beat the Booze Bus" (the results of a consulting project on the factors affecting blood alcohol concentration).

Roger Berger from North Carolina State University visited for a few weeks in Autumn 1994. During that time he worked with various members of the Department on some research problems concerning tests of hypotheses.

S. Sivaganesan from University of Cincinnati visited the Department in Autumn 1994. While here, he pursued joint research with Mark Berliner and Steve MacEachern.

Ashish Das is visiting the Department for the 1994 - 95 academic year. He comes to us from the Indian Statistical Institute. He is teaching full time and pursuing joint research with Angela Dean and Bill Notz.

Ki-Hoon Lee is visiting the Department this year. He comes to us by way of Jeonju University in South Korea. While here he is working on joint research with Doug Wolfe.

As part of an interdisciplinary series of talks on the analysis and interpretation of heart rate variability data, **Ronald W. Millard** of the Department of Pharmacology and Cell Biophysics at University of Cincinnati and **Dwain Eckberg** of the College of Medicine at Virginia Commonwealth University gave talks during the Spring Quarter, 1994. This series was organized by H. N. Nagaraja and was sponsored by the Office of Research, the Graduate School, the Departments of Statistics and Physiology, and the Division of Cardiology.

During Autumn Quarter 1994, the Department had the annual Chotey Lal and Mora Devi Rustagi Memorial Lecture. This year's speaker was **Vijay Nair** from the Department of Statistics and the Department of Industrial and Operations Engineering at the University of Michigan. Professor Nair is an internationally recognized leader in Quality Improvement. His talk dealt with the use of spatial information in process improvement in integrated circuit fabrication.

LINKS WITH INDUSTRY AND GOVERNMENT

Over the years, the Department has fostered links with industry and government through its research program, its seminar program and its Industrial Relations Board.

INDUSTRIAL RELATIONS BOARD

Members of the Statistics Department Industrial Relations Board interact with the faculty on research projects; they help obtain internships for students; they recommend topics to be included in the curriculum for students who intend to work in industry or government; and they facilitate the funding of fellowships for

students. The Statistics Department is very happy to have the following people currently serving on its Industrial Relations Board.

- **Dr. Joseph J. Chmiel**, Director of the Statistics & Data Management Department of Abbott Labs.
- **Dr. Elizabeth Margosches**, Section Chief of the Epidemiology and Quantitative Methods Health Effects Branch of the EPA.

- **Dr. Daniel Meyer**, Statistics Department at The Lubrizol Corporation.
- **Dr. Randall Potter**, Quality Engineering Department, AT&T Microelectronics.
- **Dr. Stephen J. Ruberg**, Director of the Statistics Department of Marion Merrell Dow.
- **Dr. Robert Tortora**, Chief of the Statistical Research Division, U.S. Bureau of the Census.

This year, the board met with the department on October 21. Several issues were discussed, including:

- a possible focus for the next meeting, namely issues concerning training and teaching of short courses.
- participation by faculty in internal conferences offered by companies.
- how statisticians in academics become involved in partnerships in industry.
- areas of statistics and emerging technologies that are of interest in industry and government.
- how quality improvement ideas might be useful in the university.
- encouraging recent graduates to visit and share their experiences on the transition from school to job.
- use of software in our Masters level courses. We are obtaining copies of SAS for the department computers for use in our Masters level courses. This interface will be a substantial improvement over the current means of access through the Wylbur operating system.
- ideas for providing time to interact with students. At our next meeting we will plan more time for students, including an informal luncheon with the students and faculty.

Dr. Joseph J. Chmiel, Director of the Statistics & Data Management Department of Abbott Labs and a member of our advisory board also spoke in the Department's colloquium series during the Spring quarter. His topic involved pharmaceutical applications of statistics and probabilistic modeling of health economic decisions.

