

BiosRhythms

SCHOOL OF PUBLIC HEALTH

THE UNIVERSITY OF NORTH CAROLINA AT CHAPEL HILL

Department of Biostatistics

UNC Awarded \$22 Million to Coordinate Hispanic Community Health Study

A \$22 million federal contract to coordinate a nationwide health study of Hispanics in the United States has been awarded to the Collaborative Studies Coordinating Center (CSCC) at the University of North Carolina at Chapel Hill.



Dr. Lisa LaVange The Hispanic Community Health Study will examine the impact of acculturation - adapting to life in a new environment and culture - on the health of the U.S. Hispanic population. The study will identify the prevalence and risk factors (protective or harmful) for a broad range of diseases, disorders and conditions - everything from heart disease to dental cavities. The researchers plan to recruit 16,000 Hispanic adults from groups of origin including Mexican-American, Cuban, Puerto Rican and Central/South American.

“This study will be the most comprehensive assessment of health ever done in this rapidly growing segment of the U.S. population,” said **Dr. Lisa LaVange**, director of the CSCC and one of the principal investigators for the project. “We are thrilled that UNC will be at the forefront of this research.”

The center, which is part of the UNC School of Public Health’s biostatistics department, was selected as the study coordinating center by the National

Heart, Lung, and Blood Institute (NHLBI).

As coordinating center, the UNC project team will be responsible for study design and monitoring, data management and analysis, and coordination of a central laboratory and six reading centers. The UNC center also will provide data quality control and manuscript preparation.

National data show that U.S. Hispanic populations overall have lower mortality rates from heart disease compared to non-Hispanics, but have increased prevalence of obesity and diabetes, according to the institute. Hispanics also have a lower incidence of all types of cancer than blacks or whites, and are less likely to die of cancer. Lifestyle changes associated with U.S. culture - such as nutrition, smoking, role of family and community - could affect these patterns. Data from the study will identify the cultural factors that influence disease development in the Hispanic population.

Study participants will be recruited through four field centers located at San Diego State University in California, Northwestern University in Chicago, Einstein College of Medicine in New York, and the University of Miami in Florida. Each person will receive an extensive clinic exam and health assessment when the study begins. The participants will be interviewed each year for up to four years to see how their health changes

in specific areas that the study is designed to assess. The study results will be shared with communities involved in the study to help improve public health at the local level.

Dr. Lloyd Chambless, UNC research professor of biostatistics, is principal investigator for the coordinating center. Assisting him as co-principal investigators are LaVange and Dr. Gerardo Heiss, UNC professor of epidemiology.

INSIDE *BiosRhythms* 2007

2	Message from the Chair
3	Alumni News
3	Payment Form
5	From the Registrar
5	Departmental Happenings
10	Departmental Grants
14	Faculty & Staff
22	Students
27	Giving

BiosRhythms is published by the
Department of Biostatistics
School of Public Health
The University of North Carolina
at Chapel Hill

~ Editor ~
Cory Hughes
919-966-7250
email:chughes@bios.unc.edu

~ Editorial Board ~

Lawrence Kupper,
Melissa Hobgood, Lisa LaVange, Evie McKee,
Betsy Seagroves, Veronica Stallings,
Chirayath Suchindran

MESSAGE FROM THE CHAIR



The first thing I want to say in this annual report is that I am thrilled to have been appointed Chair of the Department on May 1, 2006. My family, including my wife and two teenage daughters, moved with me to Chapel Hill, North Carolina, from Madison,

Wisconsin, where I have been working as a professor in the Department of Statistics and in the Department of Biostatistics and Medical Informatics since 1992. I received my Ph.D. in Biostatistics from the University of Washington in 1991. My research areas include clinical trials, survival analysis, empirical processes, semiparametric methods, and applications of biostatistics to cystic fibrosis. My number one goal is to build upon, in the best way possible, the incredible past and present scholarly accomplishments of the department in order to further increase our impact and visibility in the fields of Biostatistics and Public Health. The faculty, staff, students and alumni of this department are truly first rate, and it is an honor for me to be associated with all of you.

I also want to announce that, as of December 1, Professor Jianwen Cai became Associate Chair. She has been a faculty member in the Department since 1992 and served as Interim Chair between January 1 and April 30, 2006.

This past year, as with previous years, has been extremely successful for the Department. We welcomed 32 new graduate students and seven new BSPH students to our program in August. We also had eight new postdoctoral fellows join our program. We are very pleased that many bright, young scholars are interested in the field of biostatistics and our department in particular. Students bring a tremendous sense of vitality and purpose to the department which we are always appreciative of.

We have also added several new faculty members this past year. Dr. Hongtu Zhu is an Associate Professor who joined us August 1, after having been an Assistant Professor at Columbia University. Dr. Zhu will be working in the UNC Biomedical Imaging Research Center and is a nationally recognized expert in statistical methods for the analysis of medical imaging data. Dr. Zhu received his Ph.D. in Statistics from the Chinese University of Hong Kong. Dr. Brian Neelon joined us July 1 as a Research Assistant Professor. He received his Ph.D. in Biostatistics from our department in 2005, where his thesis was on Bayesian order restricted inference. Dr. Neelon will be

working with the UNC Center for Health Promotion and Disease Prevention.

We also have several new staff members. Katy Tarter, Ashley Bizzell, Niantao Jiang, Pingping Wu, Dana Edelen, Nathan Swick, Forrest DeMarcus, Bryan Elliott, Janice Brahms-Butler, Franklyn Gonzalez are at the Collaborative Studies Coordinating Center (CSCC), Matthew Minnotte at SRU, while Zhen Li is working with Professor Fred Wright.

Alumni Distinguished Professor Larry Kupper has received the prestigious appointment of Chair of the UNC Appointments, Promotions and Tenure (APT) Committee for the academic year 2006-2007.

Professor Joe Ibrahim was awarded the prestigious rank of Alumni Distinguished Professor on March 1, 2006. Dr. Ibrahim was recognized for his outstanding international leadership in Biostatistics, especially for contributions in Bayesian methods in biostatistics, genomics, missing data methods, cancer research, and in many other important areas.

Four faculty members were promoted this year. Drs. Amy Herring and Anastasia Ivanova were both promoted to Associate Professor, and Drs. Diane Catellier and Michael Hudgens were both promoted to Research Associate Professor. All were recognized for their outstanding contributions - Amy, for missing data methods and collaborative reproductive and environmental epidemiologic research; Anastasia, for design and for categorical data methods; Diane, for public health research in violence prevention and women's health; and Michael, for statistical methods for infectious disease research, especially in the area of AIDS research.

Regrettably, Dr. Petra Buzcova, Research Assistant Professor, and Dr. Keith Muller, Professor, have resigned from their positions in the Department. Dr. Buzcova has been working in the Lineberger Cancer Center and leaves to spend more time with her family. Dr. Muller has now accepted a position as Professor and Director of the Division of Biostatistics in the Department of Epidemiology and Public Policy, School of Medicine, University of Florida (Gainesville). Dr. Muller will continue with us as an Emeritus Faculty at UNC.

We announce the retirements of Drs. Craig Turnbull and Michael Symons. Dr. Turnbull retired on July 31, after over 30 years of service with the Department. After joining

the Department in 1971, Dr. Turnbull organized the BSPH program in 1975 and has been the Director for the program ever since. Dr. Symons retired December 31, also after over 30 years of service. Dr. Symons joined the Department in

1969 and has been a strong advocate of the teaching of statistics ever since that time. He was also an Associate Editor for the *Journal of the American Statistical Association*. Both Drs. Turnbull and Symons leave with us a legacy of teaching and influence on the profession for which we are grateful.

The research program in Carolina Biostatistics continues to flourish. This year the faculty brought in almost \$9 million in externally funded research grants. I am particularly pleased that we currently have 17 federally funded grants. I am especially pleased to announce that a \$22 million federal contract to coordinate a six year, nationwide health study of Hispanics in the United States has been awarded to the CSCC. Dr. Lloyd Chambless, UNC Research Professor of Biostatistics, is principal investigator for the coordinating center. Assisting him as co-principal investigators are Dr. Lisa LaVange, Professor of the Practice of Biostatistics and Director of the CSCC, and Dr. Gerardo Heiss, Professor of Epidemiology.

The publication record of the faculty has also been excellent in terms of both public health research and biostatistical methods. In the last few years, the faculty have been averaging around 20 or so publications per year in the leading biostatistical and statistical journals (Biometrics, Biometrika, the Journal of the American Statistical Association, the Journal of the Royal Statistical Society, Series B, and the Annals of Statistics). This number is one of the largest of any Biostatistics Department. As one example, Drs. Danyu Lin and Donglin Zeng published a very influential discussion paper in the Journal of the American Statistical Association on theory and methods for the analysis of haplotype effects in genetic association studies. As another example, Dr. John Preisser was the lead biostatistician on a study on reducing the impact of green tobacco sickness among latino farm workers. This study received the 2006 National Occupational Research Agenda Innovative Research Award. The overall scholarly contributions of the Department represent a remarkable achievement and one of which we can all be proud.

With warmest regards,
Michael

Schaubel Receives Grizzle Award

Dr. Doug Schaubel, (PhD '99), is the 2005 recipient of the James E. Grizzle Distinguished Alumni Award. Dr. Jianwen Cai, professor and associate chair, presented the award at the Bios Alumni Day held on Monday, April 3, 2006. Dr. Schaubel received his PhD from the department in 2002 under the direction of Dr. Jianwen Cai. Since his graduation, he has been on the faculty in the Department of Biostatistics at the University of Michigan. He has authored over 50 peer-reviewed journal articles and one book chapter and is the principle investigator for a statistical methodology R01 grant from the National Institutes of Health. He has also been very involved in kidney research at the Kidney Epidemiology and Cost Center (KECC) and the University Renal Research and Education Association (URREA). Dr. Schaubel presented a lecture following the awards ceremony titled "Sequential Stratification Methods for Estimating the Effect of a Time-Dependent Experimental Treatment in Observational Studies."



Dr. Doug Schaubel

The award was established to honor Dr. James E. Grizzle, former department chair, for his outstanding contributions to biostatistical research and consulting. The award is presented to a graduate of the University of North Carolina Department of Biostatistics in recognition of an outstanding record in the development of new statistical methodology and in the application of statistical methods to important public health problems. Evidence of an outstanding record is measured by the quality and quantity of peer-reviewed publications in both statistical and subject-matter journals. The intent of the award is to recognize and encourage rising stars in the field of biostatistics.