THE DEAN'S ADVISORY COUNCIL

The College of Mathematical and Physical Sciences has an advisory board consisting of alumni of the college. This board met on October 7, 1994. One member of this board is Dr. John H. Davis, who received his Ph.D. in Statistics from Ohio State in 1972. Dr. Davis is currently President of Davis Consulting in Richardson, Texas. We had an opportunity to meet with Dr. Davis while he was in town and he had several suggestions for us. We enjoyed meeting Dr. Davis, thank him for his input, and look forward to continued contact with him.

THANK YOU!

We wish to say a special thank you to all of you who help support our department activities through your donations to the University. You are helping to make lives more fulfilling for the students who are following in your footsteps. We encourage you to specify your university donations to be applied to one of the following Statistics Department funds:

525898 Powers Award (teaching awards for graduate students and faculty)

536826 Whitney Scholarship (awards for consulting and research for graduate students)

526245 Rustagi Memorial Lecture

537669 Statistics Support Fund (support for visiting colloquium speakers and conference travel awards for graduate students)

INDUSTRIAL SUPPORT

Each year the Department of Statistics is able to offer special recruitment Fellowships to some of the very best new applicants to our graduate programs. These Fellowships

are funded through the generous support of sponsoring industrial organizations, for which the Department is always grateful. The sponsoring organizations, their Fellowship stipend amounts and the current 1994-95 student recipients are as follows:

Lubrizol Foundation Fellowships

Two awards in the amount of \$1,500 each are provided; the 1994-95 recipients are **Steven Bortnick** from Bowling Green and **Jacqueline Miller** from Miami University (OH).

Dow Chemical Company Foundation Fellowship

One award in the amount of \$1,500 is

provided; the 1994-95 recipient is **Danielle van Zwet** from Clarion University and Miami University (OH).

Marion Merrell Dow Fellowship

One award in the amount of \$1,500 is provided; the 1994-95 recipient is **Jennifer Holdcraft** from Kenyon College.

We appreciate all of the past support from the Lubrizol Foundation and the Dow Chemical Company Foundation. The Marion Merrell Dow Fellowship is new this year and we look forward to many years of support from them as well.

WHAT IS HAPPENING IN TEACHING

About the Consulting Service

In the winter quarter the consulting service began to place more emphasis on finding large projects which would continue over several quarters. Rather than working on several small projects over the quarter, three of the four consulting students assigned to the lab were able to commit themselves full-time to single large projects involving more complicated data sets. This was designed to give the consulting students a different type of experience. Two students worked as a team on a project from the phobia clinic over three quarters, and a third student worked on a project from surgery for two quarters. The remaining student continued in the old format of working on several smaller projects over the quarter. The projects worked out well and the experience proved to be a positive one for the students involved.

Self-paced teaching

Dennis Pearl and Bill Notz have been developing self-paced versions of our elementary courses Statistics 135 and

145. These courses make extensive use of technology. They are built around an electronic course manual/lab book situated on a server in the computer labs we use for our courses. This manual/lab book (which has been dubbed the "learning log") tells students what they need to study in the text, which text exercises they need to do, which videos they need to watch, and provides practice problems and review material for students. It requires students to check off completed assignments and it automatically keeps track of the portions of the log accessed by a student. This allows the instructor to monitor the progress of each student. This log also allows the instructor to leave messages for students, serving as a sort of student mailbox. This log is linked to Data Desk (the statistical software used in our elementary courses) and the Electronic Encyclopedia of Statistical Examples and Exercises (described in last year's newsletter). The "learning log" is still under development and H-C Tsai (a Ph.D. student) is doing much of the programming. A complete prototype is expected this spring.

Academic Enrichment Grant for teaching

The Statistics Department received an Academic Enrichment grant for obtaining materials to be used in our elementary courses. The grant allows for the purchase of video projection equipment and materials that can be used to develop lab exercises (for example, blood pressure monitors that can be used by students to collect data).