Student Organization Needs You

As of Fall 2006, the Biostatistics Student Organization (BSA) is back up and running. This year's officers are Virginia Pate, President; Annie-Green Howard, Vice-President; Allison Deal, Secretary; and Dustin Long, Treasurer. BSA members have planned numerous student social events and had a t-shirt fundraiser and are trying to improve student involvement by placing students on departmental committees and encouraging community service with Habitat for Humanity and Toys for Tots. A current fundraiser is the sale of travel coffee mugs. If you are interested in purchasing a mug or would like to make a donation to the BSA, please use the form below. If you have any questions or ideas for the BSA, we'd love to hear from you.

Biostatistics Travel Mugs For Sale!

16 oz. Stainless Steel Travel Mug, "UNC Biostatistics" imprinted in Carolina Blue

\$10.00 per Mug, \$5.00 Shipping for the first Mug, \$2.50 each additional Mug

(If you would like to pick up your mug or if you have any questions, contact dustinl@email.unc.edu.)

Name: _____

Email: _____

Address: _____

Please Make Checks Payable to:

Biostatistics Student Association

Mail this form and payment to:

UNC-Chapel Hill

Department of Biostatistics

Attn: Melissa Hobgood

3103 McGarran-Greenberg, CB#7420

Chapel Hill, North Carolina 27599-7420

I would like to make a tax-deductible donation to BSA in the amount of \$ _____. My separate check is enclosed.



ALUMNI NOTES

Steve Wisseh, (DrPH, '00), was in India for more than six months in 2005-06 to help develop a Phase IV biostatistics group as part of an international assignment program.

Travis Che Jarrell, (BSPH, '98), has completed UC-San Diego's Master's of Pacific International Affairs advanced degree program. He has been actively cultivating the linkages between his previous clinical trial data management/analysis work experience, his BSPH degree and his newly acquired advanced degree via a career in biomedical research regulatory affairs.

Kenneth M. Portier, (PhD, '79), has accepted the position of Program Director, Statistics at the American Cancer Society, (ACS) national home office in Atlanta where he will work primarily in the area of quality of cancer care and survivorship research. He leaves behind an academic career spanning 27 years at the University of Florida. In addition to new responsibilities at ACS, he continues as member of the U.S. Environmental Protection Agency Federal Insecticide, Fungicide and Rodenticide Act (EPA FIFRA) Science Advisory Panel which reviews environmental risk issues for the Agency and serves on a USEPA Science Advisory Board on arsenic risks and a National Toxicology Program review panel on Bisphenol A.

Frank Ye, (PhD '00), and **Jean Pan**, PhD '05, are both working for Amgen in California. Frank is a director in quality engineering and Jean is a manager in biostatistics. Their daughter, Connie, is a happy second-grader and a UNC fan just like her parents.

Phillip D. Simmons, (MS '91), was promoted in August 2006 to executive director of biometrics at Kos Pharmaceuticals in Weston, Florida. In this role, he is responsible for the statistical analysis of all clinical and pre-clinical studies conducted at Kos. Phillip would love to hear from people. Call him at 954-331-3496 or e-mail him at psimmons@kospharm.com.

Alumnus Named President-Elect of ENAR

The Eastern North American Region (ENAR) has named **Eric J. "Rocky" Feuer** (PhD, '83) as the new president-elect of ENAR. He will serve as president-elect for one year, beginning in January 2007, before taking office as president in 2008. Dr. Feuer will preside over the annual meeting in March 2008.

Feuer received his PhD in biostatistics from UNC-Chapel Hill in 1983. He currently serves as chief of the Statistical Research and Applications Branch at the National Cancer Institute. His research has focused on evaluating and developing new cancer progress measures, modeling the impact of cancer control interventions on the cancer burden, and developing statistical methods for the analysis, interpretation, and presentation of national cancer statistics. He is the author of more than 75 peer-reviewed publications.

ENAR is the largest region of the International Biometric Society (IBS), an international society for the advancement of biological science through the development of quantitative theories and the application, development, and dissemination of effective mathematical and statistical techniques.

DEPARTMENTAL HAPPENINGS

From the Registrar:

Happy New Year! I hope 2006 was a great year for you all! A lot has happened around here. Dr. Kosorok has taken his post as chair of the Department, so we are under new leadership. We have had a couple of faculty move on to bigger things, sharing their Carolina pride and experience with other institutions. A couple of long-time faculty have decided to try their hand at rest and relaxation. As for the rest of us, we are happily working to make sure things run smoothly. Be sure to check out the [Alumni News](#) section to see what our graduates have been up to. I must say that you do stay busy! Thanks to those who contributed to [Alumni News](#). If you missed the opportunity this year, we would love to hear from you in 2007. In an effort to stay in touch with our alumni, we ask that you keep your information updated at http://www.sph.unc.edu/alumni/alumni_directory.html, including your e-mail address.

ENAR and ASA are still in the planning stages. Please continue to check the Department's Web page for more information (www.sph.unc.edu/bios).

Best wishes for a great 2007!

Warmest regards,
Melissa Hobgood

Upcoming Events

ENAR: Hyatt, Regency Hotel, Atlanta, GA, March 11-14, 2007. Reception on March 12 at 5:30 p.m.

2007 Greenberg Lecture: Dr. Tom Fleming, Professor of Biostatistics, University of Washington, May 9 - 11, 2007

ASA: Salt Lake City, UT, July 29-August 2, 2007. Please visit www.amstat.org/meetings/jsm/2007.

2007 ENAR Annual Meeting

The 2007 ENAR annual meeting will be held March 11-14 at the Hyatt Regency Hotel in Atlanta. Professor and alumna Lisa LaVange, 2007 ENAR president, and Associate Professor Amy Herring, 2007 program chair, have planned a terrific meeting. Associate Professor and alumnus John Preisser, representing the ASA biometrics section on the program committee, also has worked hard to ensure a great invited program. The continuing education program consists of six short courses and four tutorials, including a short course on missing data methods by Alumni Distinguished Professor Joe Ibrahim and a tutorial on haplotype analysis by Dennis Gillings Distinguished Professor Danyu Lin. A workshop on diversity in biostatistics will be held on Sunday. The Tuesday evening social event will feature dinner in a nearby historic landmark in downtown Atlanta, with entertainment provided by former UNC Bios professor, Dave Kleinbaum, and his jazz band. The invited program expertly organized by Amy and her committee can be viewed on the ENAR website (www.enar.org), where meeting registration is also available. Alumni and friends are welcome at the meeting and at the annual departmental reception, which will be held in the Hyatt Regency on Monday night at 5:30 p.m. Details on this and all alumni events can be found at www.sph.unc.edu/bios.

DEPARTMENTAL HAPPENINGS

Mourning a Loss



“We are saddened to report the death of a distinguished colleague, Dr. James Hosking, research associate professor and associate director of the Collaborative Studies Coordinating Center (CSCC) in the Department of Biostatistics,” said Dean Barbara Rimer. Jim passed away at home on January 25, 2007 under Hospice care. Our hearts are with his wife Jerry, his son Michael, who is a senior here at UNC, and his mother, Georgia.

Jim received a PhD in quantitative psychology at UNC in 1980 and was hired immediately as an assistant professor in biostatistics. He became research associate professor in 1986 and associate director of the CSCC in 1991.

Dr. Lisa LaVange, Director of the CSCC, told us that Jim was responsible for designing many of the information systems and processes now in use at the Center, including the earliest remote data entry system used by any NIH coordinating center. “Over the 25 years he worked in the department,” she says, “he was a remarkable colleague and a true visionary. He will be greatly missed.”

Jim will be remembered for his insightful advice on the scientific and statistical aspects of study design and analysis, and his cutting edge ideas for advancing clinical trial data management systems. He was Principal Investigator for a number of pivotal studies that have influenced the current thinking about disease and health and have led to improvements in medical practice.

One of these studies, Combining Medications and Behavioral Interventions for Alcoholism (COMBINE), was designed to determine which combinations of behavioral and pharmacologic therapies are most likely to help alcoholic patients stay in treatment, remain abstinent or reduce their drinking and improve their quality of life. Jim was Principal Investigator for the COMBINE coordinating center and played a key role in the design, conduct and analysis of this study, particularly for the primary outcome manuscript that was published in *JAMA* in May 2006. Alcoholism is a complex disease, and the COMBINE Study has provided the field of alcohol treatment research with a rich dataset to use in investigating how genetics, drinking history and other factors influence response to treatments.

Jim was also coordinating center Principal Investigator for the first clinical trial to test whether intervening on depression and low social support after a heart attack reduces future risk of heart attack and mortality (“Enhancing Recovery in Coronary Heart Disease Patients,” or ENRICHED). The results of this landmark study appeared in the *JAMA* in 2003, and the trial data continues to be mined for answers to new questions about this challenging and important health problem.

In lieu of flowers, the family suggests donations in Jim’s memory be made to the Department of Biostatistics - CSCC. These funds will be used in support of training and travel expenses for staff to increase their growth and development in the field of clinical trials research. Contributions should be sent to CSCC, 137 E. Franklin Street, Chapel Hill, NC 27514 to the attention of Lisa LaVange. Alternatively, you may support the UNC Hospice at 480 Hillsboro Street, Suite 800, Pittsboro, NC 27312 in Jim’s memory.

The funeral was held on Monday, January 29, at 2 p.m. at University Methodist Church, 150 East Franklin St., Chapel Hill.

Cai Selected as Associate Chair



Jianwen Cai has been named the new associate chair of the Department, effective December 1, 2006.

Dr. Cai, professor of biostatistics, has been a member of the School's faculty since 1992. Her research interests include survival analysis, design and analysis of clinical trials, analysis of correlated responses, cardiovascular disease, obesity and cancer research. She is an elected Fellow of the American Statistical Association and has more than 80 peer-reviewed publications. She currently serves as associate editor for two statistical journals.

A native of Qingdao, China, Cai received her bachelor's degree in mathematics from Shandong University in Jinan, China. She earned a master's degree (1989) and PhD (1992) in biostatistics from the University of Washington.