Teaching Mentors

This year the University Provost, Richard Sisson, started a special program for a select group of five graduate students. This group consists of students who have won a university graduate teaching award and are planning on a career as a faculty member. The program involves pairing these students with faculty who have won the Alumni Distinguished Teaching Award. The faculty mentors are charged with developing innovative ways to help prepare these graduate students for the teaching they will eventually do as faculty. **Bill Notz** and **Elizabeth Stasny** were selected to participate as mentors in this first year of the program. They have been asked to mentor **Terri Childers**, a graduate student in psychology. Terri has an extensive background in mathematics and statistics. Bill and Elizabeth are advising Terri as she helps the Psychology Department develop a technology based statistics course for graduate students in psychology.

1994 TOPICS COURSES

Prem Goel offered an advanced topics course (Stat 882), entitled Information, Inference and Decision, during Winter. It covered various measures of information and their inter-relationships, statistical information and likelihood, comparison of statistical experiments, classification based on information measures, model selection and statistics based on AIC, and outliers/influential observations in regression based on information measures.

In the Spring Quarter **Valery Nevzorov** taught a special topics course on record statistics which covered the study of various distributional properties of record values and record times when the observations come from continuous as well as discrete distributions.

In the Autumn Quarter **Smarajit Bose** offered a special topics course in statistical learning methods and neural nets. The course started with an introduction to neural net models, which was followed by discussions on nonparametric statistical models. Several nonparametric methods (ACE, MARS, CART, projection pursuits, additive splines, etc.) were studied in detail. Finally, some similarities and differences between these statistical methods and the neural net method were investigated.

AWARDS

JOURNAL AWARDS

Awards (consisting of a subscription to a statistical journal) are given for academic achievement. This year, these awards were won by **Baoshe An**, **Roger Bilisoly**, **Peggy Hwang**, **Shuying Li** and **Peiling Yang**.

POWERS TEACHING AWARDS

The **Thomas and Jean Powers Teaching Awards** are presented each year to (i) an outstanding instructor from among the assistant and associate professors in the Department, (ii) an excellent graduate

student lecturer (with sole responsibility for a class), (iii) an excellent recitation instructor. These awards were instituted in 1986, via a generous donation to the Statistics Development Fund by Tom and Jean Powers.

In 1994, the faculty award was presented to **Mark Berliner**. Past award winners have been Mark Berliner, Doug Critchlow, Steve MacEachern, H. N. Nagaraja, Bill Notz, and Elizabeth Stasny.

The Department is lucky to have a large number of excellent Graduate Teaching Associates. The selection of "the" best instructor is never an easy task, and there are always a number of extremely good teachers who are runner-ups for the award. In 1994, the award for best lecturer was presented to **Jeff Draskoci-Johnson**. The best recitation instructor awards were presented to **Guohua Pan** and **Brian Williams**. Each of these TA's made an outstanding contribution to the teaching mission of the Department.

Finally, in recognition of exemplary service, **Craig Cooley** was presented with an award for superb editorship of the Graduate Student Statistics Newsletter and **Brian Wynne** was recognized for outstanding sports reporting.

WHITNEY AWARDS

In 1992, Professor Emeritus **Ransom Whitney** and his wife **Marian Whitney** made a generous donation to the Statistics Development Fund to institute three new awards for graduate students. Two of these awards were presented for the first time in 1993 and the third award for the first time this year. The co-winners of the *best consultant in the Statistical Consulting Service* were **Roger Bilisoly** and **Peggy Hwang**. The award for the *best consultant working as a research associate on a research grant* was presented to **Hsing-Chuan Tsai**. In autumn of 1994, the award for the *best research leading to the Ph.D.* was presented for the first time. The

winner of this award was **Brian Jones**. We congratulate these people and thank them for their hard work.

NEW GRANTS AWARDED TO FACULTY

Hani Doss has received a one-year grant that started in December 1994 from the Air Force Office of Scientific Research. The title is "Statistical Inference for Coherent Systems from Partial Information and Markov Chain Monte Carlo Methods."

H. N. Nagaraja is the principal investigator of a two-year grant from the American Heart Association, Ohio-Affiliate. In collaboration with OSU cardiologist Philip Binkley and graduate students Srinath Sampath (Statistics) and Scott Patterson (Biomedical Engineering), he has continued his Markov chain modeling of the heart period data from congestive heart failure patients.