Kupper Steps Down as Program Director



Since the early 1970s, the Department of Biostatistics has maintained an extremely successful predoctoral and postdoctoral training program in environmental biostatistics. The first 5-year NIEHS-funded predoctoral training program in biostatistics began July 1, 1971. When Dr. Bernard G. Greenberg became dean of the School of Public Health in July 1972, Dr. Lawrence L. Kupper, Alumni Distinguished Professor, became the new Program Director. He held that position until June 30, 2006 when he stepped down after thirty-four years of distinguished service. Dr. Amy Herring, associate professor, became the new program director, effective July 1.

The program, responsible for training an extraordinary number of master's, doctoral and postdoctoral students in environmental biostatistics, can boast of many graduates in important positions in academia, government and private industry. Currently, the program funds 31 predoctoral and 3 postdoctoral students in biostatistics, epidemiology, and environmental sciences and is one of the largest NIEHS-funded training programs in history. We hope to continue this strong training program for many years to come.

Stewart's Paper Receives Recognition



Dr. Paul Stewart, research associate professor, co-authored a publication that was listed as #1 on a list of the "50 Most Frequently Read Articles" accessed from the Web site of the Journal of the American Medical Association during July 2006. The article, titled *Aminotransferase Elevations in Healthy Adults Receiving 4 Grams of Acetaminophen Daily: A Randomized Controlled Trial*, can be found at <http://jama.ama-assn.org/cgi/content/abstract/296/1/87>.

DEPARTMENTAL HAPPENINGS

2006 Biostatistics Golf Tournament



A great time was had on Sunday, October 1, 2006, when four foursomes of students, faculty, staff, alumni and families played in the 14th annual Biostatistics Superball Golf Tournament at Hillandale Golf Course in Durham. The weather could not have been better with clear Carolina blue skies and temperatures in the low 70s.

Coming in fourth place with a total score of 75 (+4) on the par-71 course, was the team of Dustin Long, Denise Esserman and brothers Cralen and Crasten Davis. An unfortunate double bogey on the first hole put the team into a tough situation, early on. Denise won a sleeve of balls by winning a closest-to-pin contest on a par-3. In third place with a 71 (E) was the team of Brian

Armstrong, John Kairalla, and husband and wife duo Jim Chao and Meimei Ma. The team carded two birdies and two bogeys for the round. Scoring a 68 (-3) and losing out in an intense card match tie-breaker was the second place team of Bill McGee, Jamie Powers, Lisa LaVange and David Hill. David, a self proclaimed par-3 specialist, also took home two sleeves of balls for winning a pair of closest-to-pin contests. Finally, winning the tie-breaker with a 68 (-3) was the team of Larry Kupper, Ed Davis, Ryan May, and Justin Lofling. The winning shot turned out to be an incredible birdie putt from off the green by top seeded Larry Kupper who also won a closest-to-pin contest. By winning the tourney, team Kupper/Davis did little to lessen the calls of a “stacked team.” No credible evidence was given for this accusation besides the point that “any team with Larry on it seems suspicious.” There were no losers with everyone winning nice Carolina hats and enjoying food and drinks, courtesy of the Department.

SAS Workshop

Bayesian Analysis Using the SAS System
May 17-18, 2007, Carolina Club, Chapel Hill, NC

The UNC Department of Biostatistics and SAS Institute are proud to announce a workshop in Bayesian biostatistics that will cover the generalized linear model and survival analysis. Led by Joseph G. Ibrahim, Alumni Distinguished Professor of biostatistics, the workshop will provide an introduction to Bayesian methods in these areas as well as practical examples using upcoming new software in SAS. The target audience includes practicing biostatisticians and other public health researchers at the MS or PhD level in the pharmaceutical industry, in consulting, and in government or academics. No prior knowledge of Bayesian methods will be assumed; some familiarity with SAS will be useful. Additional details will be posted at www.sph.unc.edu/bios/ as they become available. Feel free to contact members of the organizing committee with questions: (Dr. Lisa LaVange, Amy Herring, Joe Ibrahim, and Maura Stokes). Please mark your calendars and plan to join us for this exciting event!

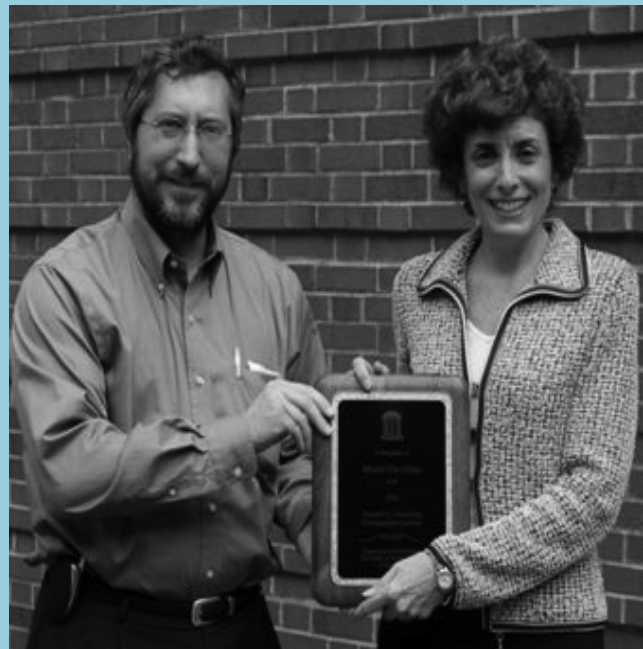
The ARIC Study will be celebrating 20 years of research

The Atherosclerosis Risk in Communities (ARIC) Study, a prospective epidemiologic study conducted in four U.S. communities will be celebrating 20 years of ongoing research this spring. The Department's collaborative studies coordinating center (CSCC) has served as the ARIC coordinating center since 1986 and has obtained contracts for UNC amounting to more than \$26 million dollars since the first contract was awarded in 1985. The study has screened a cohort of 15,792 participants who have received annual follow-up from the beginning and has conducted community surveillance of heart disease in the four communities of the ARIC study. The most recent contract is funded through January 31, 2012. Watch for news about an event to celebrate ARIC's 20th anniversary.

Davidian Gives 2006 Bernard G. Greenberg Lecture Series Speaker

The 2006 Bernard G. Greenberg Distinguished Lecture Series was held May 17-19, 2006, with Dr. Marie Davidian, as the keynote speaker.

Dr. Davidian received her PhD from the Department of Statistics at the University of North Carolina at Chapel Hill in 1987, under the direction of Raymond J. Carroll. Her research interests include mixed effects models, longitudinal data analysis, covariate measurement error, missing data, and analysis of assay data and calibration. She is professor of statistics at North Carolina State University and adjunct professor of biostatistics and Bioinformatics at Duke University. She spends one day per week at the Duke Clinical Research Institute, collaborating on problems in cardiovascular disease research.



The lecture series included four talks over the 3-day event.

- 1) *What's In Between Dose and Response? Pharmacokinetics, Pharmacodynamics, and Statistics;*
- 2) *Semiparametric Estimation of Treatment Effect in a Pretest-Posttest Study;*
- 3) *Inference for Dynamic Treatment Regimes in Two-Stage Clinical Trials; and,*
- 4) *Some New Methods for Latent Variable Models and Survival Analysis.*

Than annual lecture series is named in honor of Bernard G. Greenberg, founding chair of the Department and former dean of the School of Public Health.

DEPARTMENTAL GRANTS

Preisser Leads Stats on Award-Winning Immigrant Research



Research Associate Professor **John Preisser** was the lead biostatistician on an award-winning research project on migrant farm workers. The study “Reducing the Impact of Green Tobacco Sickness Among Latino Farm Workers” was the recipient of the 2006 National Occupational Research Agenda (NORA) Innovative

Research Award (<http://www.cdc.gov/niosh/nora/symp06/award06.html>). The NORA Liaison Committee, in cooperation with the National Institute for Occupational Safety and Health (NIOSH/CDC), presented the award at the fifth biannual NORA Symposium in Washington, DC on April 18-20, 2006 to Thomas Arcury and Sara Quandt, principal investigator (PI) and co-PI of the project, respectively, and Professors in the Wake Forest University School of Medicine. This was the first time NIOSH gave the award, and Preisser and colleagues were surprised that it went to a project dealing with immigrant workers.

Green Tobacco Sickness (GTS) often affects farm workers who handle wet tobacco leaves and may lead to symptoms such as dizziness, nausea, and vomiting that can lead to life-threatening dehydration. Latino tobacco workers are especially at risk since they supply the majority of the tobacco labor in the US. The epidemiological study conducted in eastern North Carolina was the first to document the prevalence of symptoms in a cohort of farm workers, and to examine cases in depth to determine risk factors for illness. The result was the first body of scholarly work on GTS epidemiology and the production of culturally appropriate education materials for both farm workers and medical personnel who treat GTS. Some of the statistical challenges addressed by Dr. Preisser and colleagues included establishing a case definition of GTS, consideration of high attrition rates, and handling of clustered data. The research resulted in eleven peer-reviewed scientific articles on GTS co-authored by Dr. Preisser, among these, a 2003 paper in the American Journal of Epidemiology for which he was the principal author, “Detecting Patterns of Occupational Illness Clustering with Alternating Logistic Regressions Applied to Longitudinal Data.”

CSCC Receives Extended Contract



The Collaborative Studies Coordinating Center (CSCC) has been awarded a contract for \$10,313,108 to extend the National Heart, Lung, and Blood Institute’s (NHLBI) Atherosclerosis Risk in Communities (ARIC) study through January 31, 2012 for community surveillance, cohort annual follow up, cohort morbidity

and mortality follow-up, laboratory analyses, and scientific publication of results. The Principal Investigator for the ARIC Coordinating Center is **Lloyd Chambless**, Research Professor in the Department of Biostatistics. Other faculty participation includes David Couper (Biostatistics), Wayne Rosamond and Gerardo Heiss (Epidemiology), and Patty Chang (Medicine).

ARIC is designed to measure the incidence of coronary heart disease (CHD) in four diverse U.S. communities and to identify factors associated with atherosclerosis and new CHD events in middle age. The community surveillance component includes 315,000 residents aged 35 to 74. The cohort component includes a sample of 15,792 men and women aged 45 to 64 who received four triennial clinical examinations. Field work for both components began in 1987. Findings have been presented in nearly 450 publications to date.

This contract extension will continue coronary heart disease (CHD) surveillance in the four ARIC communities, permitting detection of incidence trends in race and sex subgroups through 2009, extend the age range for community surveillance of CHD to ages 75 - 84 for events occurring in the years 2005- 2009, initiate community surveillance of inpatient heart failure in the defined ARIC communities (ages 55 and older) for events occurring during years 2005 - 2009, continue follow up of the ARIC cohort for CHD, stroke, and heart failure morbidity and mortality for events occurring 2005 - 2009, and continue to analyze stored blood, urine, and DNA samples from available subclinical disease cases, available and newly occurring CHD, stroke, and heart failure cases and control subjects from the ARIC cohort for both traditional and novel risk factors.

DEPARTMENTAL GRANTS



Dr. Fei Zou, Assistant Professor of Biostatistics, has been awarded a new four-year R01 grant entitled “Robust Methods for Complex Trait Association Mapping” from the (National Institutes of Health.) Total dollar amount of this grant is \$817,600. The main objectives of

the project are to address statistical issues related to association mapping for complex genetic traits, such as those associated with common human diseases. Dr. Zou and Dr. Fred Wright, co-investigator of the project, plan to develop robust, yet efficient statistical methods to deal with some important statistical problems that have not been addressed or fully resolved in the field.

Dr. Michael Hudgens, Associate Professor of Biostatistics, has received two grants on “Optimal Group Testing Procedures for Detection of Acute HIV.” The first grant is an R03 awarded by the National Institute of Allergy and Infectious Diseases, 2/1/06 - 1/31/08, \$143,862. The second grant is a Center for AIDS Research (CFAR) Development Award in the amount of \$20,000 for a period of one year.

This grant proposes to research group testing methodology to help optimize the pooling protocol used in the STAT program and to assist in extending this innovative approach to other settings or detection of other infectious diseases where the overriding issues are identical but the specific conditions vary considerably. Pooling of specimens to increase efficiency of screening for individuals with rare diseases has a long history, dating back to screening of syphilis in military inductees in the 1940s. Over the years, specimen pooling or “group testing” has been applied in entomology, genetics, international trade, the pharmaceutical industry, computer science, analytical chemistry, and many other areas. Currently the HIV/STD Prevention and Control Program in North Carolina and investigators from the University of North Carolina at Chapel Hill employ specimen pooling as part of the Screening and Tracing Active Transmission (STAT) program to detect individuals recently infected with HIV (Pilcher et al., JAMA 2002).

Dr. Mayetri Gupta, Assistant Professor, is serving as a consultant for a new grant awarded by the North Carolina Biotechnology Center titled “Regulation of Nucleosome Stability as a Mediator of Chromatin Function.” Dr. Brian D. Strahl, Assistant Professor in Biochemistry and Biophysics, is the Principal Investigator of this two year project. The funding dollar amount is \$315,360 over the two year period. An interdisciplinary approach has been proposed to address this issue that combines genetic, biochemical, cytological and biophysical experiments with the use of multiscale computational modeling of nucleosomal chromatin.

Dr. Hongtu Zhu, Associate Professor of Biostatistics, is the principle investigator for a new grant from the National Science Foundation. This grant is titled “Diagnosing Statistical Models for Longitudinal and Family Data” and will be funded for three years. Total dollar amount for the three years is \$135,000. The primary goal of this project is to develop, evaluate, and apply new statistical methodology to the analysis of longitudinal and family data. The specific aims from a methodological perspective are: (1) Development of a local influence approach for assessing parametric and semiparametric models; (2) Development of first-order and second-order residual diagnostics for assessing the mean and covariance structure of parametric and semiparametric models; (3) Development of diagnostic tools for assessing empirical likelihoods, and (4) Development of score test statistics for selecting random effects components and testing parametric functions in semiparametric models.

Dr. Michael Kosorok, Professor and Chair of Biostatistics, has won a competing renewal of his R01 grant entitled “Semiparametric and Empirical Process Methods in Oncology.” This grant is funded for 3 years for a total dollar amount of \$651,222. The long-term goal of the project is to develop flexible semiparametric analysis tools for clinical, epidemiological and basic science studies in oncology. The grant was first funded July 1, 1997 by the National Cancer Institute and is currently funded through June 30, 2009.

DEPARTMENTAL GRANTS

Dr. Joseph Ibrahim, Alumni Distinguished Professor, has been awarded funding by the National Institute of General Medical Sciences for the renewal of his grant titled “Bayesian Approaches to Model Selection for Survival Data.” This grant is being funded for a total of \$759,854 over the next three years. The specific objectives of this project are to: (1) develop statistical models, Bayesian methodology, and computational methods for discovery of gene regulatory networks; (2) develop a class of hierarchical models for phylogenetic inference in the presence of fragmentary sequence alignments; (3) develop new classes of models and computational methods for expression trait loci detection; (4) develop Bayesian joint semiparametric models for analyzing cDNA gene expression data and time-to-event data; and (5) examine Bayesian hierarchical models and gene selection algorithms for analyzing time course microarray data.

Dr. Anastasia Ivanova, Associate Professor in Biostatistics, has been awarded a new R01 grant titled “Current Design Issues in Oncology Trials.” This grant will be funded for 3 years by the National Cancer Institute for \$540,424. Dr. Ethan Lange will serve as Co Investigator. The objectives of this research are to develop adaptive designs for dose-finding clinical trials and sequential designs for association studies in genetics. Research projects are motivated by clinical trials at the Lineberger Comprehensive Cancer Center (LCCC). Dr. Ivanova has been involved in the design and analysis of clinical trials at the LCCC since she joined UNC in 1999.



Adolescent Girls More Active if Neighborhoods have Parks



The University of North Carolina at Chapel Hill researchers recently conducted a study of the association between park proximity and park features and physical activity in adolescent girls. The study was funded by the National Heart, Lung, and Blood Institute of the National Institutes of Health, and lead by the RAND corporation. **Dr. Diane Catellier**, a study investigator and research associate professor of biostatistics in the UNC School of Public Health, said that physical activity was higher for girls who lived within a mile of parks and showed highest levels among girls who lived less than one-half mile from a park.

The results appear in the November 2006 issue of *Pediatrics*. Researchers from UNC-Chapel Hill, the University of Arizona, the University of South Carolina and San Diego State University participated.

On average, girls got about 16 minutes of intense physical activity per day, but those with access to a park in their neighborhood engaged in 6-10 minutes more than those who did not. “Given that national guidelines recommend that children and adolescents get at least 60 minutes of exercise a day, we see that we still have a long way to go in encouraging girls to be more active,” Catellier said.

To examine the relationship between parks and physical activity, the researchers used baseline data from the Trial of Activity for Adolescent Girls. The study team used accelerometers to track 1,556 girls in the sixth grade in six cities and counted the average number of public parks within a half-mile radius of the homes of girls in the cities.

The study suggests that communities should make parks a higher priority, particularly ones with amenities like running tracks or walking paths, Catellier said.

COMBINE Study

In 2001 the National Institute on Alcohol Abuse and Alcoholism (NIAAA) of the National Institute of Health launched “Combining Medications and Behavioral Interventions for Alcoholism” (COMBINE) to identify the most effective current treatments and treatment combinations for alcohol dependence. The largest clinical trial ever conducted of pharmacologic and behavioral treatments for alcohol dependence, COMBINE was carried out at 11 academic sites that recruited and randomly assigned 1383 recently abstinent alcohol-dependent patients to one of nine treatment groups.

The Collaborative Studies Coordinating Center (CSCC) served as the data coordinating center for the COMBINE study under the direction of **Dr. James Hosking**, research associate professor of biostatistics. Assisting him are Dr. David Couper, research associate professor of biostatistics, Dr. James Garbutt, professor of psychiatry; and Marston Youngblood, biostatistician/supervisor. Funding started in 1998, with the early years used to finalize the study design, develop study procedures, including the behavioral interventions; and conduct two pilot studies.

During the 16 weeks of treatment and for one year after the treatment, the researchers assessed patients for the percentage of days abstinent from alcohol; length of time to the first heavy drinking day; and the odds of good clinical outcome, defined as abstinence or moderate drinking without alcohol-related problems. As in other large clinical trials, the researchers found that most patients showed substantial improvement during treatment and that both the overall level of improvement and the differences between treatment groups diminished during the follow-up period. However, the COMBINE study showed that naltrexone continued to provide a small advantage for preventing relapse at one year after the end of active treatment.

“These results [of the COMBINE study] demonstrate that either naltrexone or specialized alcohol counseling—with structured medical management—is an effective option for treating alcohol dependence,” said Mark L. Willenbring, MD, director, of NIAAA’s Division of Treatment and Recovery Research. “Although medical management is somewhat more intensive than the alcohol dependence interventions offered in most of today’s health care settings, it is not unlike other patient care models, such as initiating insulin therapy in patients with diabetes mellitus. Medical model’s application in primary care and general mental health care settings would expand access to effective treatment dramatically, while offering patients greater choice.”

“NIAAA continues to explore new treatment tools in more than 50 current medication trials, studies to better understand the mechanisms of action in behavioral treatments, and our search for new molecular targets and novel compounds for clinical testing,” according to Raye Z. Litten, PhD, COMBINE’s government director and co-leader of NIAAA’s medications development team.

FACULTY & STAFF NEWS

Ivanova Receives Merck Schor Scholarship

Dr. Anastasia Ivanova, Associate Professor in Biostatistics, has been awarded the Schor scholarship by Merck Research Laboratories. The Stanley S. Schor Visiting Scholar Program invites distinguished biostatisticians, health economists, epidemiologists, and health service researchers to spend a period of 6 -12 months at Merck Research Laboratories. Dr. Ivanova will work with Merck's research team on adaptive designs for clinical trials run by Merck. She will be working from Chapel Hill with several visits to Merck's campus located in Rahway, NJ. The scholarship will last for one year.

Kosorok Elected ASA Fellow

Chair and Professor Michael Kosorok, Ph.D., has been elected as a Fellow of the American Statistical Association. He received the award at the Joint Statistical Meeting in Seattle, Washington in August, 2006. Dr. Kosorok was elected for theoretical and applied contributions to empirical processes and semiparametric methods, particularly in event-time analysis, clinical trials, and microarray analysis, and for statistical methods for cystic fibrosis research. A superlative honor for 92 years, fellowship in the ASA recognizes outstanding professional contributions in the field of statistical science.