Prem Goel and **Elizabeth Stasny's** grant from the USDA has been renewed to continue their work on developing small area estimation methodology for county level crop yield estimates and to initiate development of methodology for crop yield forecasting.

Nandini Raghavan was awarded a one-year Research Planning Grant starting September 1994 by NSF for the project "Bayesian Inference for Nonparametric Regression in Generalized Linear Models."

ABOUT THE FACULTY AND STAFF

New Faculty

Hani Doss joined the Department in August 1994. Prior to this he had been at Florida State University for twelve years. Hani is working on the development of nonparametric Bayesian estimation in Survival Analysis, using Markov chain Monte Carlo methods. He is also working (jointly with B. Narasimhan of Penn State, Erie) on the development of computer technology to enable Bayesians to dynamically change their priors and quickly see the resulting changes in the posterior means and densities.

Andrej Yakovlev joined the Department this winter and is visiting the Department through June, 1997. He is a Professor in the Department of Applied Mathematics at St. Petersburg Technical University and was previously head of the department. Dr. Yakovlev began his career as a physician in 1967, received a Ph.D. in Biology in 1973, and a D.Sc. in Physics and Mathematics in 1981. He is a member of the Russian Academy of Natural Sciences, a member of the Council of Fellows of the Collegium Ramazzini, and the European Study Group for Cell Proliferation. Not surprisingly, his interests are in Biostatistics, most recently models for tumor latency.

Books

Andrej Yakovlev has completed a book entitled *Stochastic Models of Tumor Latency and Their Applications* with A. D. Tsodikov. This is the first volume of the Series in Mathematical Biology and Medicine, edited by B. Asselain. It is scheduled for release shortly.

Faculty Honors

Andrej Yakovlev was the recipient of an Alexander von Humboldt Award in 1994.

Departmental Research

In addition to the research supported by the new grants awarded to faculty mentioned on Page 8, there are many interesting research projects underway in the department. Some of these were highlighted as articles in last year's newsletter, and others in the current newsletter. A brief list of the main research interests of the faculty follows:

Smarajit Bose is working with Finbarr O'Sullivan of University of Washington on clustering algorithms for Image Segmentation problems, and with Charles Kooperberg of University of Washington, and Charles Stone of University of California, Berkeley on classification problems. He is also collaborating in two projects on diagnosis of low back disorders with the Biodynamic Group (headed by Bill Marras) in the Industrial Engineering department at OSU.

Michael Browne, who holds a joint appointment in the Departments of Psychology and Statistics, is working on models for learning data, rotation methods in factor analysis, and factor analysis for time series (with Ph.D. student Peggy Hwang).

Robert Bartoszynski, Dennis Pearl, and Ph.D. student John Lawrence are continuing their work on nonparametric goodness-of-fit tests for multivariate data.

Robert Bartoszynski is also working on the design of optimal tests of bioequivalence with Jean Powers (who took early retirement from OSU in 1992 and now works for Children's Hospital in Columbus).

Doug Critchlow and **Dennis Pearl** are continuing to work with Paul Fuerst (Molecular Genetics), Michael Para (Internal Medicine) and Ph.D. students Shuying Li and K. Nourijelyani on new techniques for using nucleotide sequence data to investigate the course of HIV infection.

Doug Critchlow and **Joseph Verducci** are continuing their study of paired ranking data.

Angela Dean is working on various aspects of designing experiments involving carry-over effects, in particular construction of balanced Latin squares (with Paul Isaac of Kansas State University) and efficient factorial designs (with Ken Russell of University of Wollongong, Australia). Angela Dean is also interested in the construction of nearly orthogonal fractional factorial experiments (a joint project with Norman Draper of the University of Wisconsin).

Angela Dean and **Bill Notz** are continuing work on construction of designs for multiple response drug comparison trials (with Ph.D. student H.-C. Tsai).