Kupper Elected Chair of the UNC Appointments, Promotions, and Tenure (APT) Committee

Lawrence "Larry" Kupper, PhD, Alumni Distinguished Professor in the Department of Biostatistics, has been elected chair of the UNC Appointments, Promotions and Tenure (APT) Committee for the 2006-07 academic year. The committee reports directly to the provost concerning all tenure-related appointment and promotion decisions and issues for the entire UNC campus. This is Kupper's fourth year of service on the University-wide committee, and current members chose him unanimously to serve as chair. He previously has served as a member and chair of the APT committee at the School of Public Health.

Monaco Named Director of Undergraduate Studies

The BSPH in Biostatistics Program continues to educate talented undergraduates interested in applying their quantitative abilities to health-related topics. Dr. Jane Monaco is serving as the Director of Undergraduate Studies following the retirement of Dr. Craig Turnbull.

Jane is a graduate of UNC-CH (MS '89 in mathematics, MS '98 in biostatistics, DrPH '03 in biostatistics) and joined the faculty in 2004 as a Clinical Assistant Professor. She has previously worked in the departments of epidemiology at the Wake Forest University School of Medicine and the American Cancer Society in Atlanta. She enjoys teaching statistics and mathematics having taught at NCSU and UNC-Chapel Hill.

"Directing the BSPH Program in Biostatistics is a great honor and wonderful opportunity. I am fortunate to be advising this group of talented undergraduates. Recruiting, retaining and educating top students is rewarding and challenging. This year's graduates are an outstanding group. They are leaving our department well-equipped for their next goals including graduate school, medical school, careers in biostatistics and careers in other fields." said Dr. Monaco.

Ibrahim named Alumni Distinguished Professor

UNC School of Public Health Biostatistics Professor Joseph Ibrahim, PhD, has been named the recipient of an Alumni Distinguished Professorship by the Provost of the University of North Carolina at Chapel Hill, effective March 1, 2006. The appointment, approved by the UNC Board of Trustees on Feb. 23, is one of the University's highest honors and recognizes Ibrahim's exceptional record as a scholar, his distinguished record as a teacher and his model service to the profession. Ibrahim also was appointed faculty advisor for the UNC Lineberger Comprehensive Cancer Center and director of its Biostatistics and Data Management Core.

"Dr. Ibrahim is a cutting-edge biostatistical researcher who has the rare ability to undertake highly original methodologic work while also serving as a collaborative member of research teams," said Dr. Barbara K. Rimer, dean of the UNC School of Public Health. "He is a great asset to our School and our university, and this honor is well-deserved."

Ibrahim's research areas include Bayesian inference (a statistical framework used to analyze data), genomics, missing data problems, and cancer. He has been a leader in the design and analysis of cancer clinical trials and has over twelve years of experience working in such trials at the Dana-Farber Cancer Institute at Harvard and the UNC Lineberger Comprehensive Cancer Center.

In addition to planning and analysis of many melanoma clinical trials, Ibrahim has developed a cure rate model to estimate the proportion of patients cured by therapy. The application of the cure rate model to melanoma clinical trials has provided new insights into the potential for cure and changed the direction of the statistical activities of numerous cancer clinical trial centers including the melanoma committee in the Eastern Cooperative Oncology Group (ECOG), one of the most influential clinical trial groups in the United States. The cure rate model is becoming the standard in the design and analysis of melanoma clinical trials and may potentially have a major effect on the treatment of all chronic diseases on which a fraction of the patients are being cured. "The idea of the cure rate model is to determine if the survival distribution of patients appears to plateau on long-term follow-up," Ibrahim said. "It is possible that some therapies may have longer median survival rates, but fewer 'cures' while other therapies may have shorter median survival rates but high 'cure' rates. This type of statistical modeling allows us to determine the difference."

In his work on missing data, Ibrahim has developed a novel and general implementation of an algorithm for missing data problems called "EM by the Method of Weights." Following its development, Ibrahim collaborated with Dr. Cyrus Mehta of Cytel Software Corporation to incorporate the new methodology into several commercial statistical software packages, including SAS, S-plus, and EGRET.

Another significant area of research for Ibrahim has been in genomics, and, in particular, the analysis of DNA microarray data. Ibrahim was one of the first researchers to introduce model-based methods for determining differential gene expression in genomics studies.

A prolific author, Ibrahim has published 131 research papers during his 17-year academic career, most in top statistical journals. He has also published 14 refereed book chapters and written two advanced graduate-level books on Bayesian survival analysis and Monte Carlo methods in Bayesian computation. Ibrahim leads the biostatistics cores for two large multidisciplinary grants: the UNC Specialized Program of Research Excellence - or SPORE - in Gastrointestinal Cancer and the UNC Program Project in Systems Biology of Melanoma. In his new capacity, he will direct the Biostatistics and Data Management Core Facility for the UNC Lineberger Comprehensive Cancer Center. "Dr. Ibrahim's appointment is essential for the Cancer Center," said Dr. H. Shelton Earp III, director of the UNC Lineberger Comprehensive Cancer Center and professor of medicine and pharmacology. "His superb methodological research will keep our clinical and genomic efforts at the forefront. At the same time, he is an experienced, collaborative biostatistician who will make sure our faculty from the basic, clinical, and population sciences avail themselves of the best analysis tools."

A dedicated teacher and student mentor, Ibrahim wrote and won an NIH training grant last spring titled "Biostatistics for Genomics and Cancer." This prestigious grant provides funding for five pre-doctoral and two post-doctoral UNC students to study biostatistics.

Additionally, Dr. Ibrahim has played an important role in departmental and professional service. He is the Associate Editor for the Journal of the American Statistical Association, Applied Statistics, and Bayesian Analysis. He has been an Associate Editor for Biometrics and Lifetime Data Analysis. He also has served on several National Institutes of Health (NIH) and National Institutes of Mental Health (NIMH) Study Sections, including Epidemiology of Cancer (EPIC) and Biostatistical Methods and Research Design (BMRD), and has been a regular member on both EPIC and BMRD. He has taught several short courses in Monte Carlo Methods in Bayesian Computation, Bayesian Survival Analysis, and Missing Data in Regression Models, at the Joint Statistical Meetings (JSM), International Biometric Society Eastern North American Region (ENAR) as well as the Western North American Region (WNAAR). He is an elected fellow of the American Statistical Association (ASA) and the Institute of Mathematical Statistics (IMS), and an elected member of the International Statistical Institute (ISI).

Alumni Distinguished Professorships are made possible by donations from University alumni and recognize professors whose outstanding teaching and research activities ameliorate the quality and the stature of the University.

Farewell to Keith Muller

After 28 years of service to UNC Biostatistics, Professor Keith E. Muller accepted a position as Professor and Director of the Division of Biostatistics in the Department of Epidemiology and Public Policy, School of Medicine, University of Florida (Gainesville). As of July 1, 2006, he became an Emeritus Professor at UNC. In addition to leading a focused expansion of the division, he will also help start Bachelors, Masters, and Doctoral degree programs in Biostatistics.

Dr. Muller's research centers on developing more efficient designs and methods for selecting sample size in study planning, especially for medical imaging research. He is principal investigator of a grant concerning "Internal Pilots With Repeated Measures." Collaboration with medical imaging colleagues in Computer Science, Radiology, Radiation Oncology, Neurology, and Psychiatry supports the remainder of his time. Current applications include computer-generated 3-D drawing of organ outlines for planning cancer therapy, and automatic 3-D drawing of blood vessels in the brain with automatic detection of cancer.



We wish Dr. Muller the best of luck, and he will be sorely missed. For more information on Dr. Muller and his research, please see his webpage at <http://www.bios.unc.edu/~muller/>

Bangdiwala Receives Fulbright Award

Shrikant I. Bangdiwala, PhD, Research Professor in the Department, received a Fulbright Senior Specialist designation in the field of Public/Global Health, for the 5-year period 2005-2010. The Fulbright Senior Specialists Program is designed to provide short-term academic opportunities for U.S. faculty and professionals, and is one of several new Fulbright initiatives administered by the Council for International Exchange of Scholars. Under this program, Dr. Bangdiwala received two Fulbright Senior Specialist grant awards in the past, at the Department of Statistics of the School of Economic Sciences of the Universidad Nacional de Tucumán, Argentina (2005) and at the University of South Africa (UNISA), Johannesburg (2006). He has just been awarded a 3rd grant, to teach at the Karolinska Institute in Stockholm, in their "Research Methodology" doctoral-level course in the Department of Social Medicine, a World Health Organization Collaborating Center for Safe Communities Promotion. He will be staying for an additional 4-months at Karolinska, collaborating on research projects in injury prevention and safety promotion.



Dr. Bangdiwala on the infamous "Bridge on the river Kwai"

In April, Dr. Bangdiwala was invited by the organizers of the 8th World Congress on Injury Control & Safety Promotion, and the University of South Africa (UNISA), to participate as an instructor in a series of seminars, conferences and workshops in Durban and Cape Town through the mechanism of the US Fulbright Senior Specialist program.

He has also continued providing statistical advice to the Clinical Research

Collaborative Network (CRCN) of Thailand's Ministry of Public Health on design, conduct and analysis of multicenter studies, registries and trials. In May and July, he served as an external advisor to the CRCN.

In addition, Dr. Bangdiwala spent time in Chile during the months of January and August lecturing at the Universidad de Chile (Santiago) and Universidad de Valparaiso (Chile). Since 1997, UNC SPH has been collaborating with the Universidad de Chile in Santiago and their "Summer" School every January, in part due to the efforts of UNC Biostatistics alumni Dr. Claudio Silva and Dr. J. Francisco Cumsille. In addition, the Universidad de Valparaiso had a 3-year capacity building program for the researchers in the Faculty of Medicine, and he was given the opportunity to teach there, thanks to the efforts of UNC Biostatistics alumnus Dr. Carlos F. Henriquez.