Prem Goel is working on (i) a USDA sponsored project on small area estimation problems in the context of county yield estimates (with **Elizabeth Stasny**), (ii) Poisson limit theorems for dependent variables arising in the context of micro-data file merging (with a Ph.D. student Baoshe An), (iii) combining information to simulate synthetic populations for metropolitan areas in the context of Travel Demand Forecasting (a cross-disciplinary research project at the National Institute of Statistical Sciences) and (iv) wavelet transformations (with Brani Vidakovic,

Duke University). He also completed the Howard Hughes Foundation sponsored project on dynamic graphics software for simulating stochastic models for biological phenomena (with **Mario Peruggia**).

Jason Hsu is interested in graphical representation. He has recently completed a project with **Mario Peruggia** on representing Tukey's multiple comparison method, and is now working with Steven Ruberg of Marion Merrell Dow, on representing bioequivalence measures.

Mark Irwin is working with Augustine Kong and Nancy Cox of the University of Chicago on developing efficient methods for conducting genetic linkage analysis.

Kimberly Kinader works on the geometries of Brownian motion and is currently working on a project in this area with Pat McDonald of OSU.

Rob Leighty (Manager of the Statistical Consulting Service) is collaborating with Vladimir Sloutsky of the Education Department at OSU on two projects modeling intergenerational agreement in the rapidly changing Russian society. He is also collaborating with Nashaat Boutros of the Psychiatry Department at OSU on investigating the usefulness of auditory evoked potentials to help differentiate cocaine-addicted or schizophrenic patients from normal controls.

H. N. Nagaraja continues to work on record values, order statistics, and heart rate variability analysis. During 1994 he collaborated with Valery Nevzorov of St. Petersburg State University, Russia, on record values; with H. A. David of Iowa State University and S. N. Joshi of Indian Statistical Institute on concomitants of order statistics; and with former Ph.D. student Geraldine Baggs (now with Ross Laboratories) on order statistics from bivariate exponential samples. He has also continued his collaborative work with Philip

Binkley, a cardiologist from OSU College of Medicine, and Ph.D. student Srinath Sampath in the AHA sponsored project on modeling heart period variability patterns of congestive heart failure patients.

Bill Notz, Dennis Pearl and Elizabeth Stasny are continuing work on the NSF funded project on computer technology in teaching (with Paul Velleman of Cornell University).

Mario Peruggia is developing Bayesian diagnostics and model selection tools (with Tom Santner and former Ph.D. student Yu-Yun Ho). He has also completed (with **Tom Santner**) a Bayesian analysis of the temporal evolution of seismic events and their magnitudes, using illustrative data from the Italian historical catalog of earthquakes.

Nandini Raghavan is currently developing Monte Carlo methods for assessing posterior-based inference in the logistic regression model when partially improper "smoothing spline" type priors are used.

Tom Santner is working on the design of computer experiments (with **Bill Notz** and Ph.D. student David Donley) and on the development of Bayesian diagnostics.

Elizabeth Stasny is working on the modeling of missing data, especially survey data in relation to juries in death penalty cases (with Jay Kadane of Carnegie Mellon University) and pensions (with Pat Reagan of the OSU Economics Department).

Doug Wolfe is working on various aspects of nonparametric inference. Current projects include inferences about the relative shapes of two or more umbrella patterns (with Guohua Pan of Oakland University), tests for interaction (with Brad Hartlaub of Kenyon College and **Angela Dean**), on a different aspect of interaction tests (with Paul Horn of the University of Cincinnati), and on inference under

parameter restrictions (with Ki-Hoon Lee of Jeonju University, South Korea).

Doug Wolfe and Angela Dean are writing an article for the Handbook of Statistics on nonparametric analysis of designed experiments. **Bill Notz** and Jane Chang (Idaho State University) are also writing an article for the Handbook of Statistics on model robust design of experiments.

Other faculty activities

Mark Berliner will hold the position of Statistics Project Leader at the National Center for Atmospheric Research in Boulder, CO, during the 1995-96 and 1996-97 academic years.