Suchindran enhances UNC-Peking University health-care collaboration



Dr. Chirayath Suchindran (middle) with Dr. Xiaochun Qiao and Dr. Cuntong Wang

Dr. Chirayath Suchindran, professor of biostatistics, gave two presentations in October 2006 at Peking University in Beijing, China. Suchindran delivered a paper at the Beijing Forum 2006 and lectured at the Institute of Population Research of Peking University.

Peking University's president, Xu Zhihong, invited Suchindran to deliver his paper at the Forum, co-hosted by Peking University and the Beijing Municipal Commission of Education. The theme of the conference was "The Harmony of Civilizations and Prosperity for All – Reflections on the Civilization Modes of Humankind."

Suchindran's presentation at the Forum was titled "The Elderly Populations: Spatial Distribution and its Implication on Health." Using data about elderly populations from Beijing and surrounding areas, his paper concluded that understanding the

population dynamics of the elderly on the basis of geographical units is key to developing policies to improve the health of the elderly.

While in Beijing, Suchindran also delivered the Ma Yinchu Population Science Lecture at the Institute of Population Research of Peking University. His talk was titled "Emerging Issues in Demographic Research." The faculty at the Institute of Population Research publishes papers on population and economy, population and health, and other social issues.

Haibo Zhou named Director of Biostatistics Core for CEMALB



Dr. Haibo Zhou, associate professor of biostatistics, was named the Director of the Biostatistics Core for the Center for Environmental Medicine, Asthma and Lung Biology (CEMALB). The CEMALB is broadly concerned with environmental impacts on human health and cardiopulmonary health in particular. CEMALB is one of the leading centers in the world for translational research aimed at understanding the relationships between the environmental and health and translating that knowledge into measures that improve public health and help physicians identify and treat susceptible individuals. Environmental statistics research has long been a strong area of Dr Zhou's research expertise. Over the last decade, he has established extensive and successful collaboration with environ-

mental scientists at the UNC School of Public Health, the School of Medicine, and the National Institute of Environmental Health Sciences. He will develop an environmental and translational biostatistics program to conduct applied and methodological research in collaboration with colleagues at the CEMALB and the Human Studies Division of the National Health and Environmental Effects Research Laboratory of the US Environmental Protection Agency (EPA). Such collaborations offer a rich environment and opportunity to explore and develop novel statistical approaches.

Symons and Turnbull Retire



Professor Craig Turnbull retired July 31, 2006. Dr. Turnbull joined the department in 1971. He established the Bachelor of Science in Public Health (BSPH) program in 1975 and has been the Director for the program ever since. He has been a very active member in the American Public Health Association and the Delta Omega Society for a long time. Throughout his career as a Biostatistics faculty member, Craig has made valuable contributions to the Department, School and the University through various services.

We would like to take this opportunity to thank Dr. Turnbull for his contributions over the past 35 years. Congratulations and we wish you well in this new chapter of your life.

Professor Michael Symons retired on December 31, 2006. Dr. Symons joined the department in 1969 and has been a strong advocate of the teaching of statistics ever since that time; from 1993 through 1994, he was Chair-Elect and Chair of the Section on Teaching Statistics in the Health Sciences, in the American Statistical Association. He was also an Associate Editor for the Journal of the American Statistical Association and has done important research in occupational health and safety and in other areas. Mike has been an active member of the American Statistical Association, Sigma Xi, and Delta Omega Societies for a long time.



During his career, Dr. Symons has made many valuable contributions to the School and the Department through various services, has touched many lives, and leaves for us a long and deep legacy of biostatistical teaching.

Buzcova Announces Resignation

Dr. Petra Buzcova, announced her resignation as of August 14 in order to spend more time with her young daughter. She expressed an appreciation for having been a member of the Department and the Lineberger Comprehensive Cancer Center.

Cai and Stewart to Serve as Officers for ASA Section

The American Statistical Association has announced the results of the ASA 2006 Annual Election of Officers. Jianwen Cai and Paul Stewart of Biostatistics have been elected to serve. Dr. Cai, Ph.D., Professor in Biostatistics, will serve as Secretary/Treasurer for the Biometrics Section, while Dr. Stewart, Ph.D., Research Associate Professor in Biostatistics, will serve as Publications Officer for the Section on Statistical Consulting.

New Faculty

Dr. Hongtu Zhu, Associate Professor of Biostatistics, comes to us from Columbia University where he was employed as an Assistant Professor in the Department of Psychology. Dr. Zhu is a leading researcher in imaging methodology and has authored more than 35 important publications in the area. Dr. Zhu will also be associated with the Biomedical Research Imaging Center (BRIC).

Dr. Brian Neelon was appointed Research Assistant Professor of Biostatistics effective July 1, 2006. Dr. Neelon received his PhD in 2005 from UNC. In conjunction with his biostatistics position, Dr. Neelon will be working with the UNC Center for Health Promotion and Disease Prevention.

New Staff

Ashley Bizzell, Social Research Associate I
Janice Brahms-Butler, University Administrative Manager III
Forrest DeMarcus, Administrative Assistant II
Dana Edelen, Social Research Assistant I
Bryan Elliott, Applications Analyst
Franklyn Gonzalez, Statistician III
Niantao Jiang, Statistician III
Zhen (Jane) Li, Biostatistician
Matthew Minnotte, Project Unit Supervisor IV
Nathan Swick, Social Research Assistant I
Katy Tarter, Social Research Associate I
Pingping Wu, Social Research Associate I

Faculty Promotions

Amy Herring, March 1, Associate Professor
Joe Ibrahim, March 1, Alumni Distinguished Professor
Anastasia Ivanova, May 1, Associate Professor
Diane Catellier, June 1, Research Associate Professor
Michael Hudgens, September 1, Research Associate Professor

New Postdocs

Rui Song, under the direction of Dr. Haibo Zhou
Jinze Liu, under the direction of Dr. Fred Wright
Atsushi Kawaguchi, under the direction of Dr. Young Troung
Denise Esserman, under the direction of Dr. Charity Moore
Bo Zhang, under the direction of Dr. Haibo Zhou

Biostatistics Welcomes Visiting Faculty

The Department of Biostatistics is pleased to welcome the arrival of a visiting faculty member.

Dr. Chul Gyu Park, Associate Professor, Mathematics and Statistics, at Carleton University, Ottawa, Canada, and an active researcher in nonparametrics as well as constrained statistical inference, is in residence at UNC Biostatistics as a Visiting Scholar, from August 16, 2006 to August 15, 2007. He is carrying out his research work in the area of his interest in collaboration with Dr. Pranab K. Sen.

FACULTY & STAFF NEWS

2006 Biostatistics Award Winners



Pictured (l-r) Anna Hoffmeyer, Lisa Gravens-Mueller, Sherry Roberts, Laureen Pierre, Debbie Quach, and Cory Hughes.

Sherry Roberts, Administrative Assistant on the TAAG project at CSCC was awarded the 2006 Biostatistics Staff Award for Excellence. Sherry was recognized for an outstanding job in providing administrative support for researchers and data flow and scientific oversight, assisting the Steering Committee, the Co-Investigators, and research staff at the CSCC and other institutions. She was also praised for her enthusiastic and helpful resourcefulness that has benefited the overall CSCC, her excellent collaborative skills and originality.

2006 Star Heels award winners were: Anna Hoffmeyer, Calling Room Supervisor (SRU); Lisa Gravens-Mueller, Biostatistician/Supervisor (CSCC); Laureen Pierre, Social Research Assistant (CSCC), Debbie Quach, Accounting Technician (BIOS), Cory Hughes, Information/Communications Specialist (BIOS), Betsy Seagroves, Administrative Assistant (BIOS) and Margaret Tapp, Office Assistant (BIOS).



Stewart Kayak's 1200 Miles

Dawn Stewart (CSCC), a.k.a SandyBottom, participated in a 1200 mile adventure-race, the Ultimate Florida Challenge, in her kayak in March. The race was a 1200 mile circumnavigation of Florida, March 4-April 2.

Visit Dawn's homepage at http://home.earthlink.net/~dawn_stewart/ to follow her many adventures.

Dawn is pictured here in a Dreamcatcher kayak.

Bios Births!

Abigail Meihua Song blessed the world with her presence August 18 at 4:35 PM--exactly on her due date!! (Her father is an exact statistician!!) She weighed a perfect 7 lb 4 oz and was 20" long. She will be called Abby!

The Agans twins have finally arrived! Nikkil was born on Sunday, April 2, at 8:07am and weighed 5 lbs 13 oz and measured 18.5 inches long. His sister was born 1 minute later and weighed 5 lbs 8 oz and measured 17.5 inches long. Their looks and personality are very different! Mom and babies are fine and resting at home while Dad is just trying to breathe...and get a little bit of sleep too.

Jacob Gustav Strohlein was born to Susan and Frank Strohlein on September 8, 2006, weighing in at 8 lb. 4 oz. Jacob and his parents are doing well.

Jingjing Wu welcomes her new baby, Alice Wudi Cheng, born March 23, 2006, 7 lb 1.5 oz, 20.5 inches, at UNC hospitals in Chapel Hill. Jingjing and her husband Yuan Cheng are excited and the family is doing well. Jingjing is also a former Biostatistics graduate student, receiving her Masters degree in 2004.

Cory Hughes and her husband, Troy, are proud to announce the birth of Cora Amelia "Milly." She was born on December 6 at 1:58pm and weighed in at 8 lb 7 oz. 21 in. Both mother and daughter are doing well and resting.

Petra Buzcova's baby girl, Barbora, was born on April 10 at UNC Hospitals. She was born premature and spent her first days in NICU but is doing great.

News Shorts

Frances Hess, Business Manager for the past 6 years at the Collaborative Studies Coordinating Center, has joined the Pre-Award Services staff in UNC's Office of Sponsored Research effective Monday, September 11, as the new Contract Specialist. Frances takes a wealth of experience and know-how with her. Congratulations, Frances!

Varsha Shah (CSCC), after 5 years of service to UNC-Chapel Hill, has retired effective June 30. We wish her the best in her new adventures!

Ch. Kendoric's Riversong Mulroney, a pug, and the No. 2-ranked dog in the nation in 2005, became the winningest pug ever after the dog took first place in the toy group at the 130th annual Westminster Kennel Club Dog Show at Madison Square Garden in New York back in February 2006. Dermot, named after actor Dermot Mulroney, is owned by Carolyn Koch, the wife of **Dr. Gary Koch**. Dermot retired after the show.