Michael Browne is an Associate Editor for *Psychometrika*.

Prem Goel was the 1994 Program Chair of the Section on Bayesian Statistical Sciences of the ASA. He is also the Chair of the Management Committee of the Current Index to Statistics, jointly sponsored by the ASA and the IMS. As part of his sabbatical leave during 1994-95, he visited the Institute of Statistics and Decision Sciences, Duke University and the National Institute of Statistical Sciences, Research Triangle Park, NC during Fall quarter. He has also been appointed as an Associate Editor of the *Journal of Statistical Planning and Inference* effective Jan. 1, 1995.

Mike Fligner is Director of the Statistical Consulting Service.

Rob Leighty is currently Editor of The Statistical Consultant, a newsletter published by the ASA section on Statistical Consulting.

H. N. Nagaraja serves as the General Clinical Research Center Biostatistician.

Along with D. F. Morrison of University of Pennsylvania and P. K. Sen of University of North Carolina, he is currently co-editing a volume in honor of H. A. David of Iowa State University.

Bill Notz is a member of the ASA/MAA Committee on Education. Bill has also been appointed an Associate Editor of *Technometrics*.

Thomas Santner is Chair of the Department. He has been appointed Editor of the new ASA Contemporary Statistics book series. Tom also acts as consultant to the Hospital for Special Surgery in New York City.

Xiaotong Shen is a member of the IMS New Researchers Committee.

Elizabeth A. Stasny has been appointed to a three-year term as one of the nine members of the Census Advisory Committee. This committee advises the Bureau of the Census on its program as a whole, on policy and procedure particularly relating to statistical standards and methods, and on formulation of priorities. Elizabeth is also an Associate Editor for the *Journal of the American Statistical Association, Applications and Case Studies*.

Joseph Verducci is a member of the Review Board for the *American Journal of Psychiatry*.

Doug Wolfe is an Associate Editor for the *Journal of the American Statistical Association*. He also serves as consultant to the American College Testing Program in the preparation of their Associateship Examinations for the Society of Actuaries, and as consultant/collaborator with Susan Huntington (Department of Art History, OSU) on the statistical analysis of South Asian metal artifacts.

Other faculty news

Steve MacEachern was married on October 15 to Peggy Browne. The wedding was in Columbus. Congratulations!

About the staff

Marcie McGlaughlin was offered a position, which she could not refuse, in the College Office this Autumn. We were very sorry to see her go, but she is still within shouting distance in Denney Hall.

To replace Marcie we hired **Susan Haught** as Administrative Assistant. Susan comes to us from the College of Social Work. She joined the Department a few weeks after Marcie left. It would be an understatement to say that we have kept her busy! We are very pleased to have her.

ABOUT THE GRADUATE STUDENTS

Intramurals

The department volleyball team, consisting of **Nicole DePriest, Michele Wishard, Kathy and Joe Fritsch, John Lawrence, Jeff Hammel, and Kyle Matschke** completed an undefeated regular season this autumn. Unfortunately they failed to repeat as intramural champions, losing in the semi-finals of the

playoffs. Nevertheless, we congratulate them on another great season.

Less successful was the department's flag football team. They have asked to remain anonymous, which should indicate how the season went.

Weddings and Births

Congratulations to the following student newlyweds. **Ramzi Nahhas** married Jill Ellen Johnson on August 27, 1994. **Srinath Sampath** married Suba Varadarajan in India on December 12, 1994. **Peggy Hwang** married Oliver Bautista in the Philippines on December 16, 1994.

Our former Administrative Assistant,

Marcie McGlaughlin, and former Ph.D. student, **Steve Naber**, were married on March 18, 1995. Congratulations and best wishes!

On the family front, **Dave and Denise Donley** became parents of a daughter, **Madison**, on Nov. 26, 1994. **Tim and Aimee Voegtle** became parents of a son, **Aaron Judah**, on August 3, 1994.

CONGRATULATIONS to the following students who earned degrees in 1994!