Service Appreciation

5 Years

E. Vidya Antony
James Bartow
Laureen Pierre
Lisa Reeves-Brown
Kathy Roggenkamp
Todd Schwartz
Hongqing Tian
Donglin Zeng
Fei Zou

10 Years

Janet Smith

15 Years

Carolyn Hagy
Ding-Yi Zhao

20 Years

James Locklear

25 Years

Nancy Cohn

30+ Years

Richard Bilsborrow
Sandy Irving
Gary Koch
Larry Kupper
Pranab Sen
Chirayath Suchindran

STUDENT NEWS

Biostats Intramural Flag Football Team 2006 Graduates



(L to R) Front Row: Beth Jablonski, Allison Deal, Virginia Pate, Karyn Leniek, Jeanine Matuszewski

Back Row: Leann Long, Annie Green Howard, Dustin Long, Heather Wildasin, Matthew Gribbin, Tee Bahnson, Ryan May

Biostats Intramural Soccer Team



(L to R) Front Row: Dr. Michael Hudgens, Eugenio Andraca, Denise Esserman

Back Row: Jorge Gutierrez, Ashley Harris, Katie Poole, Dustin Long, Diana Lam, Chris Cummiskey, Jennifer Clark, Tyler Johnson

Not Pictured: Jeanine Matuszewski and Ryan May

May 2006

Leila Amorim	DrPH
Brian Armstrong	MPH
Jamie Bigelow	PhD
Ashleigh Michelle Francis	BSPH
Savannah Leigh Gelesko	BSPH
Margaret Hall	MPH
Dong-Ming Lin	MPH
Michael Pennell	PhD
Alyssa Darcelle Searles	BSPH
Sarah Stargel	BSPH
Miguel Villarreal	MS
Jeremy Wildfire	MS
Junyuan Xiong	MS

August 2006

Leela Aertker	MPH
Daniel Beavers	MS
Yimei Li	MS
Gheorghe Luta	PhD
Shenghua Mao	MS
Tomoharu Matsukura	MPH
Ju-Hyun Park	MS
Joy Wu	MS

December 2006

William Barry	PhD
April Coan	MPH
Rebekkah Dann	DrPH
Michael Despirito	MS
James Gear	DrPH
Salim Hyder	BSPH
Jennifer Marcello	MS
Emily Plunkett	BSPH
Seungshin Rhee	MS
Heather Wildasin	MS
Yue Zhao	MS

Delta Omega Awards

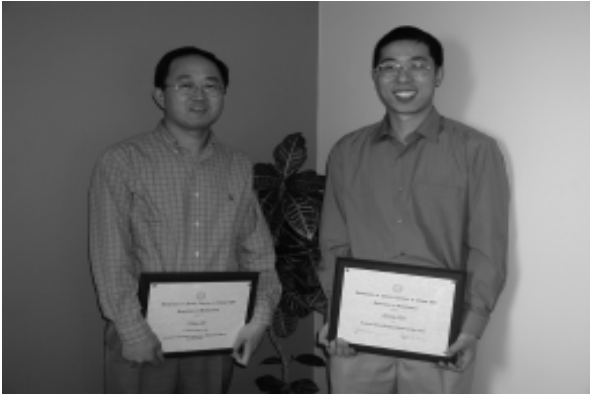
Delta Omega is a National Honor Society which exists to encourage research, provide scholarships, and recognize achievements in the field of public health. This year the following persons received honors from the Delta Omega Society:

Undergraduate Award: Ms. Sarah Stargel

Book Award: Ms. Annie Green Howard

Graduate Awards: Mr. Dong Ming Lin and Mr. Andrew Sterrett

Diao Wins Outstanding Dissertation Award



Pictured above (l-r) is Dr. Danyu Lin and Dr. Guoqing Diao.

Dr. Guoqing Diao was this year's recipient of the Barry H. Margolin Award for the Outstanding Doctoral Dissertation in the UNC Department of Biostatistics. Diao's PhD dissertation research is titled "Semiparametric Models for Mapping Quantitative Trait Loci in Experimental Designs and Human Pedigrees" and was written under the direction of Dr. Danyu Lin.

Dr. Diao's dissertation was focused on statistical methods for detecting genes that influence quantitative traits. He proposed novel semiparametric variance-components models, which involve infinite-dimensional nuisance parameters. He established the consistency, asymptotic normality and asymptotic efficiency of the nonparametric maximum likelihood estimators through modern empirical process theory and semiparametric efficiency theory, and developed efficient numerical algorithms to implement the corresponding inference procedures. His methods can be used for both linkage and association analysis and can handle any quantitative traits: normal or non-normal, censored or non-censored, univariate or multivariate. Dr. Diao's work unifies and extends much of the current literature on the linkage and association analysis of quantitative traits.

Paynter Receives Award

Lauren Paynter received first place in the North Carolina Sociological Association under-graduate student paper contest for her paper, "The Effects of Socio-economic Status on Socialization and Delinquency."

Chung Receives Award for Best Master's Paper

Yeonseung Chung was selected to receive the Regina C. Elandt-Johnson Award for Best Master's Paper. Chung's master's paper topic was "Zoom-in Design for Dose-Finding in Oncology." In the MS thesis, Yeonseung developed a new sequential non-parametric design for dose-finding with binary response. This work is innovative because the new approach to dose-finding was used allowing utilizing the maximum information available to make the decision about the next dose assignment. The new design was developed by applying the theory of Markov chains to group up-and-down designs. Chung's work was supervised by Dr. Anastasia Ivanova.

Hae-Young Kim Receives GEAB Award

Hae-Young Kim has been selected to receive an honorable mention award, titled The GEAB Award, in the Graduate Education Advancement Board Impact Award Competition for her research project on group testing. This award, sponsored by The Graduate School's external advancement board of private citizens, recognizes outstanding graduate student research of particular benefit to North Carolina. Kim was recognized for her outstanding research during the Graduate School's Annual Student Recognition Celebration on Thursday, April 6, in the Carolina Club of the George Watts Hill Alumni Center. Kim's research was supervised by Dr. Michael Hudgens, a Research Associate Professor in the Department of Biostatistics.



BIOS Student Travel Fund

Julie McMillan and other graduates of the Department created an endowed student travel fund in 2001. Dr. Gary Koch has offered to match contributions to this fund up to a specified amount. In 2006 the fund was able to help support sending 12 Biostatistics graduate students to ENAR and ASA where they made presentations on their research. If you are interested in contributing to this fund please send your contribution to: Debbie Quach, Accounting Technician, Department of Biostatistics, UNC-CH, CB#7420, Chapel Hill, NC 27599-7420. Checks should be made payable to UNC-CH. Please note that your contribution is specifically intended for the Biostatistics Student Travel Fund. Thank you for your support.

Pan Wins Kupper Dissertation Publication Award

Zhiying (Jean) Pan, a former PhD student, received the Kupper Dissertation Publication Award. Dr. Pan conducted her doctoral dissertation research in longitudinal data analysis under the supervision of Dr. Danyu Lin.

Dr. Pan's dissertation was focused on regression methods for longitudinal studies with possible complex sampling designs. Her dissertation focused on 5 major topics: (1) generalized linear models for survey data; (2) goodness-of-fit methods for generalized linear models with survey data; (3) goodness-of-fit methods for generalized linear mixed models; (4) generalized linear mixed models for longitudinal survey data; and (5) goodness-of-fit methods for generalized linear mixed models with longitudinal survey data.

An article based on topic (3), goodness-of-fit methods for generalized linear mixed models, was published in the December 5 issue of *Biometrics* and is titled "Goodness-of-Fit Methods for Generalized Linear Mixed Models". Although generalized linear mixed models have been widely used, there are virtually no methods to check the adequacy of the models. Dr. Pan's paper provides a class of numerical and graphical methods for inspecting various components of the generalized linear mixed model. These methods are expected to be widely used in practice.

The Kupper Dissertation Publication Award is given annually to recognize an outstanding doctoral student and his or her dissertation advisor for the best doctoral dissertation-based paper appearing in a prestigious biostatistical journal. Drs. Pan and Lin are the third recipients of this award.

Gelfond Awarded Fellowship

Jonathan L. Gelfond was awarded the Howard Hughes Medical Institute Biological Sciences Predoctoral Fellowship. He was among 217 graduate students honored at a Student Recognition Celebration held on April 6, 2006. The Graduate School provided 4 workshops in 2005-2006 and assisted 135 students in their application for external fellowships.

Andraca Receives Amgen Fellowship

In January, 2006, the Amgen Dissertation Fellowship was established to provide support to an outstanding Ph.D. student in the Biostatistics Department. The purpose of the scholarship is to provide support to the awardee during the preparation of his/her dissertation, the topic of which must be related to methods applicable to pharmaceutical research. Students who have completed all of their course work for the PhD degree and have passed both the theory and applications portions of the doctoral qualifying exams are eligible for the fellowship. Drs. Ed Davis and Lisa LaVange, co-directors of the fellowship program, reviewed several highly qualified applicants in this initial year. The first Amgen Dissertation Fellowship recipient is Eugenio Andraca Carrera.



Andraca (middle) is pictured with Dr. Bahjat Qaqish and Dr. Lisa LaVange.

Slaughter Presents at 7th Annual Women's Health Research Day

Chris Slaughter, MS, Doctoral Candidate, was selected by the Center for Women's Health Research to present a paper at the 7th Annual Women's Health Research Day held on April 5, 2006. His topic was "Estimating Early Fetal Growth Rate and the Association of Growth Rate with Pregnancy."

2006 Student Awards

Justin Clayton received this year's Fryer Award, given by the Department of Biostatistics and made possible by contributions of John and Diane Fryer. Justin also received the School of Public Health's Ibrahim Award as well as the Merit Award from the Graduate School.

Diana Lam won the Greenberg Scholarship, an award offered to outstanding applicants by the Department of Biostatistics as a supplement to a traineeship or graduate research assistantship. This scholarship is named for Bernard G. Greenberg, founder and former chair of the Department of Biostatistics, and is made possible by generous contributions by the Greenberg family and friends. Diana also received the Merit Award from the Graduate School.

Natalia Gouskova has been awarded the Mohberg Award. This award is offered to an outstanding applicant to the Department and made possible by gifts to the Public Health Foundation by the family of Noel Mohberg.