1994 MAS

Winter 1994

Rebecca Busam
John Lawrence
Dorothy List
Susan McManus
Li-ling Yu

Spring 1994

Maria Baron
Yu Chung
Heng Du
George Eckert
Steven Giust
Manfred Ho
Debra Sitka Huland
Yong-Fong Kuo
Linna Liu
Rita Sengupta
Ray James Steinbacher
Lei Yao

Summer 1994

Belle Chen
Sunmin Park
Mohammed Rahman

Autumn 1994

Jeffrey Cooper
Shawn Shumaker
Yun-San Tsai
Jian Xu
Loucenda Karen Yost

1994 MS

Winter 1994

James Clark

Spring 1994

Amy Crase
Greg Elfring
Glenn Hofmann
Scott Linder
Tiffany Reed
Srinath Sampath
Keith Schleicher
Brian Wynne

Summer 1994

Yuanjie Zhang

Autumn 1994

Brandon Wood
Shanggang Zhou

1994 PhD

Winter 1994

Lie-Jane Kao

Summer 1994

Chris Bush
Jeff Draskoci-Johnson
Yu-Yun Ho
Guohua Pan

Autumn 1994

Maria Geraldine Edralin Baggs

ALUMNI NEWS

Derrick Rollins (MS 1989) was a recipient of a National Science Foundation Presidential Faculty Fellows Award. The award recognizes scholarly activities in both research and teaching. It is given by the President of the United States to no more than 30 faculty, 15 in engineering and 15 in the social sciences, per year. This award includes a grant from NSF of \$100,000 per year for five years. Derrick is currently an assistant professor at Iowa State University with a joint appointment in statistics and chemical engineering. Derrick received his Ph.D. in chemical engineering from OSU in 1990.

Andrew Zhou (Ph.D. 1991) won a FIRST award from NIH. Usually only two or three biostatisticians receive this award annually!

Rita Sengupta (1994) has taken a position as product support coordinator with Trans Union in Chicago, IL.

Yu-Yun Ho (1994) has taken a visiting position with Bellcore Labs in Princeton, NJ.

Lei Yao (1994) has taken a visiting position with Trilogy Consulting Company and is currently working on a project with Warner Lambert in Morris Plains, NJ.

Yuying Zhang (1994) has taken a visiting position with Trilogy Consulting Company.

Nancy Gould (1989) has taken a new position with Novo Nordisk, a Danish pharmaceutical company, in New Jersey. We understand she is also taking lessons to be a pilot!

Debbie Dukovic (Coup) (1987) has taken up a new position with a French pharmaceutical company, Sanofi, at its American offices near Philadelphia, PA.

Geraldine E. Baggs (1994) serves as a consultant to Ross Laboratories in Columbus.

ALUMNI, PLEASE HELP:

In next year's newsletter, we would like to include articles from one or two alumni. Articles might be highlights of recent activities (grants, research, personal), perspectives from an alumni's point of view, or historical notes from less recent graduates. If you would like to contribute something, please contact Bill Notz (e-mail at win@stat.mps.ohio-state.edu).

*** Please keep us up to date on your address and place of employment. We would like to know where all our graduates are and how they are doing. If you know any alumni who have not received a copy of this newsletter, please ask them to drop us a line. You can also e-mail Bill Notz (newsletter editor) at win@stat.mps.ohio-state.edu. ***

If you are on Internet, and have a WWW (World Wide Web) browser, a graphical browser such as Mosaic or Netscape, or a text browser such as Lynx, then you can reach our departmental home page by pointing the URL (Universal Resource Locator) to

<http://stat.mps.ohio-state.edu>

We would like to take this opportunity to survey the connectivity of our alumni. Please send a short note by e-mail to

jch@stat.mps.ohio-state.edu

We should be able to tell quite a bit about your connectivity just by looking at the headers. If, in addition, you can indicate in the body of the message whether you currently have access to WWW through a browser or expect to have such access in the next 6 - 9 months, we will use the information to plan our service over the information superhighway.