Andrea Byrnes received the David and Lucy Hardison Scholarship, offered to an outstanding applicant to encourage studies in bioinformatics in the department. This award is made possible by the gifts of the Hardison family.

Katie Poole received the GlaxoSmithKline Scholarship, made possible by a GlaxoSmithKline donation to an applicant chosen by the department. Katie also received the Merit Award from the Graduate School.

Kelley Wekheye was the recipient of the Minority Presence Award from the Graduate School.



Award winners (left to right) Andrea Byrnes, Justin Clayton, Diana Lam, and Katie Poole (Not pictured: Natalia Gouskova)

Students Make Presentations at ENAR and ASA Joint Statistical Meetings

The following Bios students made presentations at the ENAR meeting in March 2006:

- Hae Young Kim, "Operating Characteristics of Group Testing Algorithms for Case Identification in the Presence of Test Error."
- Sangwook Kang, "Weighted Estimated Equations for Retrospective Studies with Possibly Correlated Failure Times."
- Sola Park, "Multivariate Gaussian Power Confidence Intervals due to Estimating Covariance in One or Two Groups."

The following Bios students made presentations at the Joint Statistical Meetings of the American Statistical Association in Seattle, Washington in August 2006:

- Jackie Johnson, *Free SAS/IML® Software for Computing Confidence Limits for Power in the Multivariate and Univariate Approaches to Repeated Measure*
Authors: Jackie Johnson, Matt Gribbin, Sola Park, and Keith Muller;
- Matt Gribbin, *Approximate Confidence Intervals for Power in UNIREP Analyses*
Authors: Matt Gribbin, Jackie Johnson, and Keith Muller;
- Shankar Viswanathan, *Paradoxes Revisited: Comparison of B-statistic with Kappa*
Authors: Viswanathan Shankar and Shrikant I. Bangdiwala;
- Tsui-Shan Lu, *Statistical Inference for Multivariate Outcome Dependent Sampling Design*
Authors: Tsui-Shan Lu and Haibo Zhou;
- Leela Aertker, *Estimated Response Propensities as a Means to Evaluate Error Effects Due to Nonresponse*
Authors: Leela Aertker and William Kalsbeek;
- Jamie Powers, *ROC Curve Analyses in Osteoporosis Screening*
Authors: James Powers and Margaret Gourlay and Kristine Ensral

OPPORTUNITIES FOR GIVING

Gifts to the Department of Biostatistics may be earmarked for one of our gift funds. If you make a gift with no designation, the gift will go into a general fund for the department.

Biostatistics Alumni Fund - to support the Barry H. Margolin Dissertation Award for the best doctoral dissertation in the department each year.

Bernard Greenberg Scholarship Fund - to provide support for merit-based scholarships for students in the Department.

John and Diane Fryer Fellowship- to support a fellowship in biostatistics and to recruit outstanding students.

The C. David and Lucy S. Hardison Endowed Scholarship Fund in Bioinformatics - to support a scholarship fund in honor of David and Lucy Hardison.

James D. Hosking Memorial Fund for CSCC Professional Development - to support training and travel expenses for staff to increase their growth and development in the field of clinical trials research.

Kupper Dissertation Publication Award Fund- to honor yearly both the doctoral student and the dissertation advisor of the best doctoral dissertation-based paper published in a prestigious biostatistical journal.

Regina C. Elandt-Johnson Master's Paper Award in Biostatistics - to provide an award in the name of Regina C. Elandt-Johnson to a student in the Department of Biostatistics for the accomplishment of an outstanding Master's paper.

Roy Kuebler Fund - to support junior faculty sabbaticals.

Max Halperin Scholarship Fund - to provide a fellowship to a deserving first or second year doctoral student currently enrolled in the Department.

Mohberg Scholarship in Biostatistics - to support a scholarship fund in honor of the Mohberg family.

Pranab K. Sen Visiting Professorship in Biostatistics- to support visiting faculty from developing countries.

The Biostatistics Student Travel Fund- to support biostatistics student travel.

The Biostatistics Staff Development Fund - to support an annual Staff Award for Excellence in the department.

Checks should be made payable to: The UNC Chapel Hill Department of Biostatistics. So that your gift may be properly credited, please indicate whether it should be applied to one of the gift funds named above. Mail to:

Debbie Quach
Department of Biostatistics
School of Public Health, CB#7420
Chapel Hill, NC 27599-7420.

All contributions are tax deductible. If your employer matches gifts to educational institutions, please enclose the appropriate forms.

We thank the following individuals and corporations, whose donations provide much needed funds to support BIOS graduate education. We are very grateful for your help. If, for any reason, you know of a name we have omitted, please let us know and we will see that he/she is recognized in the next issue of *BiosRhythms*.

Corporations

Agmen, Inc. GlaxoSmithKline Rho, Inc.

Individuals

Keir Davis Adam (BSPH '90, MS '92)
 M Taylor Alexander (MSPH '79)
 A John Bailer (PHD '86)
 Walter Phillip Bailey (MPH '69)
 Violette Kasica Barasch (MSPH '80, DRPH '85)
 William Cudd Blackwelder (PHD '77)
 Emily Trexler Blair (BSPH '97)
 Michael Neal Boyd (MS '81, PHD '82)
 Kerrie Eileen Boyle (DRPH '83)
 Jennifer Morton Boyles (BSPH '86)
 Edward Carroll Bryant (DRPH '83)
 Brian Calingaert (MS '97)
 Martha L Carlson (MPH '01)
 L Douglas Case (MSPH '81, PHD '87)
 Terry Alan Cox (MS '95, PHD '99)
 Sonia Kropp Davis (BSPH '88, MS '90, DRPH '94)
 Todd Alexander Durham (BSPH '93, MS '95)
 Marianna Dow Edgerton (MPH '75)
 Brenda Kay Edwards (PHD '75)
 Leah Bennett Edwards (MS '90, PHD '92)
 Mohamed Nabil El-Khorazaty (MS '71, PHD '75)
 Patricia Allen Estes
 Jennifer Faris-Bailer
 David Alan Fenstermacher
 Terry Lynn Flanagan
 Daniel Herbert Freeman, Jr (PHD '75)
 Ji-Hyun Lee (MS '00, DRPH '03)
 Joseph Anton Galanko (PHD '00)
 Stuart Alan Gansky (BSPH '88, DRPH '96, MS '92)
 Jerry Gray Gentry (MSPH '69)
 Dennis Gillings
 Lucinda Howell Glover (MPH '88)
 G. Jay Graepel (PHD '81)
 William Henry Gray III (BSPH '84)
 Kathryn Jean Grochowski (MPH '89)
 Alula Hadgu (DRPH '93)
 Frank Eanes Harrell Jr (PHD '79)
 A Dale Horne (DRPH '85, MPH '79)
 Virginia Jackson Howard (MSPH '82)
 George Howard (MSPH '82, DRPH '87)
 Chia Mun Hui
 Peter Bert Imrey (PHD '72)
 Deborah Dundas Ingram (PHD '83)
 Christopher James Johnson (MPH '92)
 Brian Paul Kilgallen (MS '98)
 Ho Kim (PHD '96)
 Tonya Sharp King (MS '95, PHD '99)
 Carolyn Johnson Koch
 Gary Grove Koch
 Kenneth Joseph Koury (PHD '81)
 Lawrence Louis Kupper
 Lisa Morrissey LaVange (PHD '83)
 Kelvin K. Lee (PHD '78)
 Yun Li (MS '01)
 Suzanne Elizabeth Long (MPH '68)
 William Whiting Lyon (MSPH '74)
 Julia Prince MacMillan (MPH '80)
 Rose Marie Martin (MPH '63)
 Joseph Vernon Mauney (BSPH '95, MS '97)
 Evelyn J. McKee
 Robert Glenn McMillan
 Cynthia Swisher McMillan
 Anne Ruth Meibohm (MS '81, PHD '92)
 Katherine Nuckolls Monti (PHD '75)
 Robert Burns Moorhead Jr
 Jeanenne Little Nelson (MSPH '77)
 Jean Pan (MS '97, PHD '05)
 Cora Breeden Parker (DRPH '97, MSPH '79)
 Barbara Allison Prillaman (MS '95)
 Xiang Qin (MS '99)
 Karen Hillix Reinfurt
 Donald William Reinfurt
 Clifford Brian Reinhardt (BSPH '97)
 Barbara K Rimer
 Kimberly Boomer Ring (MPH '97)
 Jamie Pace Roycroft (BSPH '89)
 Daniel Ray Scharf (MS '01)
 Marjory Bagby Schwartz (MSPH '77)
 Todd Andrew Schwartz (DRPH '04, MS '98)
 Grace Rita Selicato (MS '95)
 Pranab Kumar Sen
 Carol J Shannon (MSPH '82)
 Lynn Roberta Shemanski (PHD '90)
 Chih Chung Shen (MSPH '79, PHD '83)
 Chuan-Feng Shih (MS '91)
 Fraser B Smith (MS '85, PHD '92)
 Ellen Sim Snyder (MS '84, PHD '93)
 Seth Michael Steinberg (MS '81, PHD '83)
 Maura Ellen Stokes (BSPH '78, MSPH '79, DRPH '86)
 David John Svendsgaard (PHD '77)
 John DeWeese Taulbee (MS '76, PHD '77)
 Douglas James Taylor (MS '92, PHD '01)
 Gene Dennis Therriault (MSPH '71)
 Martha Mancewicz Timmer (MS '94)
 YiaYin Wan (BSPH '01)
 Fredrick Seymour Whaley (MSPH '75, PHD '83)
 O Dale Williams (MPH '65, PHD '71)
 George Wynns Williams (PHD '72)
 Diane Hopper Williams (MS '92)
 Wayne Edward Wormsley (MPH '85)
 Feng Ye (PHD '00)
 Carl Nobuo Yoshizawa (PHD '84)



THE UNIVERSITY
 of NORTH CAROLINA
 at CHAPEL HILL

Nonprofit Organization
 U.S. Postage
PAID
 Permit No. 177
 Chapel Hill, NC

Department of Biostatistics
 School of Public Health
 CB# 7420, 3103 E McGavran-Greenberg Hall
 The University of North Carolina at Chapel Hill
 Chapel Hill, NC 27599-7420